

Department of Civil and Environmental Engineering

# INTERSECTIONS

## Hoque Endows Geotechnical Laboratory



Enamul Hoque became the first donor to name a lab within the new ISTB2 research facility.

On December 1, 2007, the large-scale geotechnical testing lab will be renamed the EM Hoque Geotechnical Laboratory.

Hoque, who earned a master's degree in civil and environmental engineering from ASU in 1985, operates Phoenix-based Hoque & Associates. His \$250,000 gift to the Department of Civil and Environmental Engineering continues his family's tradition of community service. Hoque & Associates is a geotechnical engineering firm that provides innovative and cost effective solutions on projects such as design of the outer-loop bridges in Phoenix for the Arizona Department of Transportation. His professional contributions have earned Hoque "Fellow" status from the American Society of Civil Engineers.

## CEE Receives \$400K Endowment for Groundwater Contamination Studies

In February of this year, the CEE Department received word that it was the beneficiary of a \$400,000 endowment for the Phoenix/Scottsdale Groundwater Contamination Scholarship for Environmental Science.

The endowment will fund scholarships and fellowships for the study of groundwater contamination and water remediation. The gift was made from unused settlement funds from local groundwater contamination litigation. The donors, who wish to remain anonymous, want to put the unused funds to work to address the types of problems that were the source of the litigation and determined that funding scholarships and fellowships within the Department of Civil and Environmental Engineering at ASU was the best vehicle for accomplishing that objective. Income from the endowment will be awarded annually to one or more students at ASU who have demonstrated financial need and are committed to the study and solution of environmental problems in Arizona, with emphasis on groundwater pollution and water remediation. First priority will be given to Arizona residents.

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# New Pavement Design Standard

A new, long awaited, highway pavement design and rehabilitation methodology is close to becoming a national reality thanks in major part to ASU.



This summer, a new Pavement Design Guide, developed by ASU in association with ARA, Inc., took a major step towards becoming an AASHTO (American Association of State Highway and Transportation Officials) Procedure. The Design Guide was unanimously approved by a vote of 44-0 by the AASHTO Subcommittee on Design and Materials at its July meeting. All that remains for the Design Guide to become an official AASHTO document is a final vote of approval by the AASHTO Standing Committee on Design.

This new Design Procedure, for all types of highways in the U.S., is the culmination of over seven years of research work and nearly \$10,000,000 in research expenditures. This NAS-NCHRP sponsored project represents the single largest transportation research project ever awarded in the United States.

ASU professor **Matthew W. Witzak**, (a recent recipient of two prestigious honors – see page 4) was the team leader of the asphalt (flexible pavement) component of the new Mechanistic-Empirical Pavement Design Guide (MEPDG). He overviewed a team of 28 research engineers including 23 members of the ASU staff or foreign experts who spent sabbatical time at ASU working under Witzak. The new MEPDG is a very significant departure from the old empirical design procedures that have been in practice for over 70 years. The new Design Guide is based upon fundamental (scientific) mechanistic principles that allow the design engineer to more accurately predict pavement distress and performance for any given mix of traffic conditions, environmental conditions at the site, and locally available materials for a wide variety of pavement cross sections. The new design methodology developed on this project is expected to have a significant impact on pavement design and rehabilitation, not just in the United States, but around the world. Continuing research at ASU in the CEE Department's Transportation Materials group is focusing on refinement and local calibration of the new Design Guide.

## Strong CEE Growth Continues



Edward Kavazanjan  
Interim Chair

The Civil and Environmental Engineering program at ASU continues to grow by almost every measure. Our undergraduate and graduate enrollments are approaching historic highs and should continue to grow over the next several years. The department has continued to add faculty and as recent additions to the faculty establish their research programs our sponsored research volume continues to grow.

Our undergraduate enrollment surpassed 600 last year, as we welcomed over 150 freshman and transfer students into the program, and we awarded 85 undergraduate degrees last summer, fall, and spring. Graduate enrollment increased to 118, with 15 Master's degrees and 10 PhD degrees awarded. Furthermore, all of our graduates who wanted jobs had jobs lined up long before graduation, reflecting the continued strong demand for civil and environmental engineers both locally and nationally. On the research front, our sponsored research expenditures topped \$4 million last year and we have added one more tenure track faculty member and two new research faculty to our staff. Furthermore, as evidenced in the faculty notes section of this newsletter, our faculty continued to garner national attention for their expertise and leadership, highlighted by Matt Witczak's recognition as an Honorary Member of AAPT and his selection as the Thomas B. Deen Distinguished Lecturer at this year's TRB meeting in Washington. Sandra Houston's role as co-organizer and Brad Allenby's role as keynote speaker in the recent Summit on the Future of Civil Engineering sponsored by the National Science Foundation and ASCE also highlight the leadership and recognition of ASU CEE faculty on a national level.

The continued strong growth of our program does not come without a little pain, as we struggle to meet the demands of our increased enrollment, new laboratory facilities, and growing research programs. We have added needed laboratory and office support staff for our program over the past several years, some of whom are supported on soft money (discretionary spending). One of the current realities of the educational system is that we have to rely more and more on soft money to support our programs as they expand. Our Friends of Civil Engineering remains an important source of this discretionary funding, helping support undergraduate participation in the annual ASCE Southwest Student Conference, graduate student travel to conferences and meetings, expenses for invited speakers to our seminar programs, and some of the soft money office support. However, the department still needs additional discretionary funding to support our research and teaching programs. We did procure the first major endowment for CEE this past year (see the articles on page 1 about the Phoenix/Scottsdale Groundwater Fellowship and the Hoque Geotechnical Laboratory), but we need more gifts like these to secure the financial base of the department. So, as the university, engineering school, and department embark on a major capital fundraising drive, I ask you all to consider helping us out in any way you can so we can sustain our growth and move CEE at ASU into the top rank of CEE programs nationally.



**Matthew Witczak**, professor in the Department of Civil and Environmental Engineering, has been honored with a prestigious award at the 2007 Annual Meeting of the Association of Asphalt Paving Technologists (AAPT). The “Honorary AAPT Members” award is given to those

people recognized by AAPT as having outstanding eminence and of long experience in the practice of asphalt paving technology. Only 29 people have been admitted to this role of honor since award conception in 1927. Witczak has also been selected by the Technical Activities Council of the Transportation Research Board (TRB) to present the Thomas B. Deen Distinguished Lecture at the 2008 TRB Annual Meeting. He is being recognized as one of the outstanding leaders in the area of pavement design and analysis.



**Brad Allenby**, the Lincoln Professor of Ethics and Engineering, was recently named Templeton Fellow for 2007-2008 under a \$500,000 grant from the Metanexus Institute to ASU to study the constructive engagement of technology, science, and religion. The focus of the multiyear project, entitled “Facing the Challenges of Transhumanism: Religion, Science, Technology,” and of Allenby’s work as Templeton Fellow, will be to examine the philosophical, social, legal, political, technological and religious implications of transhumanism. As Templeton Fellow, Allenby will present a series of public lectures and write a book discussing these implications and suggesting appropriate responses.

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**Jean Andino**, associate professor in the Department of Civil and Environmental Engineering and the Department of Chemical Engineering, is featured in the current issue of the National Society of Professional Engineers magazine in an article that recognizes engineers who are making significant impacts in their disciplines. Andino also was recently honored by the National Council of Examiners in Engineering and Surveying for five years of service to the organization’s work in development of the Fundamentals of Engineering exam (formerly known as the EIT exam).



**John Crittenden**, professor in the Department of Civil and Environmental Engineering, is the recipient of a Science Foundation Arizona Competitive Advantage Award in the amount of \$399,280. Crittenden’s project will provide holistic and systematic knowledge-based tools and strategies for more sustainable urban development. This award, part of \$1.5 million in SFAz funds awarded to eight ASU professors, is designed to provide a catalyst for researchers of exceptional quality to help secure future federal funding.



**Barzin Mobasher**, professor in the Department of Civil and Environmental Engineering, was featured in the April 2007 edition of STRUCTURE magazine for his article “Rehabilitation of Concrete Structures: Carbon Fiber Reinforced Polymer”. The new CEE Structures Laboratory was featured on the cover.





**Paul Johnson**, executive dean of ASU's Ira A. Fulton School of Engineering, has been given a Lifetime Achievement Award from the International Conference on Soils, Sediments and Water. The award recognizes "significant contributions to the understanding

and solution of soil, sediment and groundwater pollution problems." Johnson, a professor of civil and environmental engineering, joins George M. Rusch of Honey International and Annetta Wilson of Oak Ridge National Laboratory as the first winners of the newly established award.



**Kamil Kaloush** was promoted to associate professor with tenure effective 2007/08 in the Department of Civil and Environmental Engineering. Kaloush will be Chairing the Transportation Research Board Subcommittee on "Paving Materials and the Urban Climate," for the

next three years. The subcommittee will focus on better understanding how paving materials interact with the urban climate to mitigate the Urban Heat Island (UHI) impacts. Kaloush will be assisted by Dr. Jay Golden an assistant professor in the School of Sustainability at ASU and faculty affiliate with CEE.

*Our sponsored research expenditures topped \$4 million last year and we have added one more tenure track faculty member and two new research faculty to our staff.*

**Simon Washington**, professor in the Department of Civil and Environmental Engineering just returned from a semester (Spring 2007) of research collaboration in Sydney, Australia at The Institute of Transport and Logistics Studies (ITLS). While in Sydney, Washington presented seminars on his research on Arizona, engaged in a small amount of teaching, and conducted research with ITLS faculty on statistical issues related to survey respondent bias and missing data problems in transport.



**Paul Westerhoff** has been promoted to the position of professor in the Department of Civil and Environmental Engineering effective 2007/08. In receiving his promotion, Westerhoff, the winner of the 2006 Paul L. Busch Award for the Water Environment Research Foundation, was recognized as this year's University Exemplar for promotion to full professor. This prestigious recognition carries with it \$50,000 in discretionary funds for Paul from the university over the next five years. Westerhoff is also being recognized as one of the country's most promising young engineers through his selection to participate in the National Academy of Engineering's U.S. Frontiers of Engineering Symposium.



**Eric Williams**, assistant professor in the Department of Civil and Environmental Engineering, was recently quoted in the Financial Times article "Computer makers miss the big green picture" by Maija Palmer and Kevin Allison. The article talks about Williams' research on the environmental challenges facing computer makers such as reducing power consumption, eliminating toxic components from computer equipment and cutting carbon dioxide emissions.





**Rosa (Rosy) Krajmalnik Brown** will join CEE as an assistant professor in August 2007. Before joining CEE Rosy was a postdoctoral researcher working in the Center for Environmental Biotechnology at ASU. She received her B.S. (1996) in Industrial Biochemical Engineering from UAM

(Autonomous Metropolitan University) in Mexico City and her M.S. (2000) and Ph.D. (2005) in Environmental Engineering from Georgia Institute of Technology. Her primary area of research interest is biotransformation and fate of environmental contaminants with an emphasis on environmental applications of molecular microbial ecology. Other areas of interest include bioremediation of soil, sediments, and groundwater and the use of microbial systems for bioenergy production. Her research has been published in Applied and Environmental Microbiology, Environmental Science and Technology, FEMS Microbiology Ecology and Environmental Microbiology.



**Yongsheng Chen** joined Arizona State University as an associate professor research of civil and environmental engineering in November of 2003. Prior to this appointment, Yongsheng worked as an associate professor at Nankai University in China. His primary interest is in the areas of

environmental applications of nanomaterials and environmental and health implications of nanomaterials. In addition, he is also interested in urban sustainability issues. Yongsheng has served as principal and co-principal investigator on grants totaling about \$3.5 million since his start as a professor in China in 1997. He has also published more than 25 refereed-journal papers.

**Hugo Destailats** joined CEE in 2006 as an assistant professor research. Hugo holds a joint appointment with the Lawrence Berkeley National Laboratory. He earned his Ph.D. in Chemistry at the University of Buenos Aires (Argentina), and was a postdoc at the California Institute of Tech-



nology. Hugo studies various aspects of environmental chemistry including the fate and transport of organic pollutants, the characterization of pathways of human exposure to toxic environmental contaminants and the development of advanced remediation technologies for water and air cleaning. A recent focus of his work has been the study of chemical transformations of pollutants in the indoor environment. He is author of more than 20 journal articles published in Environmental Science and Technology, The Journal of Physical Chemistry A, Atmospheric Environment, Industrial and Engineering Chemical Research, The Journal of Physical Organic Chemistry and Indoor Air, among other journals.

**Bruce Marsh** has joined CEE as an adjunct professor. Bruce graduated with environmental engineering degrees from the University of Florida in 1978 and Oregon State University in 1980. He is a professional engineer and currently is the environmental manager at Resolution Copper



Mine in Superior, Arizona with Rio Tinto and BHP Billiton. Bruce's professional experience includes nine years working on Freeport's Grasberg mine in Indonesia, senior environmental advisor to the Panama Canal Authority (an \$8 billion project) and work for the government in Dubai (a \$36 billion development). Bruce works with Dr. Brad Allenby on sustainability issues and has developed case studies to help students gain a better understanding of how large development projects evolve and the sustainable development challenges that go along with these enterprises for our CEE 300 and CEE 400 classes.



### Friends of Civil Engineering (FOCE)

is our industry support group that provides much needed discretionary funds to enable the department to assist students with educational and research activities with the end result of providing the civil engineering community with well-rounded, educated professionals. FOCE also supported our first CEE Laboratory Open House and several social events including our fall student mixer and a spring barbeque at an ASU/ UCLA baseball game. Continued membership growth has enabled us to consider supporting additional student programs in the coming year, including book scholarships for our seniors and financial support for the new Engineers Without Borders chapter at ASU. We are grateful to our FOCE members for the opportunities their support provides us. Information on FOCE membership can be found on the CEE website at <http://cee.fulton.asu.edu> or by calling the department office at (480) 965-1713.



One of the many labs visited during the annual CEE Lab Tour held in March 2007 and sponsored by the Friends of Civil Engineering

### Friends of Civil Engineering Steering Committee

- Tom Schmitt, T & S Diversified, Inc. (Committee Chair),
- Wylie Bearup, City of Phoenix,
- Kent Dibble, Dibble and Associates,
- Ron Hilgart, CMX,
- Ed Kavazanjian, ASU CEE,
- Bruce Kay, Ninyo and Moore,
- Kohinoor Kar, ADOT,
- Chris Kmetty, City of Peoria,
- Bruce Larson, RBF Consulting,
- Mike Manthey, ADOT,
- Dick Mettee, Stanley Group,
- Greg Mona, Otak, Inc.,
- Cyndi Newman-Crane, Kleinfelder, Inc.
- Tauny Woo, City of Phoenix

### Friends of Civil Engineering Members

- |                                 |                               |
|---------------------------------|-------------------------------|
| ALPHA Geotechnical & Materials  | Hoskin-Ryan Consultants, Inc. |
| AMEC Earth & Environmental      | Kennedy/Jenks                 |
| Atwell-Hicks                    | Kimley-Horn and Associates    |
| Ayres Associates                | Kleinfelder                   |
| Black & Veatch Engineers        | Chris and Sandi Kmetty        |
| Brown and Caldwell              | Geza and Esther Kmetty        |
| Burgess & Niple                 | Lee Engineering, LLC          |
| Carollo Engineers               | Malcolm Pirnie Inc.           |
| Carter & Burgess, Inc.          | M2 Group, Inc.                |
| CMX, LLC                        | Nabar Stanley Brown           |
| Coe & Van Loo Consultants, Inc. | Ninyo & Moore                 |
| Consultant Engineering, Inc.    | Otak, Inc.                    |
| Damon S. Williams Associates    | PB Americas, Inc.             |
| Dewberry                        | PBS&J                         |
| Dibble & Associates             | RBF Consulting                |
| Entellus                        | Stanley Consultants, Inc.     |
| EPS Group Inc.                  | Stantec Consulting, Inc.      |
| Erie & Associates, Inc.         | T & S Diversified, Inc.       |
| GEC SA & B                      | Western Technologies, Inc.    |
| Golder Associates Inc.          | Wood Patel and Associates     |

# 2007-2008 CIVIL AND ENVIRONMENTAL UNDERGRADUATE SCHOLARSHIPS

The following students were recognized for their achievements at the 2007 Celebration of Excellence held April 24, 2007 at the Memorial Union on ASU's Tempe campus.

4.0 Award (4.0 GPA in Upper Division Classes)  
**Taylor Bills, Katherine Jones, Clifton Neff**

Arizona Community Foundation Scholarship (2006/07) – **Daniel Burt and Sergio Sanchez**

CMX Scholarship – **Sonia Runyan**

Collaborative Interdisciplinary Research Community (CIRC) Scholarship (2006/07) – **Scott Andreasen**

Collaborative Interdisciplinary Research Community/ Maricopa Engineering Transfer Scholars (CIRC/METS) Scholarship (2006/07) – **Gibran Becerra, Ivan Bermudez, Armando Fuentes, Aaron Peshlakai**

Distinguished Senior Award Civil Engineering  
**Caroline Newcombe**

Dorrance Family Scholarship (2006/07)  
**Maria Contreras**

Freshman Scholarship (2006/07) – **Mitzi Olsen**

Kenneth R. Geiser, Sr. & Kathryn Geiser Memorial Scholarship – **Ryan Riggs**

Bruce T. Halle Scholarship (2006/07)  
**Summer Schmitt**

Elyse and Paul Johnson Environmental Scholarship  
**Hong Luo**

Rod J. McMullin SRP Water Resources Scholarship  
**Daniel Gerrity, Quentin Travis**

Carl W. Meng Scholarship – **Courtney Oversby**

National Action Council for Minorities in Engineering (NACME) Scholarship – **Nicholas Aguilar, Leslie Arriaga, Rene Bermudez, Jonathan Gonzalez, Richard Polanco, Paulina Reina, Joshua Salazar**

Nickless Scholarship (2005/06)\*  
**Niqui Valdez-Goodloe**

Charles & Nancy O'Bannon Scholarship  
**Katherine Jones**

OTAK Scholarship (2006/07)\* – **Shayne Lopez**

Paragon Structural Design Scholarship  
**Mitchell Miller**

Paragon Structural Design Scholarship (2006/07)\*  
**Taylor Bills**

Paul Mueller Concrete Scholarship (2006/07)\*  
**Erica Eggen**

Arlo Richardson Scholarship – **Andrew Brice, Aaron Pellow, Ryan Riggs**

Martin H. Rosness Memorial Scholarship  
**Sarah Ziems**

Science, Math and Engineering Competition Award (2005/06)\* – **Kristen Barlish**

Ted Thal American Society for Quality – **Sarah Ziems**

Transfer Scholarship (2006/07) – **Aaron Peshlakai**

Jan Tuma Memorial Scholarship – **Andrew Brice**

Valley Paving Scholarship (Fall 2006)\*  
**Camille Smithson**

Wood/Patel Scholarship (2005-2007)\*  
**Elizabeth Nicol, Jared Geisler, Scott Andreasen, Shayne Lopez**

\*Awarded at the 2006 Celebration of Excellence



Distinguished Senior Award presented to Caroline Newcombe by Ed Kavazanjian





**Ida van Schalkwyk**, a doctoral student and faculty associate in the Department of Civil and Environmental Engineering, was selected by the **Eno Transportation Foundation** as one of 20 graduate students to participate in the foundation's **15th Annual Leadership Development Conference (LDC)** May 14-18 in Washington D.C. Van Schalkwyk conducts research

in transportation safety and teaches an introductory civil engineering course in the fall. Nominated by her faculty advisor, **Simon Washington**, she was selected to participate in the LDC from among 52 other applicants. The Eno Foundation, located in Washington D.C., is a non-profit charitable foundation, dedicated to improving all modes of transportation – ground, air, and water.



**Krishna Prapoorna Biligiri**, a PhD graduate research student with the CEE Transportation Group, received a scholarship from the **Transportation Research Board Committee on Transportation-Related Noise and Vibration** to participate in their summer meeting in San Luis Obispo, California July 22-25, 2007. Krishna presented a summary of a recent paper published

at the Asphalt Rubber 2006 International Conference on "Tire/Road Noise Relationship with Viscoelastic Properties of Asphalt Mixtures" with Professor Kamil Kaloush.

**Junbeum Kim**, a CEE environmental PhD student, was awarded a \$1000 Scholarship from **Environmental Professionals of Arizona (EPAZ)**. Junbeum has also been awarded the **Environmental Research and Education Foundation Scholarship**. He will receive \$1,000 per month effective September 2007 and ending August 2008.

**Trent Payne**, a senior undergraduate student in civil engineering, was awarded the **Structural Engineer's Association of Arizona (SEAOA)** scholarship for the Fall 2006 semester.

**Maria Carolina Rodezno**, a PhD graduate student with the CEE Transportation Group, has been invited to spend a period of three months in Fall 2007 at the **Delft University of Technology in the Netherlands**. She will join the Program of Mechanics of Structural Systems in the Department of Civil Engineering and Geosciences at Delft as a guest researcher on the topic of constitutive modeling and numerical analysis of asphalt pavements. Partial funding for this trip was provided by the Arizona Pavements/Materials Conference Group.



**Ming Xu**, a graduate research associate in civil engineering, has been elected to the position of **Chair for the Student Chapter of the International Society for Industrial Ecology (ISIE)** at the recent 2007 ISIE International Conference held in Toronto, Canada. The ISIE Student Chapter is an official extension of the ISIE.

The **ASU ASCE Student Chapter** sent over 35 students to this year's **Pacific Southwest Regional Conference (PSWRC)** held at UC San Diego in mid-April. The ASU group fought hard in the various competitions, had a lot of fun, and learned much about the trade-offs driving realistic engineering design. ASU-ASCE took home first place in the Impromptu Design Competition where a bridge was constructed out of only sand, paper and water. The design problem placed high importance on aesthetics and providing a maximum of span, clear height, width, and load carrying capacity with a minimum deck thickness. The ASU bridge stood at the top in the aesthetics category and structurally employed a six inch span with matching six inch clear height that easily supported the maximum load.

Student participation in the event was subsidized by a \$3,500 contribution from the Friends of Civil Engineering discretionary fund.

**CEE Undergrad helps Engineering team win Academic Bowl.** Four Ira A. Fulton School of Engineering students won the first-ever ASU Academic Bowl championship. **Karl Sturm**, a Civil Engineering undergrad, Andrew Holle and Amy Teegarden of Bioengineering, and Marko Manojlovic of Computer Science were awarded the President's Cup for their win, and each student received \$4,500 in scholarships.



# 2006-2007 CEE DEGREES AWARDED – CEE GRADUATED ALUMNI

## Doctor of Philosophy, Ph.D.

### Baiyang Chen

Dissertation: “Impact of Wastewater to Disinfection Byproduct Formation in Drinking Water”

### Wen Cheng

Dissertation: “Evaluation and Development of Methods for Identifying High-Risk Accident Locations”

### Natalia Perez Garcia

Dissertation: “Development of a Protocol for the Assessment of Unsaturated Soil Properties”

### Dae Koo

Dissertation: “Development of Sustainability Assessment Model for Underground Infrastructure”

### Yu Lee

Dissertation: “Simultaneous Activity Tour Interactive Time Use Pattern Analysis”

### Sudeshna Mitra

Dissertation: “Significance of Omitted Variable Bias in Transportation Safety Studies”

### Michael Naber

Dissertation: “Optimization of Soil Vapor Extraction using Simulated Annealing and Genetic Algorithms”

### Tania Paez-Rubio

Dissertation: “Quantification of Airborne Biological and Metals Contaminants Associated with Land”

### Channah Rock

Dissertation: “New Strategies for the Recovery and Detection of Microbial Pathogens and Indicators”

### Daniel Rothman

Dissertation: “Evaluation of Water Resources Sustainability Using a Multi-Objective Genetic Algorithm”

## NEW SUPPORT STAFF

CEE welcomed four new additions to our support staff team in the past year.

In September 2006, **Pamela Van Husen** joined our advising team as Student Services Coordinator Assistant.

In May 2007 we welcomed **Jhanaye Mansker** as Accounting specialist and **Jo Ann Boon-Shelton** as Administrative Assistant to our front office team.



In July 2007, **Maria Stanzione** joined CEE as Business Operations Manager with **Dawn Takeuchi** taking on a special duty assignment to manage the sponsored accounts for the department.

## Master of Science, MS

## Master of Science in Engineering, MSE

### Mark Belshe, MS

### Troy Benn, MS

### Chaya Dwarkanath, MS

### Nikole Fales, MS

### Brad Jeppson, MSE

### Ajatshatru Patni, MS

### Zach Stahlecker, MS

### Yin-Tung Tan, MSE

### Gordon Thelin, MSE

### Pramod Tipparaju, MS

### Dana Trompke, MSE

### Erika Wilder, MS

## CEE Undergraduate Alumni

### Summer 2006

Thomas Lassen  
Michael McBrady  
Damien Tonnelle  
Jason Burm

### Fall 2006

Christian Aguirre  
Riley Asburry  
Stephan Bach  
Larry Baldwin  
Jose Barba  
Alison Brooks  
Richard Brooks  
Bryce Burnham  
Maximo Cabellos  
Celeste Cayatineto  
Sterling Crandell  
Matthew Dasen  
William Downes  
Sean Dupuis  
Keith Faucett  
Colin Formichella  
Shawn Goddeyne  
Sarah Gurule  
Stephen Hargus  
Zack Heim  
Michael Huber  
David Klann  
Nicole Marshall  
Terrence McKeon  
Kenneth Nelson  
Trent Payne  
Benjamin Riddle  
Sergio Rivera  
Paul Sanders  
Kimberly Schulz  
Camille Smithson  
Ken Snow  
Michael Swicegood  
Anita Tang  
Robert Winsor  
Nicolas Zavala

### Spring 2007

Scott Andreasen  
Leslie Arriaga  
Daniel Auxier  
Taylor Bills  
Clint Bills  
Jared Brooks  
Ross Campbell  
Mario Castro  
Adam Davis  
David Drorbaugh  
Jared Dutton  
Omar Elizarraras  
Ann Evans  
Ashley Gifford  
Reid Guzy  
Joseph Hall  
Robert Halliday  
Landon Hardy  
Joseph Heller  
Adam Hensley  
Thomas Hurst  
Ahmed Hussein  
Konstantinos Kehagias  
Jessica Kendrick  
Clifton Koon  
Elton Lamce  
Patrick Lauer  
Carlos Lopez  
Claudia Lopez  
Sergio Luna  
Yvonne Martinez  
Nye McCarty  
Matthew Miles  
Mihai Morea  
Michael Morris  
Nicole Myers  
Kevin Naff  
Caroline Newcombe  
Aubrey Pedersen  
Daniel Raimer  
John Ritchie  
Marty Robbins  
Brandy Ruark  
Tomonobu Takahashi  
Derek Tannahill  
William Vilhauer

# 2007 Pavements/Materials Conference

## Arizona's Transportation Future – What's Down the Road?



A three-day conference on “Arizona's Transportation Future – What's Down the Road” sponsored by Arizona State University (ASU), Arizona Department of Transportation (ADOT), Arizona Industry and Local Governments will be held

October 1 – 3, 2007 on the ASU Tempe Campus, Memorial Union.

The conference will include nationally recognized speakers who will address the audience on National and Arizona perspectives of future transportation technology and how it affects our way of life. The conference will include sessions on asphalt and concrete pavements technology, recent innovations in pavement design and construction management, and updates on National NCHRP, Federal Highway Administration and ADOT pavement performance research. This year a transportation systems track has been added to serve the growing needs of Arizona's transportation systems community. Updates on the latest emerging construction technologies will also be included. Visit the conference website at [www.fulton.asu.edu/paving](http://www.fulton.asu.edu/paving) for more details.



CEE Advanced Pavement Lab in the ISTB2 building

## GRADUATE FELLOWSHIP AWARDS

Awards from \$1,000 to \$5,000 are made to encourage our outstanding and brightest graduate students in their educational and research related pursuits. The following students were recognized for their talents in Fall 2007.

**Liang Chen**, PhD, Environmental,  
Block Grant \$4,000

**Chao-An Chiu**, PhD,  
Environmental, Block Grant  
\$4,000

**Chi Chi Choi**, MS, Water  
Resources, Friends of Civil  
Engineering \$1,000, Block Grant  
\$2,000

**Cassandra Fowler**, PhD,  
Geotechnical, ARCS Scholarship

**Tingting Gao**, PhD,  
Environmental, Block Grant  
\$4,000

**Rajeev Jain**, MS, Structures, Block  
Grant \$4,000

**Jennifer Triplett Kingston**, PhD,  
Environmental, ARCS Scholarship

**Mehlika Kiser**, PhD,  
Environmental, ARCS Scholarship

**Andrew Marcus**, PhD,  
Environmental, Dean's  
Scholarship \$5,000

**Mihai Morea**, MS, Structures,  
Friends of Civil Engineering  
\$1,000, Block Grant \$4,000

**Zachary Pirtle**, MS,  
Environmental, Fulton  
Department Fellowship \$4,000

**Jordan Reed**, MS, Transportation,  
Fulton Department Fellowship  
\$5,000

**Maria Rodezno**, PhD,  
Transportation, Dean's  
Scholarship \$5,000

**Jie Sheng**, PhD, Environmental,  
Science Foundation Arizona  
Graduate Research Fellowship

**Yifei Wang**, PhD, Environmental,  
Block Grant \$4,000

**Yan Yang**, PhD, Environmental,  
Block Grant \$4,000

**Wen Zhang**, PhD, Environmental,  
Block Grant \$4,000

**Zuduo Zheng**, PhD,  
Transportation, Block Grant  
\$4,000

**Chao Zhou**, PhD, Environmental,  
Science Foundation Arizona  
Graduate Research Fellowship

**Chen Zhou**, PhD, Environmental,  
Block Grant \$4,000

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PHONE: (480) 965-3589

EDWARD KAVAZANJIAN, INTERIM CHAIR  
EDITOR: JUDY REEDY  
ART DIRECTOR: STUDIO 18  
PHOTOGRAPHY: KEN SWEAT

NON-PROFIT  
ORG.  
U.S. POSTAGE  
**PAID**  
ARIZONA STATE  
UNIVERSITY

## ASU CEE Team Evaluates First US Freeway Photo Enforcement Program



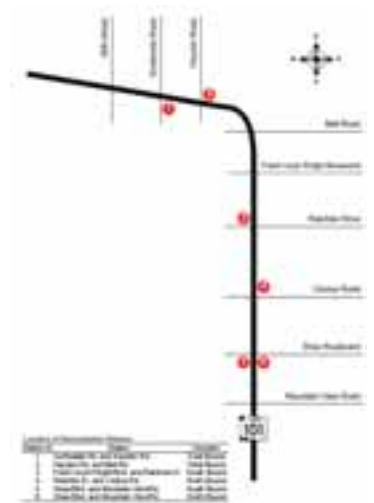
CEE Professor Simon Washington was hired by the City of Scottsdale and the Arizona Department of Transportation to facilitate and evaluate (respectively) the safety and operational impacts of the first automated speed enforcement demonstration

program (SEP) in the United States. The SEP, implemented on a 6.5 mile section of the Loop 101 Freeway in Scottsdale, Arizona (see figure) was operated between January 22nd and October 23rd, 2006. The ASU evaluation team also included CEE Ph.D. student Kangwon Shin and CEE Faculty Associate Ida van Schalkwyk.

The preliminary analysis of the SEP by the ASU team (see <http://www.scottsdaleaz.gov/photoradar/> for the full reports and presentations) was completed in the winter of 2007. The following are highlights of the evaluation results:

1. The percentage of speeders (vehicles exceeding 75mph) increased 850% after the program was suspended on October 23, 2006.
2. The SEP reduced the average speed of vehicles by almost 10 mph.
3. The number of rear-end crashes was increased by the SEP, while the numbers of single vehicle, same direction side-swipe, and other crashes were reduced. Most importantly, the total number of injury crashes was reduced; including injuries resulting from rear-end collisions.

4. Estimated benefits of the SEP include \$1.9M in disabling injury costs (negative benefit), \$1.9M in evident injury crash benefits, \$0.2M in possible injury crash benefits, \$5.8M in fatal crash benefits, and \$4.5M in property damage crash benefits. Total annual estimated benefits for the SEP are \$10.6 M.



Considering the results of the ASU evaluation, the Scottsdale City Council voted in January, 2007 to resume the SEP. The Council requested that Gov. Janet Napolitano allow the State of Arizona to assume operations of the Scottsdale program. The Governor endorsed a statewide program and acknowledged the need for significant time to develop such a program, and meanwhile asked the city to resume the Scottsdale SEP June 30, 2007.

The ASU team will complete the analysis and evaluation of the Scottsdale SEP in the fall of 2007. The final evaluation will rely on additional crash data, will include additional analysis of traffic operations, and will include general recommendations for possible future site identification.