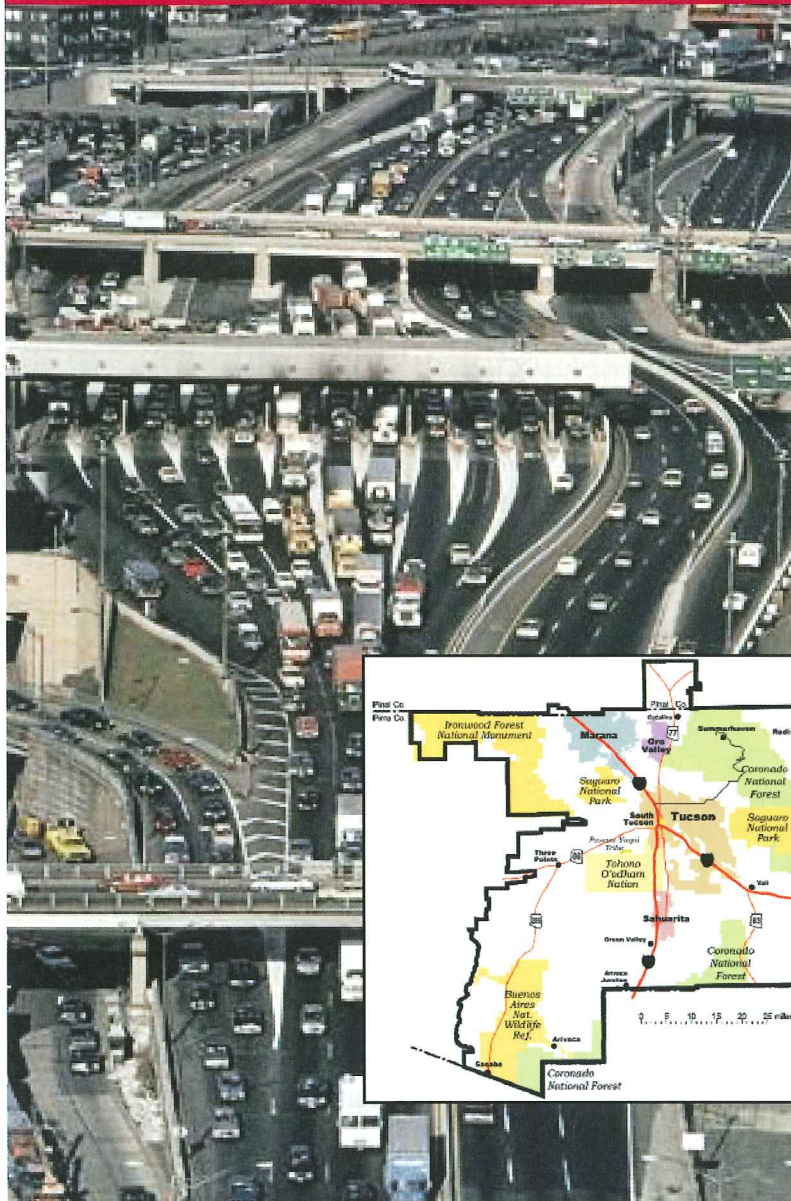


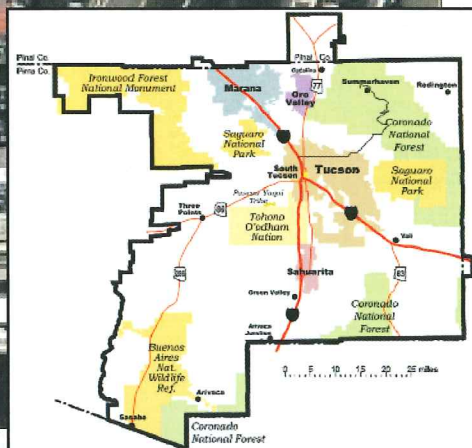
## Emergency Management for Traffic

### To toll or not to toll, that is the question



In the area of Intelligent Transportation Society (ITS), Dr. Chiu has led many advanced traffic analysis projects, focusing on traveler information, travel time prediction, route guidance, strategies for dynamic message signs, incident management, and large-scale traffic simulation. He is currently involved with the challenges and opportunities for developing a real-time emergency evacuation operation capability; for example, large scale evacuation of cities during times of man-made and natural disaster with no notice or short notice, and how traffic is effected using different routes. Dr. Chiu will be one of the speakers at ITS Arizona Chapter 13th Annual Conference on November 8th, 2006. The topic this year is, "Safe & Secure Mobility Through ITS."

**Transportation System Planning**  
**PAG Region Transportation Modeling Area**  
 Source: Pima Association of Governments



### What's Inside

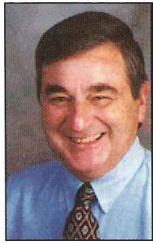
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## Centennial Celebration

*One Hundred Years of Building Our Foundation*

### Highlights from this year



By Juan B. Valdés, CEEM Head

**T**he Centennial Celebration continues! This year we are hosting an Open House in the CEEM Courtyard for Homecoming 2006. Join alumni, faculty and staff in celebrating Homecoming on Saturday, November 11, 2006, from 10:00 a.m. to 1:00 p.m. Please contact Sara Kersels, 520-621-6564 or [skersels@email.arizona.edu](mailto:skersels@email.arizona.edu), for more information and to RSVP.

In other news, this is the first semester that The University of Arizona is implementing Differential

Tuition. Differential Tuition is applied to advanced standing students (juniors and seniors) at a cost of \$300.00 extra per semester. The break-down of the use of the \$300.00 is as follows:

- 10% Provost
- 15% Financial Aid
- 10% College of Engineering
- 65% Department of CEEM

The Engineering Student Council has assembled a Differential Tuition Student Advisory Committee. Current undergrads from all departments are asked to recommend, based on student input, how fees are to be invested each year, in each department. Upgrades in

the works this semester are for the lab facilities (materials, soils, fluids).

Congratulations to alumni Michael J. Barton, P.E., PTOE, M.ASCE, who was one of two ASCE members elected governor of Region 8 and will represent the Arizona Society of Civil Engineers Section and the Alaska, Columbia, Hawaii, Inland Empire, Montana, Nevada, Oregon, Seattle, Southern Idaho, Tacoma-Olympia, and Utah sections.

## Centennial Celebration Schedule of Events

### Friday, November 10, 2006

8:00 a.m. 43rd Annual Engineers' Breakfast at Student Union (North Ballroom) Reservations required: Marcie Fritz @ 520-621-8051 or [mlfritz@email.arizona.edu](mailto:mlfritz@email.arizona.edu)

5:00 p.m. Marshall Foundation's Bear Down Friday at Marshall Square

7:00 p.m. Homecoming Kick-off Celebration at Alumni Plaza

### Saturday, November 11, 2006

10:00 a.m. Tents on the UA Mall  
(Look for the College of Engineering Tent!)

10:30 a.m. BBQ at Civil Engineering Courtyard

1:30 p.m. Homecoming Football Game at Arizona Stadium (UA v. Cal)

For more information about Homecoming 2006:  
<http://www.uagrad.org/Homecoming/index.htm>

The ARIZONA

## Civil View

Fall 2006

Vol. 14

The *Civil View* is written by The University of Arizona Civil Engineering and Engineering Mechanics Department to discuss research, student activities and other CEEM news. Its purpose is to foster communication between alumni, faculty, students, staff and friends of the department.

Editor/Writer: Sara Kersels

# New Faculty Profiles

*CEEM Welcomes two new faculty members to the department*

## Guohong (Jennifer) Duan

Before coming to The University of Arizona, Dr. Duan was an Associate Research Professor, Desert Research Institute (DRI) of Nevada Higher Education System.

She obtained her B.S. and M.S. in Hydraulic Engineering from Tsinghua University, P.R. China and her Ph.D. in Computational Hydrosience and Engineering from University of Mississippi.

Dr. Duan's research interests include Hydraulics, Sediment Transport and Fluvial Geomorphology. Her teaching interests are in Sediment Transport Engineering and Surface Water Hydrology. She will be teaching CE 218 Mechanics of Fluids in Spring 2007.



Dr. Duan's research experience and interests include experimental studies and computational simulation of turbulent flow, sediment transport, and channel morphological processes. She has developed an enhanced two-dimensional numerical

model to simulate the alluvial channel initiation, widening, and migration processes. Her recent projects have been focused on the application of her model to simulate hydrodynamics, sediment transport, bank erosion, and alluvial channel developing processes in the Upper Jordan River (UT), the Las Vegas Wash (NV), the Kankakee River (IL), the Upper Spanish Creek (CA), the Salt River (AZ), and the Rio Grande (NM). At the same time, she also engaged in the research for managing vegetation in open channels and the mechanics of sediment transport in mountain gravel-bed streams. She is also interested in water quality modeling and the interaction between surface and groundwater systems.

## Yi-Chang Chiu



Before coming to The University of Arizona, Dr. Chiu was Assistant Professor at University of Texas at El Paso from 2002 to 2005. Prior to 2002, he was a Research Engineer at the Center for Transportation Research at University of Texas at

Austin and part of the Senior Research Staff at Nortel Networks, Inc.

He obtained his B.S. from National Taiwan University, Taiwan and his M.S. from National Chiao-Tung University, Taiwan. He received his Ph.D. in Transportation Engineering from University of Texas at Austin.

Dr. Chiu's research interests include spatially scalable dynamic traffic assignment, mesoscopic traffic simulation, regional evacuation modeling and operations, freeway travel time prediction, and toll analysis/congestion pricing. His teaching interests include transportation system analysis, traffic network modeling and simulation, traffic engineering and modeling in transportation planning and opera-

tions. Dr. Chiu will be teaching CE 460/560 Special Topics in Transportation Engineering and CE 463/563 Traffic Flow and Capacity Analysis beginning in the Spring of 2007.

Some of the honors and awards that Dr. Chiu has received include:

Faculty Advisor – Best Senior Design Award, University of Texas at El Paso: 2003, 2004, 2005

Faculty Advisor – International Engineering Design Award, UNESCO-Mondialogo: 2005

Robert Herman Outstanding Doctoral Student Award – University of Texas at El Paso 2001

## Sandeep Mahajan

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Sandeep Mahajan is native of India who came to The University of Arizona in August 2002 after obtaining his Bachelor's Degree in Civil Engineering (1998) and his Master's Degree (2002). His research for his doctoral studies was in geotechnical engineering, specifically, "Viscous effects on Penetrating Shafts in Clays." This research focused on application of hydrodynamics principles to soils at critical state to estimate viscous resistance (drag) on shaft such as cone penetrometer or jacked piles during continuous penetration.

Sandeep finished his dissertation and graduated with Ph.D degree in Civil Engineering from the University of Arizona in August 2006.

Currently, Sandeep works with Geocomp Corporation, Boxborough, MA as a project manager. Geocomp's teams of engineers and scientists are involved in solving some of the world's most challenging geo-engineering problems in a wide-range of public and private work projects. Geocomp has been at the center of some of the most challenging projects around the world.

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### Centennial Merchandise Still Available!

The CEEM Department has a new "Civil" Pride Program; the last Friday of every month, we display our pride and wear our CEEM gear! Please join us, whether you are on campus or not, and wear your "Civil" Pride.

Centennial Donations are still being accepted! For more information, please contact Therese Lane (520-621-6563 or [theresel@email.arizona.edu](mailto:theresel@email.arizona.edu))

## Show Your "Civil" Pride

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*We still have Polo Shirts, Hats and T-Shirts available*  
**\$35, \$25, and \$15**

*Also available: "One Hundred Years of Civil Engineering at The University of Arizona" (CD & DVD included)*  
**\$20**

#### *For More Information, Please Contact:*

Therese Lane, *Business Manager, Sr.* 520-621-6563  
[theresel@email.arizona.edu](mailto:theresel@email.arizona.edu)

Karen Van Winkle, *Admin. Assistant* 520-621-2266  
[vanwinkk@email.arizona.edu](mailto:vanwinkk@email.arizona.edu)

Sara Kersels, *Admin. Assistant* 520-621-6564  
[skersels@email.arizona.edu](mailto:skersels@email.arizona.edu)

# Ernest Smerdon Receives Award for Outstanding Contributions to Engineering Education

By Ed Stiles

Professor Emeritus Ernest T. Smerdon, former dean of UA Engineering, has been named one of three Vector De Oro (Golden Vector) award winners for his work in advancing engineering education. The award was presented on Sept. 21 by the Union of Pan American Engineering Societies (UPADI) at the group's meeting in Atlanta, Ga.

The award has been presented on alternate years since 1990 and recognizes the contributions of engineers to teaching and research that leads to improvements in engineer-

ing education. Especially considered in the selection are contributions to engineering educational institutions and to societies that promote improvements in engineering education on the American continent.

To date, 23 UPADI members have received the Golden Vector Award. Smerdon is the fifth U.S. citizen to receive the award.

The other 2006 Golden Vector award winners are Miguelo Angel Yadarola, of Argentina, and David Reyes Guerra, of El Salvador.



Ernest T. Smerdon gives his acceptance speech at the 2006 Golden Vector Awards ceremony.

## Glendening Scholarship Luncheon

Anastasia Glendening established the Fred and Anastasia Glendening scholarship in Civil Engineering to honor her late husband, Fred Glendening (CE '31).

Fred Glendening worked with the Public Works Department in the city of Phoenix for 16 years, serving at various times as Public Works Department director, deputy city manager, and executive assistant to the city manager.

He displayed outstanding leadership by using rubberized asphalt on streets, developing the first decentralized service centers, and implementing automated solid waste collection, making Phoenix the first major city in the United States to have such a waste collection system.

The city of Phoenix recently recognized his contributions by naming its newly built employee assembly building the Fred Glendening Campus Center. In 1966 the American Public



Pictured from left: Dr. Juan Valdés, Nathan Hartke, Anastasia Glendening, Dr. Tom Peterson, James McKay (Mac) Gifford.

Works Association named him among the Top 10 Public Works Leaders of the Year.

The scholarship is awarded to undergraduates who are in their junior

or senior year. This year's recipients are James McKay (Mac) Gifford and Nathan Hartke, both currently seniors in Civil Engineering.

## Engineers Without Borders

### CLUB OVERVIEW

**E**ngineers Without Borders (EWB) is an organization for individuals who are interested in making a difference in the world by utilizing their knowledge for the benefit of developing communities. Founded in 2001, EWB is an internationally and nationally recognized nonprofit organization that operates by having professional and student chapters partner with developing communities to implement environmentally, socially and economically sustainable engineering projects.

Since its establishment, The University of Arizona chapter of Engineers Without Borders (EWB-UA) has garnered the attention of students, faculty and professionals from the Tucson area. Our growing membership is proof that there is interest in assisting the developing world with simple and sustainable engineering solutions. After official recognition in February 2005, the EWB-UA chapter was quickly awarded a project in the West African nation of Ghana. The three-year project began when a local community wanted to develop a community-owned and operated water filtration system but required engineering expertise to overcome some major obstacles. Once completed, filtered water will be delivered to more than 10,000 people in 30 villages. In this project, as is common, non-governmental organizations (NGOs) and local and regional government provide building materials while the community supplies the labor. EWB-UA participants provide the technical design and guidance for construction and maintenance.

The EWB model is to provide in-kind technical assistance to partner communities in developing countries. However, expenses associated with travel, equipment and analyses remain the responsibility of the individual EWB chapter. In addition, the student

chapter relies greatly on the knowledge and expertise of its professional mentors, who donate their time to work alongside the students on all aspects of the project. As you can imagine, the resources required to complete one of these important projects are significant for a student organization. Apart from project activities, our chapter's activities also include monthly meetings with speakers from NGOs or local firms discussing topics ranging from sustainable development to project management.

EWB-UA also works with the EWB parent organization and other NGOs to find and develop worthwhile projects.

### CURRENT ACTIVITIES

This an important year for EWB-UA. Because we are such a young club (chartered in February 2005), we have a lot of organizational/administrative capacity building to accomplish.

Chapter goals include developing a functional website that will ease in administering the club, allow supporters to make donations online and serve as data storage for the many project-related data files.

We also hope to grow our Professional Mentor Network to expand our network of professionals that can help with project-related work and position the club to apply for and receive another project.

As far the Ghana project goes, EWB-UA recently completed its second site assessment trip in August 2006. The previous assessment trip was in January 2006. During this visit we conducted extensive surveying of the catchments and project area, provided instruction on the proper installation of buried pipes, addressed seepage in some of the concrete holding tanks, monitored water quality, sited the location for an additional

pretreatment process and evaluated the damage done to the earthen dam when the former spillway was washed out during the rainy season. EWB-UA is currently in the design process to develop solutions to these and other concerns.

Individuals or organizations interested in supporting the project can find additional information by visiting the club's website at [www.ewb.engr.arizona.edu](http://www.ewb.engr.arizona.edu).

For additional information:

David Newman  
*EWB-UA President*  
520-299-8888  
[drnewman@email.arizona.edu](mailto:drnewman@email.arizona.edu)

## UA Civil Engineering Honor Society

**T**he UA CE Honor Society is trying to become a national chapter of Chi Epsilon in the beginning of 2007. It is being led this year by co-presidents Nicholas Wierschem and Marlene Yafuso, with Dr. Robert Fleischman as the advisor. There are roughly 20 inducted members.

This year the group is planning two different events; a Young Alumni Night and a social. There will also be two ongoing activities: tutoring for students who are enrolled in CE 214, 215 and 218, along with providing analysis assistance for the SCE bridge and seismic design.

By Marlene Yafuso, *Co-President*

# The University of Arizona Association of Society of Civil Engineers:



Above: The University of Arizona Association of Society of Civil Engineers.

Below: SCE members putting the bridge together for competition.

## Upcoming events:

**A**nnual Civil Engineering Career Night – October 18, 2006 from 6:00 p.m. to 8:30 p.m. Career Night is an excellent chance for companies to build a relationship with the students in the Civil Engineering Department.

Habitat for Humanity is a new project for ASCE this year and we are really excited about participating. We are still involved with the Adopt-a-Highway program (our section is on

State Route 77 from mile post 87 to mile post 88).

Our meetings are every 1st and 3rd Wednesday at 12:00 p.m. in CE 201. If you find yourself on campus during one of our meeting times, please stop by and join us!

By Sam Credio,  
President, SCE  
[scredio@email.arizona.edu](mailto:scredio@email.arizona.edu)



## UA Institute of Transportation Engineers

**T**he UA Institute of Transportation Engineers looks forward to continuing the group's legacy with a promising semester and academic year. UAITE looks to be interactive with members this year through raffles and a tee-shirt design contest. There will be guest speakers to present about current developments of the RTA Plan, as well as discussions

about the I-10 Widening Project, the extension of Aviation Parkway to I-10, and other transportation developments. The group is also planning a trip spring semester to the Phoenix Traffic Control Center. It promises to be a fun and enlightening year for the club.

By Greg Orsini, President

## Attention Alumni

*We would love to have framed pictures of your projects since you have graduated, so we can add them to the walls of our CEEM building to inspire current students. If you would like to contribute, please include a brief description of where and what the project is and how you contributed. For more information, please contact: Therese Lane, Business Manager, Sr. (520) 621-6563 or [theresel@email.arizona.edu](mailto:theresel@email.arizona.edu)*

# Civil Engineering Seminar Series

## "Innovative and Modern Civil Engineering Techniques and Applications"

Seminars are held Friday's from 1-2 pm (no seminar on Nov. 24)

For more information, see the UA CEEM website (<http://web.arizona.edu/~civil/>)

Date	Speaker	Title/Topic
September 8	M. Cho (NOAO/UA)	Structural analysis of large telescopes
September 15	J. Kemeny (UA Dept. of MGE)	Image processing in geotechnical engineering
September 22	A. Vafai (Sharif Univ. of Tech)	The future and challenges of technology for the prosperity and well-being of the world
September 29	J. Gervasio (Gervasio Engr.)	Forensic civil and structural engineering
October 6	L. Head (UA Dept. of SIE)	Traffic signal control in an intelligent vehicle environment
October 13	D. Myers (UA Dept. of Math.)	Geostatistics: Overview and CE applications
October 20	J. Zarka (Ecole Polytechnique)	Intelligent optimal design of materials and structures
October 27	S. Missoum (UA Dept. of AME)	Structural system optimization under uncertainty
November 3	L. Bastidas (UT State Univ.)	Using remote sensing in surface water hydrologic modeling
November 10	Y. Chiu (UA Dept. of CEEM)	Large-Scale emergency evacuation modeling and application
November 17	N. Samtani (NRS Engr.)	Geotechnical remediation for highway crossing an earth fissure
December 1	J. Restrepo (UC-San Diego)	A large scale shaker table experiment

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### Write to Us!

If you have an interesting event that you want to share with former classmates and friends, please send a letter with an update on your activities to:

Juan Valdés, Professor & Head  
The University of Arizona  
P.O. Box 210072  
Tucson, AZ 85721-0072  
Or e-mail: [jvaldes@u.arizona.edu](mailto:jvaldes@u.arizona.edu)

Please include your name, degree (BS, MS, PhD), year of graduation, address, home and/or business phone number, e-mail, and your current employment information. Thanks!

The University of Arizona

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