



# SWES SOUNDS



The Heartbeat of the Department of Soil, Water & Environmental Science

May 2008

Vol. 27,

Issue 4

Shantz Bldg. 38, Rm. 429

<http://ag.arizona.edu/SWES/>

Tucson, AZ 85721

## TONES FROM THE TOOTH

We are approaching a very important and critical crossroads for this department, our college, and university. We have a need to better connect with the general public and to be able to communicate (effectively) the relevance of our work and programs. The directions we move in the next several years will have a strong impact on our ability to maintain strong, productive, and sustainable programs.



Public support for higher education, particularly public institutions, has waned in the past 30 years. In an effort to compensate and grow most universities (and departments) like ours have sought external sources of support (i.e. grants). For example, in 2006 ~ 40% of the CALS Experiment Station budget was derived from State and Federal sources. The remaining 60% came from sponsored projects of various types.

This is unique to the University of Arizona, in fact it is generally true for many public universities across the country. The danger is that we could drift away from the public base that we are fundamentally here to serve in the effort to better secure external support. In my view we have to avoid that dangerous path and become more assertive and effective in demonstrating our relevance to the public.

Traditionally, departments like SWES have counted on Extension programs and resident instruction to provide the forums and linkages to the general public that maintain and demonstrate our relevance. These programs continue to be an important aspect of our work and connection to the general public. But I believe that in addition non-Extension programs have to make more of a concerted effort to communicate what we do, why we are here, and the value we provide to the society around us. In other words, it is the collective responsibility of everyone on the faculty and staff in every department – including and most importantly the SWES Department to develop better communication to the general public.

**Jeffrey C. Silvertooth**  
Department Head

## FEATURED Faculty

**Dr. Shirley Kurc**  
Assistant Professor, School of Natural Resources (Joint Appt. SWES)



A hydrologist by training, I look at the fluid dynamics of air at the near land surface, within water-limited ecosystems, and consequently, the feedbacks between the land surface (including the vadose zone) and the atmosphere. The main objective of my research program is to characterize key aspects of vegetation that govern water, energy, and carbon cycling in water-limited ecosystems (and vice versa). Understanding these cycles is critical to the sustainability of our native ecosystems as we anticipate gradual and abrupt climatic and anthropogenic change. This understanding is fundamental as changes in our native ecosystems will undoubtedly affect the health of our watersheds. I specialize in tools including eddy covariance and Bowen ratio techniques and MATLAB®.

My teaching portfolio includes the Fall Semester Course *Air and Water: An Introduction to Environmental Fluids and their Movement* [WS M 402/502] in which undergraduate and graduate students are exposed to properties and physics of life's media and the significant role this plays in environmental science and natural resource management. Much of the learning in this class is provided through in-class demonstrations and active class participation. In alternating springs, I also offer a graduate seminar *Practical and Applied Hydrometeorology* [WS M 696Q / HWR 696Q] driven by the initiative and interest of the course members, on the basis of group decisions. This is a group-project-centered-class which makes use of eddy covariance and other micrometeorological techniques. Our project this year is using flux measurements to determine sprinkler irrigation efficiency at Biosphere 2.

## SWES REPORT CARD:

### GRANTS:

**Brusseau, M.L. (PI)** The impact of DNAPL Source-Zone Architecture on Contaminant Mass Flux and Plume Evolution in Heterogeneous Porous Media. DOD SERDP \$854,000.

### PUBLICATIONS:

**Brusseau, M.L., Di Filippo, E.L., Marble, J.C., Oostrom, M.,** 2008, Mass-removal and mass flux-reduction behavior for idealized source zones with hydraulically poorly-accessible immiscible liquid. *Chemosphere*, 71:1511-1521.

**Gerba, C. P.** and Scott C.A. 2008. Animal and human waste as vehicles for cross-contamination of imported foods. In: *Imported Foods Issues and Challenges*. P. Doyle and M. C. Erickson (eds). ASM Press. Washington, DC. pp. 111-138.

**Grandlic, C.J., M.O. Mendez, J. Chorover, B. Machado,** and **R.M. Maier.** 2008. Identification of plant growth-promoting bacteria suitable for phytostabilization of mine tailings. *Environ. Sci. Technol.*, 42:2079–2084.

**Mendez, M.O.** and **R.M. Maier.** 2008. Phytostabilization of mine tailings in arid and semiarid environments – an emerging remediation technology. *Environ. Health Perspec.* 116:278-283.

### PATENT LICENSE:

**Stone, D.A.** Iron carbonate cement. The UA Office of Technology Transfer has licensed this patent to Jim Heim, a local businessman who is forming a company called Renascent Materials that will develop products made of the iron cement, which utilizes industrial wastes like fly ash and sequesters carbon dioxide during the curing process.

### PRESENTATIONS:

**Gerba, C. P.** Reinventing hygiene for the 21<sup>st</sup> century. Seminars in Emerging Science. Florida Panhandle Area Educational Consortium. Educational update for Science Teachers. Pensacola, FL, Jan.11.

**Gerba, C. P.** The Dirt on Germs: What Every Mom Should Know. Camp Baby, Tips and Tricks for Today's Modern Mom, New Brunswick, NJ April 3.

**Rock, C.** Microbial Water Quality and Source Tracking. Safford, AZ, April 9.

**Rock, C.** Water Quality and Monitoring Globe, AZ March 25.

**Dr. Jeffery Silvertooth** was moderator for the Life and Environmental Science session at the SW Ag Summit Student Program in Yuma, AZ, March 13.

The following were presented at the Joint U.S. EPA and Dept. Homeland Security Conference on Real-World Applications and Solutions for Microbial Risk Assessment, Bethesda, MD, April 9:

**Sinclair, R.** Factors Effecting Persistence of Microbes on Fomites. (talk)

**Sinclair, R , Gerba C. P.,** Rose J. B. , Keim P. F and Greenberg D. Criteria for the selection of surrogates for studying the fate and transport of pathogens in the environment. (poster)

**Sinclair R. , Song I. , Romero-Gomez P. , Choi C. and C. Gerba C.P.** Dispersion of MS2, *Escherichia coli* and spores in water distribution systems. (poster)

### WORKSHOPS:

**Dr. Channah Rock** organized and hosted the a Reclaimed Water Workshop entitled “Purple Pipes: Promises and Precautions for Water Reuse” at the Maricopa Agricultural Center on April 16. The workshop was sponsored by UA Water Sustainability Program, The Education and Outreach Committee and Global Water.

**Gerba, C. P., J.E. Naranjo** and **L. Sifuentes** were instructors for “Pathogens in the Environment” taught at the University of Panama Feb. 18-29, 2008. The course was funded by the Panama National Secretariat for Science and Technology.

### DEPARTMENT NEWS:

Congratulations to **Dr. Qinhong Hu**, a former Ph.D. student of **Mark Brusseau's**, has accepted a faculty position at the University of Texas, Arlington.

**Kelley Riley** has transferred her position as Research Specialist, Senior to Maricopa Agricultural Center. Kelley will be setting up **Dr. Channah Rock's** laboratory and helping to establish her research and extension program at MAC.

### PLANE TALK FROM

#### ERL

*Ian Pepper*

In order to accommodate the needs of several new faculty working at ERL we have made some changes in the ERL administrative building. Specifically, we gutted the office next to the reception room and have created a new computer room for students. We have also renovated another centrally located room and converted it into a conference room. Finally we are working on the original conference room at ERL making it more acceptable for formal education programs within a classroom setting. We hope you will visit these new rooms and the new renovations of the Water Village when you come out for the department retreat next month.



## BUSINESS OFFICE

Eddie Camacho

Many Individual Purchasing Cards (PCards) will be expiring June 30<sup>th</sup>, 2008. New PCards will be sent out containing the same 16-digit credit card number, but with a new expiration date.



To ensure a trouble-free re-issuance please take the following steps:

- Please advise staff to check their Individual PCards to see when the cards are expiring.
- During the month of the cards expiration date, look for a plain white envelope to arrive that is sent directly to the cardholder via U.S. Mail.

Once the new PCard is received, the cardholder needs to call the number listed on the sticker to activate the card. This automated line will prompt for; the credit card number, Social Security Number (Enter your EID number NOT your social security number), and mother's maiden name (This would be the password chosen when account was established).

For assistance with your activation password you can:

- Contact your departmental liaison for this information
- Or
- Email your name, phone number and department number to [mdecruz@email.arizona.edu](mailto:mdecruz@email.arizona.edu) and you will be contacted via phone by Monica Cruz from the PCard Office

Also, please remember that **all PCard paperwork** is to be given to **Lisa Spurlin**.

## EXPERIENCE IN THE FIELD



Students from Dr. Silvertooth's SWES401/501 class recently took a field trip to Yuma, AZ and Mexicali, Baja California, Mexico. They examined soil profiles from many sites in the lower Colorado River area, two area dams (Imperial and Morelos) and four irrigation and drainage districts, toured a tomato greenhouse (shadehouse) system and were treated to outstanding hospitality including a Mexican cookout.

## FOOD FOR THOUGHT

I do not know what I may appear to the world; but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding of a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me.

*Sir Isaac Newton (1642-1727)*

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<h1>May 2008</h1> 						
				1	2 <b>ETRs Due at Noon TODAY</b>	3
4	5 <b>Seminar Justin Berkompas Travis Nauman MS Students 3:00 Marley 230</b>	6	7	8	9  <b>Finals Begin</b>	10
11 <b>Mother's Day</b>	12	13	14  <b>Motorcycle Rider's Day</b>	15	16 <b>ETRs Due at Noon TODAY</b> <b>Finals End</b>	17  <b>Commencement</b>
18	19 <b>Presession Classes Begin</b>	20 <b>Faculty Meeting 11:00-12:00 FCS 219</b>	21	22	23 	24
25	26  <b>Memorial Day No classes</b>	27	28	29	30	31

NEWSLETTER TEAM: **Raina Maier, Ph.D.**  
Editor

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