



SWES SOUNDS

THE UNIVERSITY OF
ARIZONA
COLLEGE OF AGRICULTURE
AND LIFE SCIENCES

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

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Tucson, AZ 85721

TONES FROM THE TOOTH



We have had many interesting discussions in the Soil, Water and Environmental Science (SWES) Department regarding the appropriate role and position for this department in the realm of environmental (and earth) sciences. We have recognized that one very good way of describing the general area of operation for the SWES Department is in terms of the “critical zone”.

The critical zone is the “heterogeneous, near surface environment in which complex interactions involving rock, soil, water, air, and living organisms regulate the natural habitat and determine the availability of life-sustaining resources” (NRC, 2001). The critical zone includes the land surface, vegetation, and water bodies, and extends through the pedosphere, unsaturated vadose zone, and saturated groundwater zone. The critical zone is the most heterogeneous portion of the Earth. An array of important physical, chemical, and biological interfacial processes and reactions occur in the critical zone over a range of spatial and temporal scales. These processes impact mass and energy exchange necessary for biomass productivity, chemical recycling, and water storage. They also control transport and cycling of contaminants including organics, metals, and radionuclides (NSF, 2006).

In the dialog around us in the international and national communities, and also at the University of Arizona it is important for us as a department to articulate our place in the realm of earth and environmental sciences. Also, each scientist in the SWES Department and the broad programmatic area that we cover can then further define their own program in this arena of environmental science.

Jeffrey C. Silvertooth
Department Head

National Research Council Committee on Basic Research
Opportunities in the Earth Sciences, (2001) Basic Research
Opportunities in the Earth Sciences, Washington, DC:
National Academies Press.

Brantley, S.L., White, T.S., White, A.F., Sparks, D., Richter, D., Pregitzer, K., Derry, L., Chorover, J., Chadwick, O. Anderson,

S., Amundson, R., 2006, *Frontiers in Exploration of the Critical Zone: Report of a workshop sponsored by the National Science Foundation, October 24-26, 2005, Newark, DE, 30p.*

SWES REPORT CARD:

AWARDS:

Payal Sarker (Gerba) received the first place 2007 research award from the Central Arizona Project for her work on “Occurrence and control of *Naegleria fowleri* in groundwater in Arizona”. She will receive the \$1,000 award at the annual meeting of the Arizona Hydrological Society in September.

CONGRATS TO OUR GRADUATES:

This section was removed for web publication.

GRANTS:

Jon Chorover is PI with several collaborators in CALS, CoS, CoE and CoP on a National Science Foundation Major Research Instrumentation grant entitled “Acquisition of tandem mass spectrometry instrumentation for integrated studies of emerging contaminants in water”. The \$540,000 funding provided by NSF, in addition to a substantial UA match provides the foundation for developing a multi-user research facility dedicated to state-of-the-art chemical methods of micro-pollutant analysis of water and other environmental media. The laboratory is closely allied with, and supported by, the UA Superfund Basic Research Program and the TRIF Water Sustainability Program.

Pemberton, J.E., **R.M. Maier**, R.L. Polt, M-T. Velez from University of Arizona and J.C. Ingram from Northern Arizona University were awarded an NSF Collaborative Research in Chemistry grant “Fundamental Surface and

Interfacial Chemistry of Microbially-Produced Biosurfactants". The grant is for \$3,323,076 over a 5 year period.

PUBLICATIONS:

Brooks, J. P., P. A. Rusin, S. L. Maxwell, C. Rensing, C. P. Gerba and I. L. Pepper. 2007. Occurrence of antibiotic resistant bacteria and endotoxin associated with land application of biosolids. *Can. J. Microbiol.* 53: 1-7.

Reynolds, K. A., K. D. Mena and C. P. Gerba 2007. Risk of water borne disease in the United States. *Rev. Environ. Toxicol. Contamin.* 192: 117-158.

Gerba, C. P. and D. Kennedy. 2007. Enteric virus survival during household laundering and impact of disinfection with sodium hypochlorite. *Appl. Environ. Microbiol.* 73:4425-4428.

PRESENTATIONS:

C. P. Gerba presented four invited talks at the Annual Meeting of the International Society for Food Protection in Orlando, FL. July 8-11, 2007.

“Principles of environmental sampling of water: challenges and opportunities”

“Impact of water shortages on irrigation water”

“Microbial testing in the production

environment – What are the limitations and data gaps?”

“Are you washing your hands with germs?”

C.P. Gerba gave a talk to the Clorox Corp. Public Health Science Advisory Board on “Application of HACCP to Institutional Hygiene” in Sonoma, CA. June 30, 2007.

R.M. Maier presented “Phytostabilization of mine tailings in arid and semi-arid environments” as an EPA Technology Innovation Internet Seminar July 25.

Sherri Maxwell presented the poster “Bacterial contamination of liquid hand soaps in public restrooms” at the annual meeting of the National Environmental Health Association in Atlantic City, N.J. June 19, 2007.

WORKSHOPS:

Janick Artiola and **C. P. Gerba** organized and presented a workshop on “Best Management Practices of Generated Biosolids” in Amman, Jordan under the sponsorship of the U.S. Agency for International Development. July 30-August 1, 2007.

PLANE TALK FROM ERL

Ian Pepper, Director

The University of Arizona



You may or may not know that ERL is located on airport property which is leased to the University. I’m happy to report that we have renegotiated the ERL airport lease which will solidify the future of ERL. Specifically we have a new 10 year lease that will initiate on September 1, 2007. Thus ERL has a guaranteed home through August 31, 2017. However, Bonnie Allin, President/CEO of Tucson Airport Authority has informed me that the airport will ultimately need the land where ERL resides, for airport business. Therefore the new 10 year lease will be the last one. Being proactive, we are already thinking about a future home for ERL. To this end, Jeff Silvertooth and I have formulated a draft of a plan wherein ERL activities will be part of a major new initiative at a new location. This new plan is currently being discussed at multiple administrative levels. More to come.....

DEPARTMENT NEWS

Please also join us in welcoming our new Administrative Associate, **Kristie Gallardo**, to the Department Office. Kristi is working as Dr. Silvertooth’s administrative assistant. She has been at the University for 14 years and comes to us from the College of Law.

BUSINESS OFFICE

Eddie Camacho



New Travel Policy

Effective September 1, 2007, the University will no longer be able to reimburse employees traveling on university business for meals without an overnight stay.

Please make sure to turn in P-card forms and original receipts for all p-card purchases.

We also need original receipts for all travel and check request reimbursements.



OPPORTUNITY

Kathy Jacobs

The Arizona Water Institute (AWI), in cooperation with SWES and the Department of Hydrology, is sponsoring a

new soft money position in water-related informatics. The main assignment for this person is to direct and coordinate the development of the UA component of the Arizona Hydrologic Information System (AHIS), which is the cyber-backbone of AWI across the three universities and multiple state and federal agencies.

The position is currently posted on the UA Human Resources website <http://www.azwaterinstitute.org/media/Informatics%20job%20position/pdf>, and is open until filled. It will be funded based on commitments from various sources, including a Science Foundation Arizona funded proposal (through Travis Huxman), TRIF funding (through Jonathan Overpeck and SAHRA) and the Arizona Water Institute (AWI). The position is a year-to-year Research Assistant Professor, with an expectation of adjunct status in either SWES or Hydrology. It is also expected that the successful candidate will pay their own salary through grant writing after two years. The selection of a home department will depend on the qualifications and background of the individual that is hired, and the decisions of the faculty(s) of those departments.

The informatics position is expected to be interdisciplinary, and serve the informatics needs of the campus generally, but with a specific focus on hydrological and ecological informatics and building the AHIS water information system for the state. The School of Natural Resources is also hiring an informatics person, and we are hopeful that these two positions will coordinate their efforts to some degree.

The joint search is being facilitated by Jeff Silvertooth with representation from SAHRA, Arid Lands, Hydrology, ISPE and the Arizona Water Institute. The position will be physically housed at SAHRA, and will be responsible for managing the UA component of the AHIS, as well as coordinating the integration of the AHIS system with the ASU and NAU AHIS components. The informatics/cyberinfrastructure requirements of AHIS.

If you know of anyone who might be interested, please spread the word!

MAKE A DIFFERENCE

Many of you know Eileen Finnerty-Rae as a PhD candidate. What you may not know is that she is very dedicated to raising money for the Children's Tumor Foundation (CTF). CTF is an organization that funds research for neurofibromatosis (NF). This is a genetic disorder that is present in 1 of every 3,000 births. It is the most common of any genetic or hereditary disorder and currently affects 100,000 people in the United States alone. Half of the cases are hereditary, the other 50 percent are the result of

spontaneous mutation. Eileen chose this foundation because she lost her father to a brain tumor. After she started raising money for CTF, her niece was diagnosed with a tumor.

Because this is such an important cause to Eileen, she wants everyone to know about some fundraising opportunities that are coming up in the Tucson area.

On Thursday, **September 6th** there will be an event at Cold Stone Creamery on Speedway and Campbell. A percentage of sales from everyone who goes in on that date between 5:30 and 8:30pm will go to CTF. The cashier will need to be notified that you are there for the Children's Tumor Foundation fund raiser.

Eileen is selling raffle tickets for \$4 each or 3 for \$10 to benefit CTF. The prizes total over \$1,200 – all of which were donated. All monies raised from ticket sales will go to CTF. The grand prize is golf for four at La Paloma plus breakfast for four at the Good Egg and a \$25 gift certificate for Auld Dubliner for after the game. Other prizes include gift certificates for local restaurants on University, the Loft, and massage and spa gift certificates. Anyone interested should contact Eileen directly via email (ecf@email.arizona.edu) or stop by Shantz Building room 416.

There will be a benefit concert for CTF on Saturday, **September 15** at Old Town Artisans, 201 N. Court, starting at 7:30 pm. Tickets are available in advance at Antigone Books and Zia Records for \$8 (or see Eileen). Tickets at the door are \$10. Kids under 12 are \$3. The bands include Naim Amor and Tom Walbank and the Ambassador.

Finally, if you are unable to participate in any of the giving opportunities mentioned here, you can go directly to her website, www.active.com/donate/nfrunslongbeach/EFinnerty, and make a donation there. You will also find out more of Eileen's story there.

FOOD FOR THOUGHT

Some dirty humor – I can hear the groans already. – RMM

Q: Why did the chicken cross the road, roll in the dirt and cross the road again?

A: Because it was a dirty double crosser

Q: What's the difference between soil and dirt?

A: Location, Location. Location

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<h1>September 2007</h1>						1
2 	3 Labor Day Holiday No Classes	4	5	6	7 ETRs Due at Noon TODAY	8
9	10 Seminar Kathleen Lohse 3:00 Marley 230	11	12	13	14 	15
16	17 Seminar Scott Saleska 3:00 Marley 230	18 Faculty Meeting 11:00 FCS 219	19	20	21 ETRs Due at Noon TODAY	22
23	24	25	26	27	28 	29
30						

NEWSLETTER TEAM: [Raina Maier, Ph.D.](#)

[Lisa Spurlin](#)

[Karen Josephson](#)

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Department of Soil, Water, & Environmental Science