

Ephemeral Flow

A NEWSLETTER ABOUT SAHRA

September/October 2006

Welcome to the September/October issue of Ephemeral Flow, a newsletter for sharing information within the SAHRA community. Ephemeral Flow is sent to SAHRA researchers, staff, and students at all participating institutions approximately every two months. Your contributions and suggestions are always welcome. Please send items to Mary Black at mblack@sahra.arizona.edu.

FEATURES

CuPIDO No Es Estupido

UA research specialist **Jonathan Petti** spent a busy summer and active monsoon season collaborating with the Cumulus

oversaw the construction of the latter in 2002 and currently maintains it, seeing it safely through two consecutive years of threatening wildfires and other extreme weather events.



Photo courtesy of CuPIDO.

Photogrammetric In-Situ and Doppler Observations (CuPIDO) project led by ASU meteorologist Joe Zehnder. The project uses the Santa Catalina Mountains north of Tucson as a natural cloud laboratory to examine thunderstorms formation to improve the predictability of convective storms. The project generated data from five digital cameras stationed around the Catalinas, including one on the 5th floor of the Marshall Building at UA (where SAHRA is headquartered), as well as 10 surface weather stations at the base of the mountains and SAHRA's 30-meter Mt. Bigelow tower. Petti

oversaw the construction of the latter in 2002 and currently maintains it, seeing it safely through two consecutive years of threatening wildfires and other extreme weather events. CuPIDO measurements included surface energy balance, moisture transport, and meteorological conditions, supplemented by research aircraft cloud fly-throughs on promising storm days, as

well as hourly releases of weather balloons equipped with recording instruments and radio transmitters from Windy Point Vista.

The 20-person CuPIDO team included researchers from ASU, the University of Wyoming, the U.S. National Center for Atmospheric Research, the University of Arizona, the University of Miami, and the University of Alabama-Huntsville. Support is from the National Science Foundation.



UPCOMING EVENTS

Sept. 13-16: Arizona Hydrological Society 2006 Annual Symposium, Glendale, AZ

Oct. 11-14: SAHRA's 6th Annual Meeting, DoubleTree Paradise Valley Resort, Scottsdale, AZ

Nov. 2: UA Water Forum, UA Student Union South Ballroom, 2-5 pm

Annual Meeting Beckons – Register now!

Don't be left out! Register by **September 18th** for SAHRA's 6th Annual Meeting, "Science Supporting Water Management," at www.sahra.arizona.edu/events/meetings/2006_ann_meeting/, where full details are available. This year's meeting is at the DoubleTree Paradise Valley Resort in Scottsdale, Arizona, commencing on October 11th and culminating on Friday the 13th. Talk about tempting fate! We are in for some fascinating fireworks and stimulating discussions and presentations. Please join us and **REGISTER NOW** to ensure a spot and reduced hotel rates.

Students who have been involved in SAHRA research projects for a year or more are expected to present posters on their work at this conference. Poster abstracts are due **September 15**, with guidelines available at www.sahra.arizona.edu/events/meetings/2006_ann_meeting/poster.html. **Prizes will be awarded** to authors of the 1st, 2nd, and 3rd place student entries.

CONTACT US!

Please let us know when you have news to share or a reason to brag. Students, let us know for example when you have completed your oral exam, defended your thesis/dissertation, or accepted a position in the real world (or even academia). Faculty members, are you offering a new course, hosting a workshop, leading a panel, editing a new journal? Anonymous or second-party tips on newsworthy announcements are also gratefully accepted.

Floods of Aug. 1

As with much of New Mexico, Tucson experienced an abundance of monsoon precipitation this July, August, and September, punctuated by an all-time peak flow in Rillito "Creek" on July 31 of 30,000 cfs, which eclipsed the previous high flow of 24,100 cfs in January 1993. These photos, captured by Betsy Woodhouse and Kyle Carpenter, show standing waves generated by

huge amounts of sediment being pushed through the normally dry riverbed, and

water overflowing the riverbank, filling the riverwalk path that parallels the stream.



Photo by Betsy Woodhouse



Photo by Kyle Carpenter

PEOPLE

New Students

Information on new non-UA students (and recent graduates) is sorely needed! Please send names and email addresses to Mary at mblack@sahra.arizona.edu

New UA-HWR MS student **Will Veatch** grew up in San Francisco and attended the University of Colorado at Boulder, where he earned a BA in environmental studies (specializing in water) and a minor in computer science. He spent the next two years with Teach for America, teaching geometry at Sarah T. Reed Senior High School in New Orleans, LA. Will moved to Tucson a year ago with his wife, Ashley Wennerstrom, who is pursuing an MPH at the Zuckerman College of Public



Will Veatch knows his way around water...

Health. As he is primarily interested in snow hydrology, Will is going to be working with Paul Brooks on either a mass/energy balance model for snowpack or a snowmelt fate and transport model.

Erika Gallo is beginning a doctoral program in hydrology and water resources at UA, with a research emphasis on nutrient cycling, water chemistry, and hyporheic processes, working closely with Paul Brooks. Erika has a bachelor's in environmental biology and an MS in hydrologic science, both from the University of California, Davis.

Welcome to **David Delgado**, who is interested in using geophysical processes to help in the understanding of surface and groundwater interactions, and as such has also entered the HWR-UA graduate program, pursuing an MS, and possibly a Ph.D. David has a BS in physics from Texas State University in San Marcos.

Coming directly to UA-HWR from having received a BS in June 2006 in geology



...as does Caitlan Zlatos

from Juniata College, **Caitlin Zlatos** will be pursuing an MS, working with James Hogan and Tom Meixner. Her primary research interests are water quality, surface water hydrology, and isotope tracers.

SAHRA also welcomes **Matt Switanek**, who is beginning his quest for an MS in hydrology from the UA, working with Peter Troch on the Colorado River Basin. Matt received a BS in civil engineering from UA in May 2003.

Last but not least, **Joe Gustafson** earned a BS in geology in 2005 from the University of Puget Sound and has now matriculated at the UA, seeking a MS in hydrology. Because his primary research interest is snow hydrology (possibly connecting with surface hydrology), he will of course be working with the apparently over-committed Paul Brooks, and possibly with the similarly attributed Peter Troch.

Students Who Finished Degrees

Two students of Paul Brooks at UA recently received their master's degrees in hydrology and water resources. **Jen Kostrzewski's** thesis was "Quantifying variations in source waters and nutrients: A catchment comparison in the Valles Caldera National Preserve." Jen has moved to Detroit and is seeking employment worthy of her skills and expertise. **Laura Klasner's** topic was "Hydrologic controls on nutrient fluxes and transformations within the San Pedro River." She accepted a position as a hydrologist with the

Washington State Dept. of Ecology, beginning in October. Congratulations and best wishes for continued success to both!

Publicity/Honors

CAP Award for Water Research

Two UA students engaged in SAHRA research—**Ali Farid** and **Rosalind Bark**—share first place honors from the Central Arizona Project's 2006 Award for Water Research. Each will receive a \$1,000 prize, the honor of presenting their research at the Arizona Hydrological Society's Annual Symposium in Phoenix this week, and all conference fees. Ali's winning paper was "Using airborne lidar to predict leaf area index in cottonwood trees and refine riparian water use estimates," and Rosalind's was "Water reallocation by settlement: Who wins, who loses, who pays?"

AHS Scholarship Awarded

Also to be presented at the AHS Symposium are three AHS scholarships, one of which is being claimed by UA doctoral candidate **Alex Serrat-Capdevila**, a man who never met a competition he couldn't dominate. Alex will receive \$3,000 for his graduate studies.

New iEMS Editors

Thorsten Wagener and **Holly Hartmann** have been named editors for the International Environmental Modelling and Software Society, and Hartmann has also become a member of its board of directors. iEMSs sponsored a Summit on Environmental Modelling and Software at iEMSs' 3rd biennial meeting in Burlington, Vermont, which featured a workshop on scenario development and analysis

for integrated environmental assessment studies, presented by Wagener, Hartmann, Yuqiong Liu, and Steve Stewart.

McConnell Named NV Researcher of the Year

Joe McConnell, a research professor at the Desert Research Institute and SAHRA collaborator, was awarded the Nevada System of Higher Education Regents' Researcher of the Year Award in summer 2006 in recognition of his landmark work in ice core chemistry, snow hydrology, paleoclimatology, and



McConnell's work beats the snot out of the competition in the field of ice core research.

glaciology. McConnell's research has resulted in numerous publications and research funding resulting from extensive national and international collaborations, including a recently awarded Fulbright fellowship for research in Argentina.

McConnell developed a new method of ice core chemical analysis, resulting in a million-dollar, one-of-a-kind ice core laboratory. The work has significantly broadened the utility of ice cores as archives of paleoclimate and industrial pollution. In his collaboration with

SAHRA, McConnell uses replicated sap flow measurements in trees at the two Valles Caldera sites to characterize and quantify tree transpiration throughout the year and to link interpretation of sap flow to related SAHRA meteorology and hydrology measurements at the two sites.

The Regents' Researcher of the Year award is given to faculty members with a substantial record of accomplishments, including a significant amount of research and scholarly work with recognition, and clear evidence of the national or international stature of the research.

Congratulations, Joe!

Departures

Dean of SAHRA Computing Accepts New Position

Dean Jones, who has faithfully served SAHRA in the capacity of system support analyst since early 2002, is moving onward and upward in an interplanetary career trajectory. Beginning Sept. 18, Dean will be working at the Lunar and Planetary Laboratory at UA on the High Resolution Imaging Science Experiment (HiRISE) on the Mars Reconnaissance Orbiter (MRO) mission, which is already in Mars orbit and begins its main science phase in November. Very interesting and impressive, Dean, but what of us earthlings, who will miss your quiet competence and wicked sense of humor? Expressions of good will and thanks can be sent to Dean—if you hurry—at dean@hwr.arizona.edu.

R & R

Wedding bells are ringing for SAHRA's assistant director for science **James Hogan** and his intended, the lovely and brilliant Rebecca Miles, who plan to wed in Pennsylvania on Sept. 16. Overwhelmed with annual meeting planning, science proposal development,



and the customary wedding preparation craziness, James temporarily lost his mind at the recent SAHRA Executive Committee meeting in August, and reportedly went off on a riff comparing HWR department head **Tom Maddock** and knowledge transfer co-

macrotheme leader **Juan Valdes** to two of his favorite muppets, Statler and Waldorf.

Frankly, we don't see the resemblance, since Tom and Juan are much younger and not nearly as cranky. But we do see the potential for matching SAHRA personnel to their cartoon counterparts for the next Ephemeral Flow. Send your suggestions to mblack@sahra.arizona.edu.