

Ephemeral Flow

A NEWSLETTER ABOUT SAHRA

JANUARY / FEBRUARY 2004

Happy New Year and welcome to second issue of *Ephemeral Flow*, a newsletter for sharing information with 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 critical to this newsletter's success. Please send items to Mary Black at mblack@sahra.arizona.edu

FEATURE

SAHRA Budget and Planning Revisions

In December, the Strategic Budget Review Working Group provided recommendations to Director Jim Shuttleworth, who, with approval of the External Advisory Board, introduced on January 1 a new annual review cycle intended to allow directed evolution of SAHRA activities and the way financial resources will support them. All SAHRA students, faculty, and staff are encouraged to review a document that summarizes the resulting changes in SAHRA's administrative organization and in budget/planning activities at www.sahra.arizona.edu/about/budget.html.

GRANTS/LEVERAGING

STAR Grant

Congratulations to David Brookshire (UNM) and co-PIs Janie Chermak (UNM), Julie Stromberg (ASU), and Steve Stewart (UA), for receiving a 3-year STAR Grant from the EPA's National Center for Environmental Research for their proposal, "Integrated Modeling and Ecological Valuation" (aka the "bird proposal"). Funding is still being negotiated, but the research team is optimistic it will approach the full \$400,000 requested. Seven proposals were funded of 24 received by the EPA.

The project represents a truly multidisciplinary effort. The objective is to perform an economic valuation of ecological attributes for the San Pedro River region in Arizona linking realistic policy scenarios with an integrated hydro-bio-economic model that includes alternative hydrologic, riparian and bird profiles. This project is unusual in that it links nonmarket valuation tools with interdisciplinary natural science efforts already in progress. The research team includes hydrologists,

ecologists, ornithologists, geospatial geographers, and economists. The project aims to help fill the need for reliable valuation information in evaluating preservation options and the value of water in the semi-arid West.

MODFLOW Farm Package Documentation

USGS is providing funds to Wolfgang Schmid and Tom Maddock to develop documentation for their "Farm Package" for MODFLOW-2000. (This will be available as a USGS publication and also on SAHRA's Hydroarchive; see "KT News You Can Use" below). The package is being implemented by USGS to simulate groundwater and surface water components of the irrigation hydrologic cycle in the western San Joaquin Valley, where groundwater pumping is not metered but crop and surface water delivery data have been compiled for the last three decades.

UPCOMING EVENTS

Meetings, Workshops, Seminars, Short Courses

January 16, 2004

Water balance meeting scheduled in Albuquerque to plan a vegetation-plot transect study in the Rio Grande drainage. The meeting will be headed by Eric Small and coordinated with LANL to ensure data to be collected will fit into the integrated model being developed.

May 11-15, 2004

"Connecting Mountain Islands and Desert Seas," a follow-up to the 1994 Madrean Archipelago (or "Sky Island") conference and the 5th Conference on Research and Resource Management in Southwestern Deserts will be held at the DoubleTree Hotel Tucson, 445 S. Alvernon Way. Significant discounts are offered to those registering for the conference before February 10 and for lodging before April 10. More information is at www.skyislandalliance.org/pdffiles/announcement.pdf.

Please send upcoming events you would like to share to mblack@sahra.arizona.edu.

RESEARCH

San Pedro Binational Watershed Alliance

As a result of binational meetings facilitated by the Udall Center, SAHRA, and CLIMAS (Climate Assessment Project for the Southwest), the San Pedro Binational Watershed Alliance has been formed, consisting primarily of the Cananea Municipal Water Council and the Upper San Pedro Partnership. In December 2003, the Alliance agreed to develop a Watershed Plan for the Upper San Pedro Basin with other basin stakeholders. The Watershed Plan will design, implement, and evaluate community-based and ecologically sustainable strategies for resource management in the basin. Further information is available bilingually on the Udall Center website at udallcenter.arizona.edu.

PEOPLE

Student and Faculty News/Milestones

Bisher Imam, now at the University of California-Irvine, received his U.S. citizenship in late November. The change was not truly “official” until December 1, when he successfully passed an oral exam on American pop culture in Tucson administered by his SAHRA colleagues.



Bisher Imam, under physical threat from Gary Woodard, promised to always exercise his right to vote.

Congratulations, Ph.D.s!

More students who finished degrees in Summer or Fall 2003:

Kyle Blasch - Ph.D., Hydrology and Water Resources, University of Arizona, December 2003. Kyle is continuing on at USGS in Tucson.

Yang Hong - Ph.D., Hydrology and Water Resources, University of Arizona, minor in Remote Sensing and Spatial Analysis, August 2003. He will continue his research at UC-Irvine.

Yuqiong Liu - Ph.D., Hydrology and Water Resources, University of Arizona, December 2003. Yuqiong recently accepted a position as a postdoctoral research associate for SAHRA at UA in integrated modeling.

Publicity/Honors

Congratulations to **Michelle Walvoord**, her supervisor, **Fred Phillips**, and their co-authors on publishing the first SAHRA-funded paper in *Science* and having it featured on NPR. The paper, “A Reservoir of Nitrate Beneath Desert Soils,” is included in vol. 302, pp. 1021-1024 (7 November 2003). Commentary on the paper by Erik Stokstad is on p. 969 of the same issue.

Karletta Chief was one of two doctoral-level students at the University of Arizona to receive a 2003 Centennial Award. The awards recognize outstanding achievement and contributions by graduate students and are intended to encourage them to complete their studies. They include \$500 cash and an engraved plaque.

New SAHRA Students for 2003/04

Heather Lacey - NMT student pursuing an MS in hydrology. Her BS is from Binghamton University in geology and environmental studies. Heather is modeling salinity in the Rio Grande using historical data, data from semi-annual sampling trips, and data collected by GLOBE students. (Advisor: Phillips)

Arun Wahi – UA student pursuing an MS in hydrology, probably continuing on for a Ph.D. His current research is on mountain front/mountain block recharge and isotopic tracers. BS in Chemical Engineering from Carnegie Mellon University. (Advisor: Ekwurzel)

Gretchen Oelsner – AB from Smith College, MS from University of Wyoming. Subsequently worked for an environmental consulting company in Denver for 2 years. Gretchen is pursuing a Ph.D. at UA in hydrology with an emphasis on biogeochemistry. Her research focuses on nutrient cycling in the Upper Rio Grande, the role of riparian systems in this cycling, and using a system dynamics approach to modeling

these interactions. As a Sandia Fellow for 2003/04, she will also be working/studying in Albuquerque. (Advisor: Brooks)

Constantinos “Costas” Manoli – pursuing a Ph.D. in teaching and teacher education, with an emphasis on environmental learning. BS from UA in renewable natural resources, MA from UA in teaching and teacher education. Costas is working with Liz Hancock on the evaluation of SAHRA education projects. His research interests are assessing children’s views of the environment.

Correction: Alex Serrat is pursuing an MS in Hydrology, not a Ph.D. in Civil Eng., although his advisor is Juan Valdés.

Staff Graduations

David Lane, Accountant Associate in the SAHRA business office, just completed a B.S. (his second bachelor’s) at the UA in molecular and cellular biology. He plans to take a break from his studies (though not his job), and begin work on a graduate degree sometime in 2005.

LaQueena George, Accounting Assistant in HWR, earned a B.S. in family studies and human development in December.

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 in 2004, hosting a workshop, leading a panel, editing a new journal? Too bashful to talk about your own accomplishments? Anonymous or second-party tips on newsworthy announcements will also be gratefully accepted.

Send comments, information, suggestions to mblack@sahra.arizona.edu.

ANNOUNCEMENTS

Staffing changes

Marisa Rodriguez has joined the SAHRA staff in Tucson as a half-time secretary, supporting Jim Shuttleworth and Rannie Fox. Marisa works from 8 to 12 am and can be reached at 626-2605 or marisa@sahra.arizona.edu.

Jill Gibson, SAHRA's long-time business manager, has accepted the position of Business Manager Sr. in the UA Aerospace and Mechanical Engineering Dept. beginning January 19. Thanks, Jill, for your outstanding efforts on behalf of SAHRA since April 2000. We'll miss you! Future correspondence related to the SAHRA Business Office should be directed to David Lane, laned@u.arizona.edu, 626-1178.

New KT Tools You Can Use

SAHRA Hydroarchive

In the spirit of free and widespread exchange of software within the hydrological community, Hoshin Gupta conceived the idea and Thorsten Wagener and colleagues

Ramon Vazquez, Brad James, and Kyle Carpenter have developed the framework for an open hydrological archive, aptly named Hydroarchive, accessible at www.sahra.arizona.edu/software. Its main objective is to enable software exchange within the hydrological community, thereby helping reduce the amount of time spent on programming. The software offered on Hydroarchive can be downloaded by anyone, free of charge. The website enables software developers to make their own code available to the community via a central location. Developers may define the specific copyright and terms of use and choose whether or not to make the source code available via the site. Comments, feedback, and software are welcome.

Software currently available includes:

- A Riparian Evapotranspiration Package
- LH-OAT
- Linear Least Square Simplex
- Monte Carlo Analysis Toolbox
- Multi-Objective Shuffled Complex Evolution Metropolis Algorithm
- Multi-Objective Shuffled Complex Evolution Metropolis Algorithm - C Version

- Para-Sol SUNGLASSES
- Rainfall-Runoff Modeling Toolbox
- Shuffled Complex Evolution Algorithm
- Shuffled Complex Evolution Metropolis Algorithm
- TIN Index Analysis Package

SAHRA Baby News

Graphic designer Brad James and his wife Melissa welcomed beautiful baby son Darren Isaac to their family on December 30, just in time to earn a tax deduction. Darren weighed in at 8 lbs. 14 oz.



Sweet Baby James

ADMINISTRATIVE NOTES

Spring Break Calendars

For those trying to schedule meetings this semester involving multi-institutional participants, here is the spring break schedule for participating universities:

Penn State: March 8 - 12

UA, ASU, NAU, UNM, NMT: March 15-19

UCSD: March 21 - 28

UCR: March 20 - 24

UCLA: March 26 - 30

UCI: March 27 - 30

Hancock represented SAHRA and made contact with dozens of graduate and undergraduate students and student advisors from institutions that serve predominantly Indian communities. In addition to discussing opportunities with NCED and SAHRA, Liz promoted a new joint recruiting effort for REU positions to be available at all the Class of 2000 STCs (read more about it at www.cens.ucla.edu/stcure/).

New Building Update

Construction of the Marshall Building, the new SAHRA headquarters at the UA, is proceeding nicely. A few members of the SAHRA administration and staff were permitted to do a walk-through of the 5th floor in mid-December, and office furniture has been ordered. The move-in date is anticipated to be near the end of February.

Recruiting Efforts

In collaboration with the National Center for Earth-surface Dynamics (NCED), SAHRA hosted a recruiting booth at the national meeting of the American Indian Science and Engineering Society (AISES) November 20-22 in Albuquerque, NM. Postdoctoral research associate Elizabeth

R & R

Diamondbacks update

Contact Mary (mblack@sahra.arizona.edu) if you are interested in attending an Arizona Diamondbacks spring training game at Tucson Electric Park in March. We will attempt to score a batch of group tickets for SAHRA people at a discounted rate (this would require 20 interested, prepaying people), so we need a realistic estimate of how many would like to attend. Also indicate your preference for the following games: Sat., March 6, vs. White Sox; Saturday, March 27 vs. Royals; or Sunday, March 28 vs. Brewers. All games are at 1:05 pm.

Music and the Arts

UA HWR graduate student (and Sandia Fellow) **Matt Weber** moonlights as a banjo player in a bluegrass/old time/country music band, Country Cavaliers, which also includes 90-year-old Ruth "Grandma"

Smith (washboard, train whistle), and 60-somethings Melvin Davis (guitar), Ronnie Riggs (dobro), and sometimes Rosemary Snow (fiddle). This remarkable collection of musicians has issued a CD, called "Grandma Powered." It's available from Matt for \$10. As a Sandia Fellow, Matt is spending Spring 2004 semester in Albuquerque, working with Vince Tidwell at SNL and taking a course at UNM. Please give him a warm New Mexico welcome.

SAHRA Director **Jim Shuttleworth** took a turn or two in The Southwest Nutcracker, a production of the Tucson Regional Ballet at the Tucson Convention Center in December. This version of The Nutcracker was set in Tucson in the 1880s, with many of the characters changed from the original version into Southwest-relevant characters. Verbatim from Jim: "I was playing the butler in the party scene and this is the butler and maid fooling around."



Shuttleworth fools around.

CROSSAHRAWWORD PUZZLE

by Mary Black

ACROSS

1. Most common SAHRA-related first and/or last name.
6. Primary artery.
11. Type of SAHRA stakeholder (abbv.).
14. The ram constellation.
15. SAHRA measurements of carbon, energy, and water flux show these essentially "shut down" during the pre-monsoon season in a semi-arid pine-fir forest.
16. Type of tree found with manzanita at lower ranges of southwestern sky islands.
17. Container for water samples.
18. Adolescents.
19. Line 34 of IRS Form 1040, or Line 21 of IRS Form 1040A (abbv.).
20. What couch potatoes can avoid by using TiVo.
21. Part of what Thorsten and Hoshin's model predicts.
23. Detective Jim of Hillerman novels.
24. Part of UCSD.
25. Helpmate to the ER staff.
27. A means of sharing/exchanging H₂O as a commodity.
33. Where you can find a lot of SAHRA information, including this newsletter.
36. Ancient Greek marketplace.
37. Conveyance that can be used in Colorado River studies.
38. Hole in a reverse osmosis membrane.
39. One way to reach the SAHRA Web site.
40. Types of elec. current.
41. Fruits of the South Pacific.
42. Ancient Chinese dynasty.
43. Reverberation.
44. International agency providing leveraged funds to support SAHRA's News-Watch subscription service.
45. Côte _____.
46. Greek equivalent of Nicholas.
48. Venus _____.
51. Fisherman's tool.
52. Arafat has been chairman of this since 1968 (abbv.).
55. Relative Standard Error (abbv.).
56. Stream or bay leading inland from the ocean.
59. International nuclear agency that has an Isotope Hydrology section.
60. Federal agency that gives out STAR Grants.
61. Time it takes Earth to travel around the sun.
62. _____ Bigelow, site of SAHRA's eddy correlation tower.
63. Place for weary travelers.
64. Companion agency to the NM Interstate Stream Comm.
65. Set a design into a surface.

DOWN

1. Type of script used on the SAHRA Web site.
2. Type of land/climate SAHRA research addresses.
3. Unaccounted-for casualties of war (abbv.)
4. Snakelike fish.
5. Initials of a founder of SAHRA.
6. Abbv. found in a memo.
7. Crossword-puzzle maker's favorite cookie.
8. Ridge of coral.
9. Standard height of a basketball hoop.
10. Self-important, aggressively stupid person.
11. A land surface model, or a recently born SAHRA baby.
12. Instrument that measures streamflow or precipitation (var.).
13. Slang term for a Dust Bowl migrant.
21. _____ avis.

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Solution available at www.sahra.arizona.edu/newsletter/puzzle/

22. A SAHRA partner inst.
23. Yale's home st.
24. Homonym of 39 Across.
26. Abbv. for 62 Across.
27. Arroyo.
28. Part of IMTA.
29. Suffering emotional conflict.
30. St. Louis landmark.
31. Odorless gas formed by the radioactive decay of radium.
32. It's finger-lickin' good.
33. Astounds.
34. Small Boulderite.
35. Spanish kiss.
38. Certain types of charts.
40. SAHRA or GLOBE, for example.
41. Nautical unit of speed.
43. Formed by the action of wind.
44. 4-stringed music. instr.
45. Fallen Princess.
47. Romanian word for "between."
48. Three, to Wolfgang and Thorsten.
49. James Hogan's favorite TV station.
50. Cruel.
52. Brooks.
53. Actress Olin.
54. How granola tastes.
57. Astrological sign of Gary Woodard and Kyle Carpenter.
58. Common element of "eastern areas."
59. Chemical compound or atom with a net electric charge.
62. My (Span.).