



DAILY BAMS



2009 Annual Meeting

Issue 3 – Tuesday, January 13, 2009

Environment and Health Connections Explored

There are many connections between environment and health, and the Town Hall Meeting, Integrated Solutions for Environment and Health—Your Research Can Inform Public Health Decisions, on Tuesday (12:15 p.m., Room 129B) will be the first in a series that will delve into this topic. Speakers from public health and environmental sectors will touch on the relationship between these sciences and the integrated paths that are needed to improve public health as well as the utility of

earth system science. “This is the first conversation we’ll be having in a group,” notes Wendy Thomas from the AMS Policy Program and moderator of the event. “We consider it a ribbon cutting on the issue.”

Thomas will describe the twenty-first century challenges of missing variables in health models, and the growing demographic and environmental challenges. Following her introduction, panelists will introduce a wide range of top-

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The fun and fanfare begin as the crowd pours in during the ribbon cutting for the “Wares and Fare” exhibit opening.



Mary Glackin, NOAA, on the progress in scientific services:

“I think we have services in this country that we can really be proud of. I know in my career the weatherman has come off the comics page and onto the front page and onto Wall Street in terms of people being willing to make decisions [based] on what we provide.”



Framed by Arizona cacti, AMS guest Elise Wortel, from Venray, Netherlands, takes advantage of the decidedly warmer 70 degree weather to read a book outside the convention center.

A Challenge to You

From Kai N. Lee, program officer for science at the David & Lucille Packard Foundation, speaking at yesterday’s Presidential Forum:

First, I think it’s important to be aware that many ecosystem services that are important to people are not well priced. When we talk about the drawing water out of a river we talk about the capital facilities that are needed to suck the water out and we don’t actually talk about the value of having the water in the river in the first place. We treat that as if it were free. Weather science plays a key role in determining vulnerability and therefore the value to human society of being deprived of the ecosystem services. And there I think the weather community—the meteorological community—has a very important role in helping to assess vulnerabilities, translating them into the dollars and cents and other health impacts that are of currency [to decision makers].

Second, and something of a challenge

that I’ll put to you: You come from a profession that is organized around the idea of prediction. And its support for resiliency is a question of sharing uncertainty, of sharing what kinds of risks can be taken, and assessing those risks in a nonstationary setting where the science is changing month-by-month and year-by-year. The product that you’re going to provide is not prediction in the usual sense, that there’s a 30% chance of a storm surge or whatever. It’s not only that, certainly. It is also a product that takes the form of a relationship so that you can work with decision makers to begin to get a better sense of what they care about so that the farmer who wants to know when the last frost is going to be gets that question translated into a form that a weather person can deal with. So that requires a change in your professional value structure in what you’re trying to do and what’s valuable. That’s not going to be easy to do. This is the right society to talk about it.”



“Southern Exposure,” convention center sentry.

NEWS FROM THE EXHIBITS

WeatherBug® announced today the launch of its Total Lightning Network (TLN), the first integrated intracloud (IC) and cloud-to-ground lightning detection network to be available on a nationwide basis.

The WeatherBug TLN is the

first to use broadband frequency monitoring on a national scale to detect IC lightning. Monitoring IC lightning, which provides a glimpse into newly growing storm clouds as well as dying storms, can extend warning lead times for dangers such as tornadoes and downbursts and can provide 5–30-minute lead times for predicting dangerous cloud-to-ground lightning.

“WeatherBug is uniquely

positioned to quickly integrate thousands of lightning sensors throughout our existing U.S. nationwide weather network, and to build integrated surface weather and total lightning networks globally,” said Robert S. Marshall, CEO and founder of AWS Convergence Technologies, owner of the WeatherBug brand. “We are very excited to pioneer another breakthrough in observational technology.”

The WeatherBug Network is the world’s largest surface observation network, with more than 8,000 weather sensors and cameras strategically located at schools, major sport venues, and public safety facilities throughout the country. The information is streamed live over the Internet to millions of consumers, including telecom carriers, energy companies, and government agencies.

In addition to the high-frequency sensitivity that provides visibility of cloud flashes, the WeatherBug TLN features adaptive digital filtering technology to reduce local noise; network density and redundancy to provide high reliability and enhanced lightning detection efficiency

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Active Career Fair Encouraging for Participants

A bustling reception kicked off the Career Fair Saturday night, which was attended by graduates and undergraduates attending the Student Conference. The fair continues through Tuesday in Exhibit Hall 5 for all Annual Meeting attendees. More than 50 recruiters will be there to talk directly to AMS members about job opportunities, and—if recent years are an indication—at least 300 attendees are expected to provide resumes during the conference (the fair collects them in binders for recruiters to peruse).

The Career Fair kicked off Saturday night with a bustling reception, which was open to graduate and undergraduates attending the Student Conference. Both recruiters and students were enthusiastic on Saturday as they mingled, with approximately 400 students looking to make contacts. “It’s exciting to see this huge crowd,” comments Jennifer Rumburg of the NASA Science Mission. “There are more attendees each year we attend.”

Students kept recruiters busy

with nonstop questions. Robert Carver of Weather Underground noted that he talked for an hour straight, with students primarily interested in the type of positions and what Weather Underground was looking for in candidates. Rumburg added that the students were very specific with their questions, inquiring about degrees and background required to enter the space weather field.

According to many of the recruiters, the students came prepared. “I’m impressed with the interest and the homework that has already been done,” comments Russ Heilig from Davis Instruments, who attended the fair for the third time. Kathy Osborne of Meridian Environment Technology echoed the sentiment, noting that she had received six resumes within the first half hour. “The students are very active and are throwing the net very wide, which is what they need to do,” she says. Meridian is actively hiring for operational forecasters and scientific meteorologists, among other positions. And they were not the only ones hiring, which

students found encouraging.

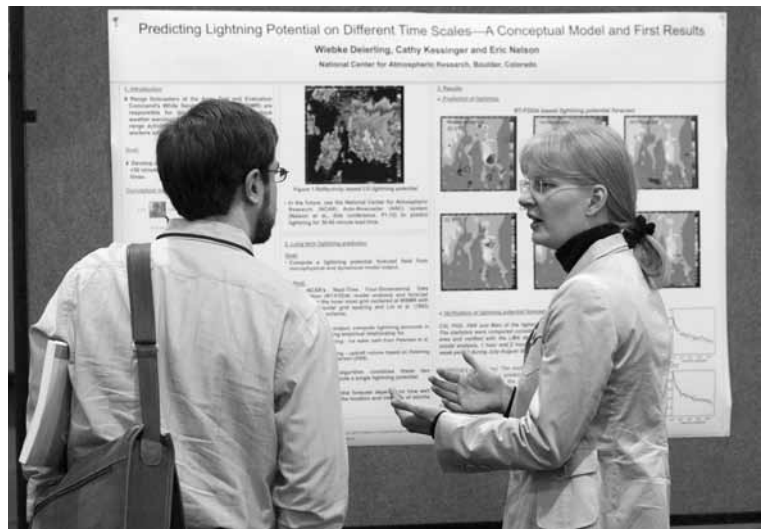
On the graduate school side, Justin Stachnik of Texas A&M has noticed an increased interest in graduate school. “We are speaking to more people every year, which is exciting for us,” he notes, advising students. “Talk to everyone because you never know what’s out there. This career fair is how I ended up at Texas A&M.” Rachel Mauk from Ohio State University set up a table to reach more atmospheric science students as well as gain exposure for the program. Her advice to students was not only talk to faculty but current students, who can give first-hand details of a potential program.

In keeping with the sentiment expressed at the student conference, many of the recruiters emphasized the importance of networking. Rumburg believes that the “Conversations with Professionals” segment of the conference has been an asset in increasing participation at the fair. “I’ve noticed a large increase in participation over the years,”

she notes. “I think students are more apt to approach someone they’ve already met in a more intimate atmosphere.”

Maria Latyszewaskyj of Environment Canada Library, a resource that helps student find jobs and also held a scavenger hunt students participated in, emphasized the importance of

talking with as many people as possible. Osborne agrees and saw it happening at the fair. “The fair enables students to find out what’s out there and get themselves out there,” she commented. “By making an appearance, the students are laying the groundwork for the future and that’s a good move.”



Wiebke Deierling, NCAR, Boulder, Co. discusses her poster “Predicting Lightning Potential on Different Time Scales” with Patrick Gatlin, UAH, ATS/ESSC, Huntsville, Al.

First Awareness, Then Solutions for Health Issues

*Town Hall
Continued from page 1*

ics planned to facilitate an open dialogue. NOAA Assistant Administrator Richard Spinrad will speak on NOAA and the U.S. GEO’s vision and activities. Michael McGeehin, director of Environmental Hazards and Health Effects at the Centers for Disease Control and Prevention (CDC), will touch on CDC’s needs for environmental data and pressing health issues. NASA Programming Manager John Haynes plans to cover NASA’s research program on environ-

mental health. Amy Luers, senior programming manager at Google.org, will discuss the technology to link the two sciences. Madeleine Thomson, senior research scientist at Columbia University, plans to speak on African health issues and the International Research Institute’s Library portal and cross-discipline research teams.

“We expect some lively questions from the participants,” says Thomas. “Environmental and health sciences are both society-serving sciences, but they don’t speak the same language. We need

to find a better way to communicate, and hopefully this forum will provide a starting point.”

Next year’s Annual Meeting will be held in Atlanta, Georgia, home of the CDC, where another Town Hall Meeting will take place. Although specifics are not yet planned, Thomas is already talking about collaborating with societies on the health and communications side. “Our main objective of this meeting is to engage the community and bring awareness to the problem. From there we can identify the pathways to solutions.”

NEWS FROM THE EXHIBITS

Continued from page 1

and location accuracy; extensive data capture and delivery methods to provide an unprecedented amount of data, including waveforms for each flash; and sophisticated data delivery and archiving capabilities. The WeatherBug TLN data is available for direct licensing

or through resellers.

In November, the DeTect Inc. NASA contract team supported the launch of the Space Shuttle Endeavor on its mission to deliver equipment to the International Space Station. Under its 2008–2010 launch support contract, DeTect is responsible for setting up, testing and operating NASA’s two MER-



LIN Avian Awareness Devices (MERLIN Avian Radar Systems) to alert launch controllers to hazardous turkey vulture activity during countdown.

The MERLIN™ Avian Radar System is a proven system available for bird and bat surveys, mortality risk analysis, and migratory studies, and for long-term and

operational monitoring and mitigation of risks. MERLIN has also recently been used for wind farm protection efforts, including the opening last week of Babcock & Brown’s South Texas Gulf Wind I Windfarm. The wind farm is the first in the world to fully integrate avian radar technology into the wind farm operations and will use a MERLIN Avian Radar System to continually monitor bird activity, automatically shutting down the turbines when high

bird mortality risk conditions are detected.

The Minnesota State Department of Public Safety (DPS) took delivery this autumn of the first “group” purchase of the new WEATHERPAK® MTR equipped with a gamma radiation sensor. These systems, made by Coastal Environmental Systems, will be distributed to Minnesota’s regional HazMat response teams, which consist of 10

DAILY BAMS

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Town Hall Sends a Message to the Obama Administration and Congress

In the wake of the 2004 Indian Ocean tsunami, Hurricane Katrina, and other recent disasters, severe weather and climate change have remained high on the public agenda.

With this in mind, the AMS recently joined a group of organizations from the weather and climate enterprise to document for the incoming Obama Administration the key climate and environmental issues facing the United States, with recommendations on meeting society's urgent need for information on water supply, energy usage, coastal development, environmental management, food production, and other atmosphere-related issues.

Today's Town Hall Meeting titled "The Elections Are Over—What Next?" (12:15 p.m., Room 131B) will analyze the transition document and its proposals.

The document focuses on five general areas of concern: observations, computing, research and modeling, societal relevance, and

leadership and management. Specifically, its recommendations include fully funding the Earth Observing System from satellite and ground-based instruments; increasing computer power for weather and climate research; support of an applied research program in the Earth sciences and related fields; education, training, and communication that ensures climate research is conducted to the maximum benefit of society; and effective leadership and management that provides implementation of programs in the best interest of the nation.

The document recommends specific funding amounts for a variety of valuable initiatives, including the Climate Change Science Program, NPOESS/GOES satellite constellations, weather and climate supercomputing, the NOAA Integrated Ocean Observing System, the NSF Ocean Observatories Initiative, and national flood warning and forecasting capabilities.

The groups that authored

the document included AMS, the AGU, UCAR, the Weather Coalition, the Consortium of Universities for the Advancement of Hydrologic Science, the National Association of State Universities and Land-Grant Colleges, the Consortium for Ocean Leadership, the Alliance for Earth Observations, and the Reinsurance Association of America.

Today's Town Hall Meeting

is sponsored by the Weather Coalition, a nonprofit weather enterprise trade association bringing together industry, state and local governments, and academia in an organized effort to urge Congress and the executive branch to fund national initiatives to expand research collaborations between these groups and federal agencies, specifically in mesoscale observations and predictions.



New Fellows Peter Black, left, with his wife Ada, and John Lasley, right, with his wife, Sheila, arrive for the Fellows Reception and Welcome Reception.



Ed O'Lenic, NOAA's Climate Prediction Center, on the demand for climate forecasts:

"This is a very curious thing. There are not a lot of private companies that are working on climate-type products, and yet everywhere I go I hear demand for climate information. People want to know what global change is going to mean for them and they want to know what the seasonal forecast is going to mean for them. The only conclusion I can draw is that somehow the scientific community is dropping the ball here."

Policy Alumni Tour Desert Recharge Facility and ASU Decision Theater

On Sunday, alumni of the Summer Policy Colloquium had a chance to experience firsthand the history and future of water resource issues in Arizona. Two buses filled with approximately 120 alumni traveled to local destinations to learn about water and climate variability in the Phoenix area.

The first stop was the Granite Reef Underground Storage Project, which has recharged more than 910,000 acre-feet of water since it began operating in May 1994. Mark Freebury of the Salt River Project, which partnered with six municipalities to con-

struct GRUSP, gave a brief presentation and fielded questions from the interested participants.

Back on the bus, Kathy Jacobs, director of the Arizona Water Institute, answered further questions and touched on such topics as the innovative water management programs in the state and how regulations to manage water often become political. Arriving at Arizona State University (ASU), alumni split into groups to attend presentations. Scott Ingram, Department of Anthropology, discussed the link between climate and human behavior in relation to the Hohokam canal

system and other archeological sites in Arizona.

A highlight for participants was the Decision Theater, a center for science-based solutions where policy makers and the community participate in collaborative decisions in an immersive setting located on the ASU campus. Vanessa Escobar, a research associate and hydrologist, gave a modeling presentation that involved simulating a drought and the subsequent change in groundwater dependency. The seven-screen three-dimensional capabilities were even more impressive in the presentation that followed, in

which a local park was designed within the theater by combining advanced methodologies and visualization, simulation, and cognitive science.

SPC alumni not only had the opportunity to learn about resiliency and sustainability in an arid climate, but also had time to interact with participants in WAS*IS (the atmospheric science community's societal-impacts research network), the NWS international delegates, and others. Back from the tour, alumni capped off the experience by attending a reception where the keynote speaker was ASU President Michael Crow.



Brand new carpet fluff.

chemical assessment teams and 4 emergency response teams strategically located throughout the state.

The new MTR replace Minnesota's existing WEATHERPAKs purchased in 1993, so this acquisition represents the continuation of a 15-year association with Coastal Environmental Systems. Most of the original systems were still



functional at the time of purchase, but the WEATHERPAK® MTR is designed for a post-9/11 world, with new features such as full-color displays, firmware that displays data from up to 20 other WEATHERPAK® MTR stations, ultrasonic wind sensor, and a new high-visibility tower.

HMEI—the Association of Hydro-Meteorological Equipment

Industry—is holding its General Assembly today at 9 a.m. in Room 203. Interested AMS Annual Meeting attendees are encouraged to use this opportunity to meet colleagues in the manufacturing sector and learn about HMEI activities, including its catalog of members products.

Biral (Bristol Industrial & Research Associates Limited) was awarded a competitive contract by the U.K. Ministry of Defence for the development of a techni-

cal demonstrator for the Portable Integrated Battlespace Biological Detection Technology (PIBBDT) project. The contract will extend research already undertaken by the ministry's scientific research center at Dstl Porton Down toward the development of a compact and fully automated biological agent identification system.

Biral will lead a consortium of U.K. experts with a track record in collector technology, biode-tection, and microfluidics. Other

consortium members will provide advice and expertise on future in-service support considerations.

The technical demonstrator delivered at the end of the two-year project will reduce risk for the next generation of in-service equipment. The benefits are expected to include a quantum leap in technology from macroscale to microscale

Exhibitors of the 89th AMS Annual Meeting

The AMS Annual Meeting is the host to the largest exhibit in the atmospheric, oceanic, and related sciences anywhere. Exhibitors come from the United States and abroad with over 100 organizations showcasing a wide range of products, publications,

and services. Listed below are exhibitors for the 89th Annual Meeting of the AMS. Don't miss the opportunity to browse the exhibit floor and learn what these organizations have to offer you!

Exhibit Show Hours

Tuesday	11:00 A.M.—6:00 P.M.
Wednesday	11:00 A.M.—6:30 P.M.
Thursday	11:00 A.M.—4:00 P.M.

	<u>Booth</u>
AAI Corporation	707
Aanderaa Data Instruments	235
ABB, Analytical	525
Accu Weather, Inc.	535
ADSS, Inc. (formally ADA Tech.)	816
Advanced Designs Corporation	100
AER, Inc.	710
Air Force Weather	238
All Weather, Inc.	441
American Meteorological Society Publications	811
Asheville Area Chamber of Commerce	134
ASLI—Atmospheric Science Librarians International	809
Ball Aerospace & Technologies Corporation	229
Baron Services	111
Belfort Instrument Company	628
Bristol Industrial Research Association	116
Boeing Company	117
CA DWR	437
Cambridge University Press	803
Campbell Scientific, Inc.	627
Center for Disease Control & Prevention	536
Climatronics Corporation	701
Coastal Environmental Systems	427
COMET (A Part of UCAR)	609
Davis Instruments Corporation	334
Design Analysis Associates	124
DeTect	826
DOE/ARM Program	517
DOE Global Change Education Program	440
Droplet Measurement Technologies	817
EKO Instruments Co., Ltd.	335
Enterprise Electronics Corporation	418
ESRI	716
Geonor, Inc.	434
Gill Instruments Ltd	106
Global Imaging, Inc	605
Global Science & Tech, Inc.	102
GRAW Radiosondes GmbH & Co	234
Hach Environmental	436
Harris Corporation	311
High Sierra Electronics	830
HMEI, Association of Hydro-Meteorological Equipment Industry	812
I. M. Systems Group, Inc.	537
IBL Software Engineering	236
INSITU Inc.	447
International Environmental Data Rescue Organization	819
International Met Systems	312
IPS MeteoStar, Inc.	700
ITT	411
Japan Meteorological Business Support Center	541
JENOPTIK Laser, Optik, Systeme GmbH	622
Kipp & Zonen	726

	<u>Booth</u>
Leosphere	128
LI-COR Biosciences	244
Lockheed Martin	201
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National Oceanic and Atmospheric Administration (NOAA)	401
Navy Meteorology and Oceanography Command	601
NOAA Center for Atmospheric Sciences at Howard University and NOAA-CREST	804
Nortel Government Solutions	708
Northern Video Graphics, Inc.	346
Northrop Grumman	219
NovaLynx Corporation	713
NPOESS/Northrop Grumman	125
ProQuest/MGA	807
Proton Energy Systems, Inc.	341
Radiometrics Corporation	731
Raytheon Company	101
Remtech, Inc.	800
RM Young Company	529
SAGIM S.A.	720
Satel-West	336
Science Applications International Corporation (SAIC)	511
Scintec AG	329
SeaSpace Corporation	534
Sonalysts, Inc.	523
Springer	805
STG, Inc.	709
Sutron Corporation	704
Techsense Solutions Sdn Bhd	822
Tower Systems, Inc.	802
UNIDATA	616
Unisys Corporation	110
UCAR EO	623
UCAR, Office of Programs	617
University of Oklahoma	721
University of Wisconsin—Madison, Space Science & Engineering Center	435
Vaisala, Inc.	301
Weather Decision Technologies, Inc.	727
WeatherBug®	241
Wiley-Blackwell	801
Wyle Information Systems	211
Yankee Environmental Systems, Inc.	126

Town Hall Is Time To Talk for Indigenous People and Meteorologists

Communication between indigenous communities and scientists is critical in adapting to and mitigating climate change impacts. The Town Hall meeting on Tuesday evening (6:30 p.m., Room 125A) is meant to launch a partnership between the AMS and tribal communities in the United States.

Raj Pandya, director of SOARS and moderator of the meeting, hopes that the partnership will produce a new understanding that can help all communities, not just tribal communities, understand, adapt to, and deal with the challenges related to climate change. "This town hall is just a first step toward this goal," he comments. "It is a chance to

have a frank conversation and learn from one another."

Three panelists are planned for the evening. Suzanne Van Cooten, a research hydrologist at the National Severe Storms Laboratory, will offer some suggestions for how to formalize the relationship between the AMS community and indigenous communities. Casey Thornbrugh, Ph.D. student in the Department of Geography and Regional Development, University of Arizona, is planning to talk about traditional ecological knowledge and about conveying atmospheric science in ways that relate to the identities of Native American students. James Rattling-Leaf, research associate at the South Dakota School of

Mines and Technology, will give an overview of the role of tribal colleges in the context of tribal-federal relations and touch on the geoscience needs and opportunities in Indian Country.

In organizing the Town Hall Meeting, Pandya found himself thinking of the topic in a new way and hopes the event will provide a similar experience for those attending.

"One thing that was new to me was the fundamental role of that knowing the local landscape has in shaping Indian culture and the degree to which knowledge of the environment pervades Indian identity, and what that means in terms of diversity within the American Indian community," Pandya

comments. "I think I've also learned that traditional ecological knowledge isn't only intellectual, but is connected to every aspect of life."

In addition to the panelists, there is time planned for audience participation, where dialogue can be opened up even further. The facilitators are hoping that this format will encourage honest discussion. Along with being educational, Pandya anticipates the dialogue to be entertaining. "I suspect this will be fun and a sense of humor will pervade the evening," he says. "Along with providing a forum for productive discussion, hopefully a highlight will be some great stories and funny moments."



Susan Avery, Woods Hole Oceanographic Institution, on the challenges of providing decision-quality environmental information:

"We are not essentially constraining our climate models in part because we have not initialized the deep ocean and we're missing the entire water column thermodynamic expansion. So we are still challenged in many ways until we get our climate models right in order to be able to look at these sorts of dilemmas that are facing our cities."

Tuesday Highlights

Uncertainty in Forecasts
12:00–1:30 p.m.
Room 131A

Users want to know, is this forecast trustworthy? Members of the AMS Ad Hoc Committee on Uncertainty in Forecasting are discussing the way forward. See what they think at this Town Hall meeting, and contribute your ideas.

Panel session on "Challenges for Climate Services to Cities in a Changing Climate"
1:30 p.m.
Room 129B

This panel session not only brings together this year's theme of urban challenges with the scientific

realities of global climate change, it also fuses long-range and local-scale thinking within the realm of the useful services regularly provided by our community. Planning for urban sustainability by capitalizing on atmospheric science brings these contrasting scales of thought together.

Moderated by Eileen Shea of the East-West Center, the discussion brings together the familiar partnership of academia, the commercial sector, and government. The panelists are Elliot Abrams of AccuWeather, Inc.; Eric Barron of NCAR; Jim Buizer of Arizona State University; and Tony Haffer of the NWS in Phoenix.

Walter Orr Roberts Lecture
5:00–6:00 p.m.
Room 127BC

Soroosh Sorooshian, University of California, Irvine, presents "Climate Variability and Hydrologic Extremes: Lessons from the Past, Understanding of the Present, and Prediction of the Future—A Personal Viewpoint." The Walter Orr Roberts Lecturer in Interdisciplinary Sciences recognizes an individual for their contributions to the understanding of atmospheric processes through the exchange of knowledge between atmospheric science subdisciplines or between atmospheric scientists and scientists of other disciplines. Sorooshian received this

year's award "for bridging the interdisciplinary gap between hydrology, meteorology, and remote sensing."

Town Hall: NOAA Climate Services Portal Development
7:00–8:00 p.m.
Room 230

The NOAA climate services portal is an integrated, agency-wide web-based capability to share climate data and information. This prototype project, involving several NOAA partners, began in late 2008. This Town Hall not only will provide information on where the project stands now and what the plans are for the future but also seeks your input on what will be a continually evolving effort.

NEWS FROM THE EXHIBITS

Continued from page 3

when compared with current service capability.

The PIBBDT project represents a major opportunity to Biral and its partners in the development of biological detection technology capability for the United Kingdom. Through PIBBDT, Biral should

be strategically well placed as a unique supplier of real-time biodetection equipment. The company has particular expertise in optical characterization of the atmosphere of which the detection of biological components is a major part for both military and civil applications.

Campbell Scientific Inc. (CSI) offers multiday training courses for users of their dataloggers and software. Coming next are a course for use of the CR1000 family of

equipment on February 2–5 and another for use of the CR9000x family.

These comprehensive courses are designed for people who have little datalogger experience or who want to increase their knowledge. The courses emphasize programming with hands-on exercises.

The courses are taught by



experienced CSI applications engineers. Class size is limited to ensure personalized instruction and assistance. Attendees must be familiar with using a personal computer. Course fees include a training manual and the use of a datalogger, computer, and sensors. Lunch will be provided on all course days, and the last



Sonoran Desert Stonehenge? No, rocks for Sunday's teacher workshop.

day features a tour of Campbell Scientific's facilities.

Self-study courses are also available for training on our CR10X and CR1000 dataloggers. Both self-study courses require that you have a datalogger, power supply, and a PC running LoggerNet. CR10X customers will also need an SC32A or SC32B. Contact Campbell Scientific for pricing and further course information.

For over 40 years, ITT has been a world leader in advanced climate and environmental monitoring systems. Our end-to-end solutions allow you to anticipate nature's next move, whether it's in the next hour, the next year, or the next century. ITT's proven-reliable sensors, systems and software capture, process, visualize and analyze data quickly and accurately. So scientists and policymakers can have the data they need to make the best-informed decisions about managing climate change and making the planet more livable. For more information go to itt.com/ams.

**We make climate change more measurable
so we can make the planet more livable.**



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