OAK RIDGE National Laboratory

Reporter

UT-BATTELLE

U.S. Department of Energy Number 72 November 2005

Stormy weather

Two Lab researchers reflect on this summer's weather disasters

On October 20, Amy King was in her Computational Sciences Building quarters girding for another Gulf of Mexico hurricane. Although safely located in East Tennessee, Amy's world was about to be rocked again,

Curtis Boles

Amy King was one of an ORNL team that monitored effects of this year's storms on the Southeast's economic infrastructure.

this time by Wilma, the fourth major storm in a hectic 2005 hurricane season.

"It's about to get busy. I hope we can be finished pretty much by the weekend," she said that morning.

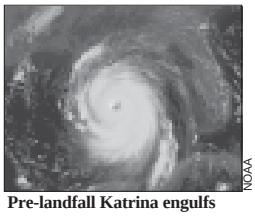
When a hurricane looms off our shores, Amy and her colleagues in the Geographic Information Science & Technology group provide the DOE Office of Electricity Delivery and Energy Reliability with vital information on population, railway and port impacts. In the case of the historically devastating Hurricane Katrina, they worked feverishly both before and in the wake of the storm.

"I've learned more about coal, natural gas and petroleum than I ever thought I'd know," Amy says.

The GIST group, led by Budhendra Bhaduri, came to the public's attention earlier in the year through another global-scale catastrophe—the Asian tsunami. The group's expertise in utilizing spatial data and models through geographic information systems gave relief workers vital information on where survivors might be and what conditions were along the Indian Ocean coastal regions.

The GIST group's information gathering for the Gulf hurricanes has had an economic as well as a humanitarian angle.

"We look at energy sources—offshore oil, ports, rail lines, highways and airports—anything that has to do with commodity flow, to estimate impact before the storm hits," Amy says.



NOAA

Pre-landfall Katrina engulfs the Gulf.

Most people know about Katrina's impact on people (see *Reporter*, No. 71, October 2005) and fuel prices. The effects of the storm were farther ranging. The shutdown of the port facilities in New Orleans choked the lifelines for a number of commodities in and out of the United States.

Curtis Boles

The Computer Science and Mathematics Division's John Drake speculates that future climate models might include more extreme weather events.

"DOE called us with new questions, such as where grain from the Midwest can be offloaded or where can coal be exported. Normally, for example, we move coal by barge, but the Mississippi was closed."

Amy says the group's Paul Johnson, a "world expert on railways" who is stationed at the National Transportation Research Center, studied ways to move coal and grain in the absence of those vital

(See STORMY, page 6)

United Way Campaign charts another record year of giving

This year's United Way campaign at ORNL has raised more than $835,000 for East Tennessee agencies, far exceeding the goal and again setting a record with the largest amount ever for an ORNL drive.

The ORNL total of $835,467—the largest for any campaign in the region—includes employee contributions of some $760,000, plus a corporate donation of $74,961 by ORNL managing contractor UT-Battelle. The total was raised at the same time that a separate Laboratory effort generated nearly $168,000 in support of hurricane relief efforts.

"We are so grateful to ORNL employees for their continued generosity," says Ben Landers, president and CEO of the United Way of Greater Knoxville. "UT-Battelle is the largest single contributor to the several United Ways serving the Tennessee Valley. We are particularly appreciative of their employees' giving spirit this year, when many of our local agencies are continuing their usual work while also providing support for displaced Americans from the Gulf region. It's wonderful to see the ORNL folks stepping up to help meet all these needs."

ORNL Director Jeff Wadsworth says UT-Battelle's impressive United Way involvement continues to be a point of pride for the Laboratory and its employees.

"During a year when they have given so generously to hurricane and tsunami relief and dozens of volunteer service projects for worthy causes in our area, ORNL staff also have stepped forward to make this the second consecutive year of record contributions to the United Way," Jeff says. "These totals are indicative of our employees' generosity and commitment to helping others. I'm extremely proud of and grateful to our staff."

Lee Riedinger, ORNL campaign chairman, says special activities—including a free-throw shooting competition, book fairs and the popular International Festival—added more than $13,000 to this year's campaign coffers.

"We particularly appreciate the participation of members of the Lady Vol basketball program, who helped us 'tip off' our drive," Lee says. "This is an outstanding example of the volunteer spirit of the ORNL staff and the entire community."

ORNL donations include the following approximate amounts to counties in the

(See UW, page 6)

ORNLFD, Emergency Medical Services are ready 24/7

ORNL's firefighters have a brand-new fire truck. One of the ORNL Fire Department's old trucks may be headed for a new home and mission farther south.

The new vehicle is a Pierce Enforcer, replete with the latest bells and whistles. ORNL Fire Department Manager David Baity says it really does have a shiny chrome bell, and a lot more.

"This truck is one of four in the country with a powered hose bed that hydraulically lowers the hose bed to ground level so fire fighters can load hose without climbing up 11 feet to the top of the truck. It is a new safety feature to help prevent falls, sprains and strains from working on top of the truck," David says.

The new service vehicle also has a 1500 gallon per minute pump and an electronically controlled pumping system to snuff out

blazes. This is the first fire truck ORNL has owned with an air-conditioned cab.

It replaces a 1981-model vehicle that's headed for a new life. A process is under way to donate the surplus fire truck to volunteer firemen in a Louisiana parish whose equipment was destroyed by Hurricane Katrina.

"Six of seven volunteer fire departments in that parish were wiped out by Katrina," David says.

The ORNL Fire Department has a new Pierce Enforcer fire truck with the latest in fire-fighting equipment— and a shiny chrome bell (lower left).

EMS in an emergency

The ORNLFD's equally well-equipped Emergency Medical Services can help out people in trouble a lot closer to home. If you encounter a medical emergency at work after hours, contacting the Laboratory Shift Superintendent by dialing 574-6606 or 911 on a land line is the best and fastest way to get help.

"Our EMS response time is typically two minutes when summoned through a fire alarm, the Laboratory Shift Superintendent's number or a 911 call. And ORNL's EMS crews are available 24 hours a day, 365 days a year," says Laboratory Protection Division Director Paul Gubanc.

Well-meaning employees have transported injured employees to Health Services or off-site emergency rooms when the EMS would have gotten them there quicker, with dedicated and trained medical attention along the way, Paul says.

"Using the EMS ambulance speeds treatment that could avoid medical complications or even a fatality, as well as personal liability issues," he says.

If you or a co-worker becomes sick or injured on the job, don't transport yourself or them. Call the Laboratory Shift Superintendent, 574-6606, or 911 if using a land line.

If you need minor treatment during off-hours that doesn't require an emergency call, first aid is available at all times at the Fire Department headquarters, Building 2500.

A note about cell phones: Calling 911 from a cell phone will connect you with a surrounding county's emergency responders instead of the LSS. At work, call 574-6606 in an emergency when using a cell phone. Consider adding the LSS to your phone's directory. —*B.C.*

Hill named Idaho lab deputy director for S&T

David Hill has been named deputy director for science and technology at Idaho National Laboratory. Dave, who was associate Laboratory director for Energy & Engineering Sciences at ORNL, assumed the INL post on November 1.

Dave Hill

"The formation of the Idaho Laboratory signals a new national commitment to nuclear energy research and development. While Dave will be missed in Oak Ridge, his new role at Idaho will advance the nuclear R&D enterprise and enhance the partnership between our two laboratories," says Lab Director Jeff Wadsworth. "This partnership will become increasingly important as we move forward with the nuclear agenda."

Dave joined ORNL from Argonne National Laboratory in 2002, where he was deputy associate laboratory director for engineering research. He served as director of ORNL's Nuclear S&T Division for two years and was named associate Laboratory director last year, managing ORNL's largest and most complex R&D portfolio, with more than $300 million in funded programs and 700 staff.

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Reporter

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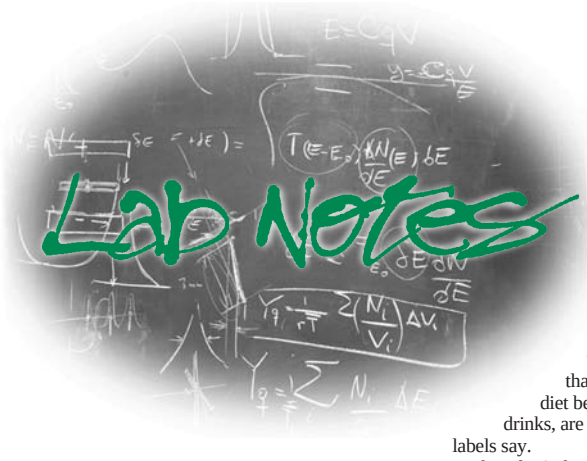


From zilch to national recognition

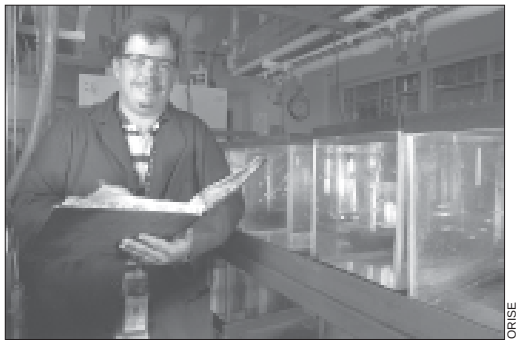
A high school science teacher whose school was one of the first to receive a UT-Battelle science lab grant has won a major national education award. Mike Smith, science teacher at Coalfield High School and participant in the Office of Science's Laboratory Science Teacher Professional Development program at ORNL, received the Milken Family Foundation National Educator's award at a school assembly.

They ambushed him. State Education Commissioner Lana Seivers helped surprise Smith with the award, which includes a $25,000 prize.

"He was stunned a little bit," Seivers told local TV news reporters, who also showed up.

Smith's science lab received a $10,000 gift from UT-Battelle in 2001, which essentially helped him start the high school's science program from scratch. Smith noted at the time that when he arrived at the school the science lab was full of athletic gear. He now teaches biology, environmental science, chemistry and physical science.

The Milken award goes to two teachers in each state. Smith's work with the ORISE-administered professional development program at ORNL, in which he is in his third and final year, is under Mark Greeley in the Environmental Sciences Division.


ORISE

Coalfield High science teacher Mike Smith, wearing his research hat in ORISE's professional development program in the Environmental Sciences Division.

More jolt than we bargained for

Feeling buzzed lately? Gary Van Berkel's Organic and Biological Mass Spec group may know why. In the course of testing a new analytical technique, they've noted that caffeine levels in certain diet beverages, particularly sport drinks, are higher than the nutritional labels say.

They don't think anybody's trying to fool anyone. It's just that their combined thin-layer chromatography and mass spectrometry (TLC-MS) method is that good.

To test their new technique, in which an electrospray probe extracts samples and injects them into a triple quadrupole linear ion trap mass spectrometer, Gary's group chose caffeine because the molecule is well suited to electrospray ionization and to TLC-MS, and also because caffeine is fairly ubiquitous in society.

In fact, you've probably already spilled some on this issue of the *Reporter*.

The team tried three diet colas and three diet sport drinks. Two of the three diet colas' caffeine content was pretty close to the label. One diet cola and all three sport drinks, however, had levels higher than the labels said. Specifically, Diet Cherry Coke was 12 percent higher in caffeine than the label indicated. Diet Turbo Tea was 33 percent higher. The TLC-MS findings were in agreement with a control test using an ultraviolet detection method.

Group member Bruce Tomkins postulates that label readings are derived on average from batches, so individual servings may vary.

She has a bling thing

Janet Dippo is now a published author swimming in gems. Although not quite in the J.K. Rowling league, she and her sister-in-law, Cathryn Dippo, have published a book, Emmons Fashion Magic Jewelry, that catalogs their collection of the company's jewelry sold throughout the nation at parties between 1949 and 1981.

It's nearly 600 color photographs of the bling that preceded the Sarah Coventry line, categorized by material and color.

"I collect the silver-tone stuff and Cathryn the gold-tone. The photo studios were our respective dining room tables. We sort of assembly-lined it. She would take a picture and while she was taking the next picture, I measured the previous pieces and wrote the descriptions," Janet says.

In her real life, Janet is secretary for Physical Sciences Associate Laboratory Director Michelle Buchanan. The jewelry collection is a good example of a hobby that took on a life of its own. Janet and Cathryn have been acquiring pieces for about a decade, or until they decided they had enough for a book, which was a feat in itself.

"We recommend you only do this with two dogs underfoot, one of which must be a hound mix who eats everything in sight—jewelry included," Janet says.

Careers CFW series goal

The ORNL Committee for Women kicked off its new speaker series "Woman-to-Woman: Succeeding at ORNL," with a talk by Michelle Buchanan, associate Laboratory director for Physical Sciences.

The CFW's goal for the series, which recumes in January, is for ORNL women to share factors that helped them in their careers.

Michelle spoke about her own background, including her education and career path experiences, and balancing family and career. She offered career advice to women such as fostering name recognition, the importance of networking and working with mentors. She pointed out the difference between managers and leaders.

Says Karen Downer, Environment, Safety, Health & Quality Director, "[Michelle's] journey thus far has included the support of her professional mentors, family and peers. More importantly perhaps, has been her ability to recognize that support, make balanced-life decisions, and always give back at a greater level."

Family expresses its thanks

The family of Sheri Lafferty, a secretary in the Engineering S&T Division, sent a note of thanks to Laboratory staff members who donated funds and vacation time following a car accident in which the family was involved last summer. Lab employees donated $3,500 to an account set up for the Lafferties. All four members of the family were hurt, Sheri the most seriously, requiring months of recovery.

"The Lafferty family would like to extend our warmest thank you to the Laboratory for the recent donations of money and vacation to our family in our time of need. Although the accident has forever changed our lives, it is heartwarming to feel the overwhelming outpouring of love and support that has been showered on us. We are truly blessed that Sheri is still part of our lives and that she knows how much she means to her coworkers and friends," the note says.

Reported by Bill Cabage

For second half, FY 2005

Significant Event Award winners lauded for achievements

The following staff members recently received Significant Event Awards for the second half of fiscal year 2005. Congratulations to the following, listed with their achievement and division or organization.

Publication of a high-visibility, high-impact report, "Biomass as Feedstock for a Bionergy and Bioproducts Industry: The Technical Feasibility of a Billion-Ton Annual Supply." Robert Perlack, Anthony Turhollow and Robin Graham, Environmental Sciences

Completion of Genomics: GTL Roadmap. Betty K. Mansfield, Judy M. Wyrick and Anne M. Adamson, Life Sciences

SeizAlert epileptic warning system. Lee Hively and Kara Kruse, Computational Science & Engineering Division; Nancy Munro, Life Sciences Division; and Vladimir Protopopescu, Computer Science & Mathematics Division

New Helpline for ORNL. Karen Peacher, Doug Smelcer, Brian Swail, Brian Wallace, Lara James and Chad DeGuira, Networking & Computing Technologies Division

Automated Visitor Registration System. Angela Sexton, Garvin Morris, David Borchert and Ken Woodworth, Computational Science & Engineering

SciDAC 2005 Conference. Sherry Hempfling, Center for Computational Sciences; Betsy Riley and Angela Harris, Computer Science & Mathematics; Angela Beach, Travel/Conference Center; John Bui, Networking & Computing Technologies; and John Smith, Facilities Management

ORNL Software Quality Assurance Plan development and implementation project. Ronald L. Parr and John R. Drake, Networking & Computing Technologies

Integrated system for asset tracking. W.H. Andrews, C.L. Britton Jr., W.L. Bryan, M.A. Buckner, K. Castleberry, M.R. Moore and J.A. Moore, Engineering Science & Technology

High-power testing of the prototype JET ITER-like Ion Cyclotron antenna for magnetic fusion plasma heating. Rick Goulding, Andy Fadnek, Dennis Sparks, Wally Baity and Jerry Martin, Fusion Energy

Support to DOE resulting in the successful completion of Eurofab shipment of MOX and certification of MOX Fresh Fuel Package. Scott Ludwig, Nuclear Science & Technology

Report to Congress on the assessment of the Radkowsky Thorium Plutonium Incinerator. Brian S. Cowell, Stephen E. Fisher, Kent A. Williams and Juan J. Ferrada, Nuclear Science & Technology

Preparation and coordination of ORNL's winning proposal in response to the Distributed Energy Program laboratory call. Timothy J. Theiss, Edward A. Vineyard and Patricia W. Garland, Engineering Science & Technology and Thomas J. King Jr., Office of Strategic Planning

Development, fabrication, assembly, and testing of a 3 kA, tri-axial, high-temperature-superconducting cable and terminations. Jonathan A. Demko, Isidor Sauers, Randy James, Alvin Ellis, Robert Duckworth, Christopher Rey and Brenda Demps, Fusion Energy

First production-quality centrifuge rotor balanced at production speeds. Brian Damiano and Kathy W. Hylton, Engineering Science & Technology

Completion of multi-year thorium nitrate disposition from the Defense Logistics Agency's Curtis Bay Depot. William H. Hermes and Tom D. Hylton, Nuclear Science & Technology and James W. Terry, Environmental Sciences

Exceptional planning and coordination of four important international meetings, completely beyond current job duties." Jan Anderson, Nuclear Science & Technology

Curtis Boles

The Spallation Neutron Source's Kathy Rosenbalm was among the latest group of SEA winners for her work with this spring's 2005 Particle Accelerator Conference. She's shown with conference chair Norbert Holtkamp.

New approach to disposition of waste diesel fuel at NTRC. James Wade, Engineering Science & Technology

Successful completion of the Memphis Regional Technology Integration Initiative Assessment. Wilson D. Lannon and John A.S. O'Neil, National Security Directorate; Oscar Franzese and Stanton W. Handley, Engineering Science & Technology; Tommy J. Phelps, Cheri Bandy Foust, Barry L. Shumpert and Kathy S. Gant, Environmental Sciences; Robert J. Records, Computational Sciences & Engineering; Bruce A. Tompkins, Chemical Sciences; and Michael C. Wright, Nuclear Science & Technology

Preparation and execution of most successful third-party inspection in history of Oak Ridge Office of Counterintelligence at ORNL. Christopher Marsalis, Sue Owen, Donald F. Butler, David A. Land, JoAnn Lowery, D. Matthew Breeden, Polly B. Leinius and Karen A. Moore, Office of Counterintelligence; Michael W. Hulsey, Business Management; and Paul F. Gubanc and Deborah L. Gray, Laboratory Protection

Nondispersive hard X-ray nanoprobe beams below 100 nm. Bennett C. Larson, Condensed Matter Sciences and Gene E. Ice, Metals & Ceramics

Upgrade of the ORNL Physics Division's Multicharged Ion Research Facility. Fred Meyer and Jerry Hale, Physics

Establishment of two major new research programs in biological mass spectrometry research. Robert L. Hettich, Chemical Sciences

Oxidation-and creep-resistant alloy foils for improvements in energy efficiency of microturbines. Edgar Lara-Curzio, Bruce Pint, Phil Maziasz and Karren More, Metals & Ceramics

Genomes to Life Proposal. Brenda Campbell, Bob Hettich, Greg Hurst, Bob Foote and Hayes McDonald, Chemical Sciences; Steve Kennel, Jenny Morrell-Falvey, Mitch Doktcyz and Dale Pelletier, Life Sciences; and Denise Schmoyer, Computer Science & Mathematics

Installation of the new Laser Processing Facility and implementation into the Friction Stir Welding Facility. Joey Edgemon and Alan Frederick, Metals & Ceramics

Timely installation of the superconducting linac cryomodules and the room temperature intersections in the SNS tunnel in support of the project schedule. Dan Stout, William Barnett, Dayrl Briggs, Debra Douglas, Ted Hunter, Chris Luck, Rob Morton, Terry Pennisi, Kathy Russell and Derrick Williams, SNS Accelerator Systems

Successful installation of the unique Spallation Neutron Source Core Vessel Inserts Supports Project Execution Milestone. David Dunning and Tammy McHargue, SNS Experimental Facilities and David (Ric) Hobson and Van Graves, Nuclear Science & Technology

Successful completion of the RF installation for the SNS linac. Mike McCarthy, Yoon Kang, Pam Gurd, Dale Heidenreich, Mike Clemmer, Rob Peglow, Ray Savino, Mark Cardinal, Mike Morrow and Marianne Champion, SNS Accelerator Systems

Exemplary technical leadership in completing the successful installation of an integrated document management system in support of seven institutional partners designing and building the Spallation Neutron Source Project. Karen Nolen, SNS Project & Site Support Office

Conference coordinator for the 2005 Particle Accelerator Conference. Kathy Rosenbalm, Spallation Neutron Source

Implementation of the new nonemployee business processes and Personnel Access System. C. J. Humphreys, Renee Tucker, Susan G. Perkins, Connie L. Begovich, B. Lamar Lepard, Danny Honeycutt and Judy A. Nelson, Business & Information Systems Directorate; Schree Liafsha, Networking & Computing Technologies; and Deborah L. Gray, Laboratory Protection

PERT procurement review team. Joel Pearman, Angela Calloway, Penny M. Owens, Delores S. Foust, Melissa R. McBee, Ronald J. Geouque and Cecilia Jones, Contracts

Sale of the Manitowoc crane. Tom McLaughlin, Facilities Development; Cheri Cross and Will Minter, Asset Management & Small Business Programs; and Jim Lawson and Jama Hill, SNS Project & Site Support

Office space negotiations facilitating relocation of Building 1000 occupants. Jon Bartlett, Asset Management & Small Business Programs

Design, production and installation of the Columbus Exhibit for President Bush. Dami Rich, Tana Helms, Brett Hopwood, LeJean Hardin and Victor Pardue, Creative Media

Integrated Facilities Disposition Plan for the Oak Ridge Reservation. S. Dirk Van Hoesen, Environmental Protection & Waste Management; Karla Gaither, Facilities Strategic Planning; Carlos Melbihess, Facilities Development; Sharon M. Robinson and Paula G. Kirk, Nuclear Science & Technology; and Thomas B. Conley, Nuclear Operations Directorate

Cost-effective recyling of unused Clinch River Breeder Reactor components at 7020 Laydown Yard. Greg Larson and Mary Sue Hamilton, Environmental Protection & Waste Management and Roger O'Dell, Operational Safety Services

Re-tooling of the Operational Awareness Program. Angela Barnard and Teresa Cochran, Quality Services

Identification and stablization of environmental vulnerabilities associated with ORNL at Y-12 facility. Nancy Dailey, Environmental Protection & Waste Management and Lee Zevenbergen, Nuclear Science & Technology

Achievement of critical decision (CD-4A) for the Center for Nanophase Materials Sciences. Jack Stellern, Facilities Development

Sustained technical support to the East Complex. Ann R. Bryant, Facilities Management

Building 1000 personnel and systems relocations for facility deactivation and demolition. Lance J. Mezga, Ricky J. Forbes and Tony Medley, Facilities Development and Jon Bartlett, Asset Management & Small Business Programs

Renovation of space in support of Building 1000 demolition. Arnold Brookshire, Lisa Lester, Jeff Harrison, Doug Loflin and Jerry Coombs, Facilities Management

ORNL 2005 Full Participation Emergency Management Exercise. John Overly, Rick Rodriguez and Jeff Long, Laboratory Protection; Kenny Wilson, Nuclear Operations Directorate; and Ed Turnington, Operational Safety Services

Implementation of new ordering and tracking process for janitor supplies. Al Hendricks, Craft Resources

Building 4501 nuclear facilities consolidation activities. Robert F. Peacher, Nuclear Operations Directorate; Robert T. Jubin, Betty Sueko Evans, Douglas D. Lee and Charles Willilm Chase Jr., Nuclear Science & Technology; Francisco Barrera and Chris G. Grainger, Operational Safety Services; and Ronald L. Sly, Facilities Management

Poster session, "Celebrate Women in Science." Lynn Kszos, Office of Laboratory Director

ORNL People

The Southeastern Section of the American Physical Society has selected Associate Laboratory Director for University Relations **Lee Riedinger** to receive the Francis G. Slack Award. The award recognizes scientists who have made significant contributions to strengthen physics research, collaboration, education and outreach throughout the region. SESAPS cited Lee's research career in physics and his considerable work with collaborations, which include the Science Alliance, the Distinguished Scientist Program, the Collaborating Scientist Program and joint faculty and joint institute initiatives.

ORNL Review, the Lab's quarterly magazine, won a silver award in the science category in the annual *Folio: Magazine* competition. The publishing industry magazine's tough Eddie (editorial) and Ozzie (design) awards competition drew 1,600 submissions. *Review* was one of 227 finalists for the New York ceremony. Other magazines represented included *Newsweek, Sports Illustrated, PC World, Mac World* and *Ski.* Editor **Carolyn Krause** and designers **Jane Parrott** and **LeJean Hardin** represented *Review* at the awards ceremony. The gold award went to *Drug Discovery and Development* magazine, bronze went to *Genomics and Proteomics.*

Engineering S&T Division Director **Ted Fox** will serve as interim associate Laboratory director for Energy & Engineering Sciences during the search for David Hill's replacement (see story, page 2). **Marilyn Brown** is serving as interim division director for ESTD.

Human Resources' **Mike Willard** recently received the 2005 James House Williamson Award at the 68th Annual Meeting of the Joint Tennessee Human Resources/Society of Human Resource Management Conference in Nashville. The award, established in 1956, recognizes "those who have made significant contributions to the development of sound human resources management in all of its various phases." Mike manages compensation, HR information systems and employee and organizational development for the Lab's HR organization.

The Engineering S&T Division's **Patricia Garland** has been selected to serve as activities chair for National Engineers Week 2006 (Feb. 19-25). She will serve with Honorary Chair Ronald Sugarman, chairman, chief executive officer and president of Northrop Grumman Corporation. At ORNL, Patricia manages the Combined Heat and Power Program within ESTD.

Brian West of the Engineering S&T Division was recently selected to receive the 2005 Society of Automotive Engineers' Excellence in Oral Presentation Award. The paper describes the application of laser-induced incandescence device in studies of the effect of NOx trap regeneration methods on particulate matter emissions. This is the second time Brian has received the award.

Nageswara S. Rao of the Computer Science and Mathematics Division received a special commendation from the Information Processing Technology Office of the Defense Advanced Research Projects Agency, "for significant achievement in the development of network modeling and simulation technology." Nageswara has been a principal investigator on the DARPA-funded project at ORNL for the past five years.

David Wilson, staff member in the Building Envelope group in the Engineering S&T Division, has been asked to be a member of the World Health Organization's International Radon Project Mitigation Working Group, an initiative sponsored by the United Nations to establish international standards to reduce the risk from radon exposure worldwide. David's role will be to review current radon mitigation standards and assist in the development of an international mitigation standard that could be used as a template document for other countries.

Stormy

Continued from page 1

ports to unaffected outlets. TRAGIS (Transportation Routing Analysis GIS), an advanced routing model Paul has developed for DOE, provides quick and effective assessments and visualizations of commodity shipments and contingency analysis when usual routes for shipments are unavailable because of disruptions from natural or human induced hazards.

Amy garnered some of her best information in a tried and true way—on the phone, calling port facilities to see if they had reopened.

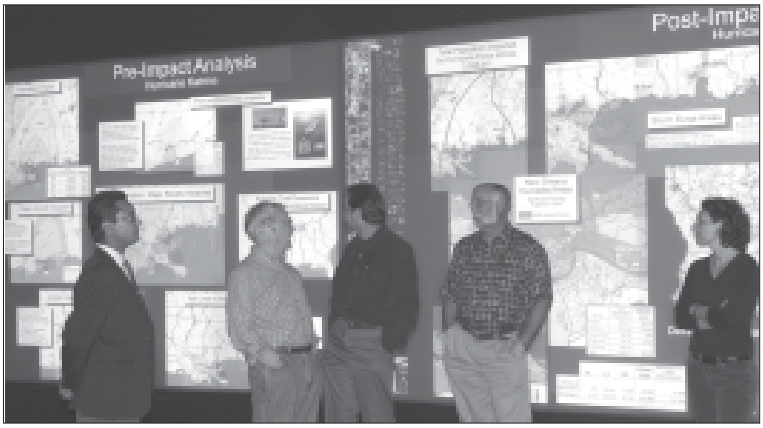
"There was a barge with 10,000 gallons of diesel fuel arriving for the state of Louisiana and DOE wanted to know where they could offload it," she says.

The GIST group has learned that their information in the aftermath of Katrina was reported by OEDER to the Energy Secretary, who in turn reported it directly to the President.

The group's work gives them insights into weather's effects on people and the economy that most people don't gain until they see it on TV or pay more at the pump. On Saturday, August 27, many Lab staff members were enjoying Community Day. Amy was at the Lab too, but that was the weekend that Katrina was approaching Louisiana and Mississippi, and the GIST group was furiously gathering information for DOE and other agencies.

"Fill up everything you have, because everything in the Gulf is shutting down," she advised that day.

Take her word for it from now on.



Curtis Boles

Members of the Geographic Information Science & Technology group (from left, Budhendra Bhaduri, Phil Coleman, project leader Mark Tuttle, Eddie Bright and Marie Minner) examine maps displayed in the EVEREST visualization lab.

Climate modeling and simulation was one of the paths ORNL took to preeminence in the computational sciences. That science focuses more on studies of trends over long stretches of time. Unusual and extreme events like hurricanes aren't part of that mix.

"In these climate simulations, hurricanes don't even exist," says John Drake of the Computer Science and Mathematics Division's Climate Dynamics group. "With climate modeling, what we're interested in is average weather, so we're running in much coarser resolutions than to track a hurricane. We'd love to do that, but computationally, it's very expensive."

DOE is more aligned in the computational sciences with the academic community than the weather community. But never say never.

"There is crosstalk," John says. "Atmospheric climate modeling is really getting good play in hurricane prediction. It's being added to the 'ensemble of nine.'"

Some climate researchers are becoming more and more interested in applying climate simulations and theory to the study of hurricanes. In the climate modeling community, those individuals are jokingly said to have "gone tropical."

The "ensemble of nine" are models that provide input to the National Hurricane Center for NOAA's predictions of the path and fury of a tropical storm.

ORNL's work in climate modeling focuses on exploring advanced theories in atmospheric modeling and the economic and ecological effects of climate change over decades and centuries. The Lab works with partnering institutions in developing the Community Climate Systems Model, which includes the National Center for Atmospheric Research and six DOE national labs.

For its part, ORNL applies its most powerful computing resources to climate modeling, including the Cray X-1E, and will likely continue to ramp up those models with the emerging heft of the National Center for Leadership Computing.

As John notes, and as events since late August have shown, there is overlap in the studies of global climate systems and more extreme and localized events such as hurricanes. Is global warming responsible for the environment that fosters these effects?

Some climate researchers are becoming more and more interested in applying climate simulations and theory to the study of hurricanes. In the climate modeling community, those individuals are jokingly said to have "gone tropical."

It's hard to blame them, because things appear to add up, particularly when the storms are increasingly attributed to warmer ocean temperatures.

"Sea-surface temperatures have risen since the 1960s. We've extended our modeling runs to couple ocean and atmospheric temperatures, and the greenhouse-effect warming matches ocean warming," John says.

The storm theory, or conjecture, is being supported by the models, but there is more to it than that. John explains that hurricanes are affected by many variables. This season's warm water temperatures in the Gulf of Mexico have indeed been an enabler for hurricanes. Storms have bloomed in some cases overnight into category 5 hurricanes.

At the same time, upper winds can cripple hurricanes by literally stripping off the tops, which prevents them from organizing. These winds are often generated by the fabled El Niño and La Niña currents that cause the deluges and droughts that affect the climate and economies of entire regions.

This year, John notes, these climatic siblings have been absent, generating no disrupting winds, which may have been partly responsible for the bad storms.

It's a complicated, chaotic phenomenon with many variables. Sounds like the perfect problem for the world's most powerful supercomputers.—*B.C.*

UW

Continued from page 1

region: Anderson, $263,000; Blount, $20,000; Campbell, $9,300; Knox, $340,000; Loudon, $43,000; McMinn, $1,700; Monroe, $4,400; Morgan, $30,000; Rhea, $3,300; Roane, $110,000; Sevier, $3,100; Union, $5,000.—*Cindy Lundy*

ORNL lends voices to local soccer

If you ever attend an Oak Ridge High School home soccer game, you will recognize a familiar voice—actually one of three familiar voices—performing the public address duties.

Malcolm Stocks of the Metal & Ceramics Division, Al Ekkebus of the Spallation Neutron Source and Linda Horton of the Center for Nanophase Materials Sciences have been performing public address announcing at the high school's soccer games—girls' and boys'—for years.

Not only do they announce the opening introductions and identify who scores the goals, but they also do a running play-by-play of the games for the fans in the stands. Usually, at least two of the three ORNL announcers are present—one to do the actual announcing and the other serving as a spotter for the announcer.

Malcolm, a native of Great Britain and a huge soccer enthusiast, has a distinctive British accent that gets plenty of rave reviews, especially from fans of visiting teams.

"When I hear him announce, I feel as though I'm watching a soccer match in London's Wembley Stadium, which is one of the most famous soccer venues in the world," says Elizabeth Huffaker, a chemistry teacher at Maryville High School. Her two children played soccer for Maryville teams that played games in Oak Ridge. "Listening to him with his British accent, you truly feel as though you're at an international soccer game when he announces. He is by far the best soccer announcer around here," she says.

The threesome had a more difficult time this fall calling games as the Oak Ridge High School soccer field has been taken over by modernization construction activities, necessitating the games be moved to Katie Hunter Field at Big Turtle Park, located along Oak Ridge Turnpike on the west end of town.

Al Ekkebus (left) and Malcolm Stocks, along with Linda Horton, have given local soccer games an ORNL voice.

While there was a press box for the announcers to work in at the former field, they had to either sit on the back of a pickup truck or stand along the outer fence of the soccer field and keep track of everything with their notes sitting on a music stand. Despite the inconveniences, the ORNL announcers are still glad to lend their voices to the cause.

"All three of us have had a lot of fun doing this all these years," Al says. "To watch these student athletes improve as each season goes on is very rewarding. We enjoy very much being part of the Oak Ridge High School soccer family."

Linda says working together at the games gives the threesome a chance to keep abreast of Labwide activities.

"We get to compare notes on everything that is going on in our different areas," Linda says. "That can be very helpful."—*Fred Strohl*

New federal badge plan scaled back

DOE has scaled back many of the requirements of Homeland Security Presidential Directive 12, giving the order much less impact on the Lab than earlier thought (see *Reporter* No. 71). Per an Oct. 13 memo from DOE Headquarters, uncleared contractor employees will no longer be subject to a Personal Identity Verification process. Only Q- and L-cleared contractor staff, who have already undergone much of that process, will be required to comply with the PIV order.

Those who will be required to comply with HSPD-12 include those with the aforementioned Q and L clearances, DOE federal employees, and uncleared contractors servicing DOE Headquarters in Washington. Other individuals may be required to comply at the discretion of DOE officials. The long-term and short-term badge distinction in the original plan has also been deleted.

New uncleared staff members (currently gray badges) are receiving the new-style badges that will give access to ORNL but not to other DOE sites. Badges of existing uncleared staff will be exchanged for the new-style badges over the next two years. Uncleared staff who frequently travel to other sites or have other extra-ORNL access needs may request a PIV badge.

New Staff Members

David Scott Adaline and Jerry Lynn Haynes Jr., Craft Resources
Daniel Edward Archer, Karen Yarborough Fugate, Marcia Vitek Bain and Lona Rae Wood, Nuclear Science & Technology
Aimee Taylor Classen, Environmental Sciences
Mitchell Rufus Griffith, Ann Ellison Baker, Joshua Kane Lothian and David Michael Vasil, Center for Computational Sciences
Sang-ho Kim, Chris McMahan, Alexandre Vasilievich Vassioutchenko, Thomas R. Carty, Gregg Neil Crass, Rodney Keith Ingram Sr. and John Kerry Stiff, SNS Accelerator Systems
Boonserm Kulvatunyou and Heather McCallum-Bayliss, Computational Sciences and Engineering
An-Ping Li, Stephen Kulan and Gabriel Mark Veith, Condensed Matter Sciences
Bridgitte Michelle Mase, SNS Project and Site Support
John Robert Norman, Nonreactor Nuclear Facilities
Rhonda Michelle Rogers, Laboratory Protection
Deborah Joan Shepard and Ralph Wayne Stormer, Quality Services
Zhengwei Pan and Charles Louis Watson, Chemical Sciences
Gayla Puckett Creasey, Patricia Marie Haag and Lora Laverne Holbrook, Quality Systems & Services
Dionne Evette Harper, Business & Information Services
Loren John Hauser and Deborah "Deneice" Daniels, Life Sciences
Steve Allen Bowman and Tab Anthony Goins, Contracts
Michelle Yvonne Hunt, Human Resources
Danny R.Parrott Jr., SNS Experimental Facilities
Anne Lea Rowland, Networking and Computing Technologies

Service Anniversaries

November 2005

40 years: Herbert A. Mook Jr., Condensed Matter Sciences

35 years: Jerry B. Hunt, Nuclear & Radiological Protection; Janie McCowan, Nuclear Science & Technology; Herbert F. Krause, Physics

30 years: John R. Drake, Networking & Computing Technologies; Bernadette Lugue Kirk and James A. Bucholz, Nuclear Science & Technology; Steven Ray Tallent, Craft Resources; Susan L. Rider and Richard W. Murphy, Engineering Science & Technology; Karen Long Nolan, SNS Project and Site Support Office; Larry W. Anderson, Asset Mgt & Small Business Programs

25 years: William Alexander Gabbard, Metals & Ceramics; Nancy D. Smith, Business & Information Services; Kyle O. Rutherford Jr., Environmental Protection & Waste Svs; Michael R. Cates, Engineering Science & Technology

20 years: Charles Anthony Christian and Dwayne G. Kilpatrick, Research Reactors; Lee L. Riedinger, University Partnerships; Rick Allen, SNS Experimental Facilities

Walk this way

New Conference Center pond walkway result of careful planning, attention to detail

After more than three months of construction, the walking trail behind the ORNL Conference Center and Cafeteria is open.

The new sections of paved trail, the arching footbridge and 220-foot boardwalk combine with the existing sidewalk to make a complete loop around the pond for walkers looking to find a quick getaway from the office. A couple of revolutions around the nearly one-third-mile-long track amount to a pretty successful lunchtime stroll.

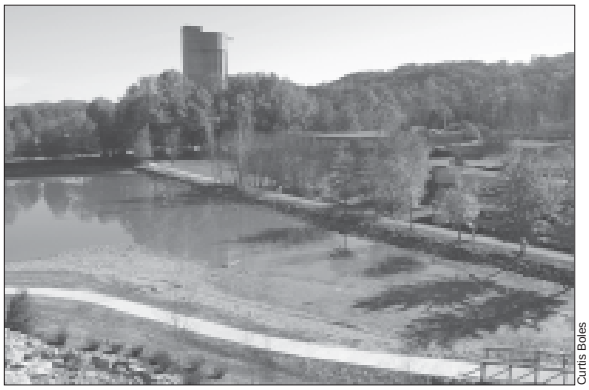
Nature lovers will find plenty of stimulation along the way, too. Plantings of native grasses and wildflowers around the pond provide food and cover for native songbirds and enhance users' experiences. "One of our goals is to make this a place where people can go for reflection as well as relaxation," says Facilities and Operations' Natural Resources Manager Pat Parr. Landscaping with indigenous plants should encourage diverse wildlife, as well as reduce maintenance costs, Pat says.

ORNL staff members worked with Barge, Waggoner, Sumner and Cannon landscape architects in Oak Ridge on design, and the new additions were built by GEM Technologies of Knoxville.

By the spring, the 35-year-old grass carp that currently live in the pond will be moved to the research ponds behind Building 1504, and Environmental Sciences Division biologists will have brought in native spotted gar, largemouth bass and sunfish. "We want species that are highly visible and represent native fauna," says ESD's Mike Ryon. Mike also says that pond lilies, sweet flag iris, lizard's tail, arrowroot and other emergent indigenous wetland flora will be planted to provide habitat in which these fish will thrive.

Subtle features make the entire loop compliant with Americans with Disabilities Act guidelines. The path connects to the Research Support Center cafeteria by a gate wide enough to allow wheelchairs to pass through, and specially lowered handrails were installed in sloping areas such as the stacked-stone ramp to the boardwalk and across the footbridge. Low-gauge wire installed between posts on the bridge and boardwalk prevent wheelchairs from potentially going under the railings, and the slope of the existing sidewalk on the south side of the pond was changed to comply with ADA standards.

"The sidewalk and footbridge now offer a more direct route from the 6000 area to the cafeteria," says Facilities Development Division's Norm Durfee. Previously, wheelchair-bound cafeteria patrons from the 6000 area had to make a longer trip down White Oak Avenue.



Curtis Boles

Strollers can now circumnavigate the Conference Center pond, which has been at low water for maintenance and grass carp removal.

Other construction features include river rocks around the concrete abutments where the stream from the waterfall enters the pond and around the southern edge of the pond. The surfaces of the bridge and walkway are built with a recycled-polymer-and-wood-composition decking that doesn't require staining or waterproofing like conventional wood decking and is not prone to warping or rotting.

The renovations to the pond area have also made it more attractive to a new visitor— a Great Egret has spent the last couple of months calling the pond home. Great egrets, which are common in coastal Southern states, are known for being opportunists who will use manmade structures to their advantage when hunting for fish and amphibians, according to Mike. —*Eva Millwood*

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