

ORNL, NCAR teaming to improve global climate models

More accurate global climate models are in the forecast because of a collaboration between ORNL and the National Center for Atmospheric Research.

A recent memorandum of understanding takes advantage of unique capabilities at each organization and makes official a long-standing research relationship between ORNL's Center for Computational Sciences and NCAR.

"Computing has become an integral part of the scientific enterprise, providing a link between theory and experiment for complex systems like the Earth's climate," said ORNL Director Jeff Wadsworth. "Through collaborations like this, we are confident that we can make tremendous progress in understanding global climate change in much greater detail."

An important task for ORNL and NCAR will be to perform climate change simulations in support of the Intergovernmental Panel on Climate Change Fourth Assessment. The global climate change assessment community is eagerly awaiting the results, which will reflect the input from a number of institutions worldwide. The results will be announced in 2007.

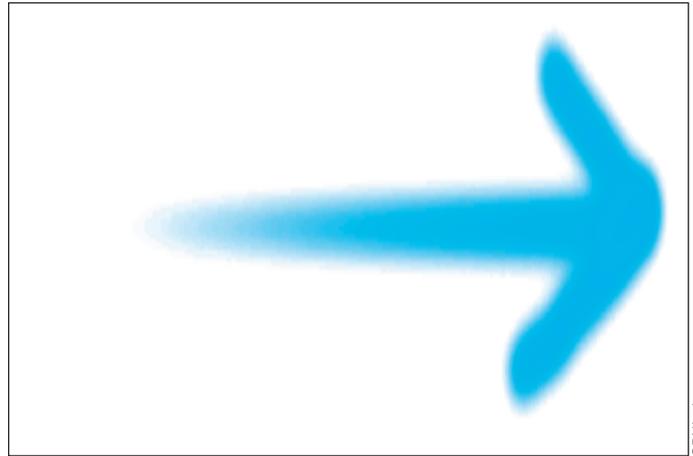
The collaboration between ORNL and NCAR pools the vast simulation resources and

scientific talent of the two institutions, which have the staff and considerable computational hardware that can be used to explore novel experimental and computational designs. John Drake of the Lab's Computer Science and Mathematics Division envisions the partnership leading to innovative solutions to problems and to more sophisticated models that focus on global carbon cycle, dynamic vegetation in the land model, more realistic hydrology and river routing, and progress in a number of other areas.

As part of this effort, the Center for Computational Sciences is providing dedicated computing resources to perform climate change simulations. The simulations

could require several months to complete, even with 12 nodes (384 processors) of the IBM Cheetah's 27 nodes assigned to the task. And, equally important, the collaboration focuses on making the most of NCAR and ORNL's vast computing resources by

(See NCAR, page 6)



ORNL photo

John Drake of the Computer Science and Mathematics Division participates in a climate simulation exercise.

State's outstanding 'junior scientists' visit ORNL

More than 80 selected science students and instructors from 19 Tennessee high schools visited ORNL last month as part of the 39th Annual Junior Science and

Humanities Symposium. The state symposium—one of more than 40 conducted nationally—is co-sponsored by ORNL, the University of Tennessee, the United States Army Research Office and the United States Naval Research Office.

ORNL tours for the participants focused on life and engineering sciences technologies, advanced materials, environmental sciences, physics, neutron sciences, robotics and high-performance computing.

Laboratory staff members also made presentations, including Chemical Sciences Division Director Michelle Buchanan ("Beyond Proteomics: Defining the Machines of Life") and Major General (Ret.) Dennis Jackson, director for Logistics Transformation, National Security Directorate ("Science for Security: Protecting the Homeland").

Symposium objectives are to promote research and experimen-

tion in the sciences, mathematics and engineering at the high school level; recognize the significance of research in human affairs and the importance of humane and ethical principles in the application of research results; search out talented youth and their teachers, recognize their accomplishments and encourage their continued interest and participation in the sciences, mathematics and engineering; expand the horizons of research-oriented students by exposing them to opportunities in the academic, industrial and governmental communities; enlarge the number of future adults capable of conducting research and development; and encourage the participation of females and other minorities in the sciences, math and engineering.

Selected students, primarily juniors and seniors, presented papers concerning their research projects. On the basis of these papers, five students will be awarded expense-paid trips to the national symposium. Participants with the best scientific papers at the national symposium will attend an expense-free "Science Fortnight" in England during the summer. [ornl](http://ornl.gov)



Curtis Boiles

Mark Bevelhimer (far right), research staff member in ORNL's Environmental Sciences Division's Aquatic Ecology Laboratory, demonstrates a fish experiment to participants in the 39th Annual Junior Science and Humanities Symposium.

Volunteer logs 100+ hours reviewing historic materials

What do you do when you have a storage cabinet full of photos and negatives and no one on staff with the time or “corporate memory” needed to review them for historic preservation and documentation purposes? You tap into the Friends of Oak Ridge National Laboratory network and find willing volunteers who represent a vast resource of historical and institutional knowledge.

Joy Anderson, manager of ORNL’s Image Retrieval and Information System Photo Gallery in the Communications & Community Outreach Directorate, did just that through a team that originally developed through the efforts of Lab Records’ Juli Stewart. The team worked with Dave Reichle, who was serving as president of FORNL, and advertised the need to the organization’s members.

Anderson, who serves as project director for the Team UT-Battelle Project, “The ORNL Historical Photo Collection,” was able to gain the support of FORNL volunteers John Bigelow, Jim Cox, Josh Johnson, John Griess, Fred Maienshein, Hal Smith and Gerry Slaughter, who spent more than 80 hours reviewing thumbnail photos in 2002.

Slaughter really took ownership of the project and has been working at the laboratory on a weekly basis. Since September 2002, he has logged well over 100 hours. Each time, with Anderson’s direction, he reviews logbooks and negatives to see if he can identify the contents.

“It is so important to preserve and document the Lab’s pictorial history of the people, events, projects, facilities and other locations that have shaped its past,” Slaughter said. He also has helped ensure that the public knows about that history through another FORNL match with the sponsors of the DOE Oak Ridge Facilities Public Tour program. Slaughter serves as a tour guide and was the

FORNL liaison for the program for several years, ensuring that volunteers were scheduled throughout the annual tour season.

Anderson said the task that Slaughter has taken on is awesome, because there are some 43 log books to be reviewed. “To date, Gerry has reviewed more than 7,000 negatives in just two of those logbooks. He truly has demonstrated his knowledge and memory of past Lab operations, because he has already identified many of the images from 1957 up through 1962,” she added.

Typical shots are those of construction and engineering projects such as the EGCR (High-Temperature Gas-Cooled Reactor), Molten-Salt Reactor, High Flux Isotope Reactor, High Radiation Level Examination Lab, Tower Shielding Facility, and the 4500S and 4508 Metals and Ceramics Division buildings.

There have been many memorable portraits and photographs of Alvin Weinberg, of division directors such as Sam Beall, of project directors and of several researchers. Support staff members in areas such as travel, finance and shops also have been identified. And a call last year from the state of Maryland historian led Slaughter on a particularly successful detective job. He needed to identify a photo of Clarence Larson, who was

director of ORNL in 1951 when Gerry first came to work at the Laboratory. (Larson also was well known as a pioneer in nuclear science at the Y-12 Plant. He went on to positions as the top management official for the Union Carbide Nuclear Division and as commissioner at the Atomic Energy Commission.)

Slaughter also was able to identify some medical personnel with the help of former



FORNL volunteer Gerry Slaughter works with Joy Anderson on the Team UT-Battelle Project, “The ORNL Historical Photo Collection.”

medical director Dr. Tom Lincoln, a personal friend. ORNL Metals & Ceramics Division management requested that he provide photographs for posters showing the construction of buildings 4500-South and 4508—a project he especially enjoyed, since he was a member of the division for 42 years before his 1993 retirement.

Anderson’s task is to take the photos and negatives and enter each image as a new record, including any information known on the subject or persons. The negatives are scanned and uploaded for viewing in the IRIS photo gallery.

Slaughter also helps categorize the images by subject areas so that requesters can access needed construction photos that might help with design issues. He and Anderson agree that working together is the real bonus. However, they also admit that the cabinet, which is still full of unidentified photos, will need many more volunteers to eventually see the shelves empty. If you are interested in helping with this project, contact Anderson at 865/574-6759.—Marilyn McLaughlin [ornl](#)

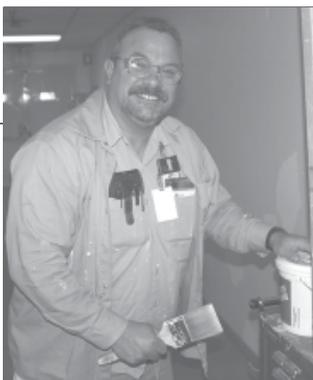


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Thomas Giles of Craft Resources gets an early start on some spring paint-up/fix-up work around the Laboratory.

Lab Notes

Colony comes in from the cold

The first litter of mouse pups for the William L. and Liane B. Russell Laboratory for Functional and Comparative Genomics has arrived. The mice are the first ones from the frozen embryos that were brought over from the old mouse house at Y-12.

None of the mice from Y-12 came over to the new Russell Lab. Embryos from the Y-12 colony were frozen, brought to the new facility and placed in pathogen-free mother mice. Y-12's colony was notoriously not free

of pathogens and thus couldn't be shared with other facilities.

Pathogens, mainly diseases, can skew research results on the mutant mice. For that reason, the Russell Lab is a scrupulously filtered and access-controlled facility that only a few well-trained researchers and technicians may enter. Even Barry Berven, the Biological & Environmental Sciences Directorate's operations manager, can't get in.

The first litter, Barry says, are the first of six to ten thousand that will be reared in the new lab. And if you think mice are icky, consider that those pathogen-free little shavers are cleaner than you ever will be.

A dedication ceremony is planned for later this spring.

More about bubble fusion

The American Physical Society journal *Physical Review E* announced early this month that further research into sonoluminescence in deuterated acetone, first reported by the journal *Science* in March 2002, supports the early determination by the original authors that some sort of fusion reaction is going on.

The "bubble fusion" announcement two

years ago caused a furor, and the latest work is still being met with skepticism. But most agree the research is more complete.

After the initial announcement, lead author Rusi Taleyarkhan, a researcher in ORNL's

Engineering S&T Division, received funding from the Defense Advanced Research

Projects Agency and initiated

follow-up studies. He is now the Arden L. Bement Jr. Professor of Nuclear Engineering at Purdue University in addition to having a part-time position in ESTD.

The new findings from the follow-on research performed at ORNL were presented to an ORNL committee nearly a year ago and subjected to exhaustive internal review.

The paper was submitted for publication last May and has undergone similarly thorough external peer review.

Purdue University and Rensselaer Polytechnic Institute, home of co-author Richard T. Lahey Jr., issued media releases coinciding with *Physical Review E*'s announcement.

"It is clear that Rusi's new data are more significant statistically than his earlier data," Deputy Director for Science & Technology Lee Riedinger said in the Purdue release. "This is an exciting result, even if I do not understand the origin of the effect."

Tracking in progress

The East Tennessee Economic Council presented two former ORNL directors—Alvin Weinberg and Bill Madia—with "Muddy Boot" awards on Feb. 13. The awards have been presented since 1973 "to those who have worked on behalf of the betterment of Oak Ridge with the type of spirit of those first Oak Ridgers who trampled their way through the mud during the early days of the city during the 1940s."

In Weinberg's case, his footwear undoubtedly did get soiled in the 1940s as he trod around the early Clinton lab, which became ORNL. Weinberg worked with fellow nuclear pioneers Eugene Wigner, Enrico Fermi, Waldo Cohn and others as they brought the Graphite Reactor pilot program alive, and Weinberg played a major role in

transitioning the Lab from a wartime project to a growing research institution.

Madia is also no stranger to upturned earth. The former east parking lot is currently half construction site and half prime office and lab space, thanks to the modernization campaign initiated when he arrived with UT-Battelle in 2000. The combination of federal, state and private dollars that helped move the modernization forward will likely be copied by other federal labs. For his part, he predicted in 2001, "The mud, the trucks and the noise—I'll love every minute of it."

The current buzz on Main Street

Lab staff members who have arrived from the Pacific Northwest have, to put it bluntly, missed their coffee. Seattle, Wash., for instance, seems to have a city ordinance that prohibits any city block to be without a Starbucks.

Things are improving. February 23 saw the first day of operation of a coffee and bagel stand in the Research Office Building's Main Street area. The stand joined another on-site amenity, an ORNL Federal Credit Union branch office that opened in September.

The stand is operated through a lease agreement with UT-Battelle Development Corporation by the Hot Bagel Company, which has a shop in Manhattan Place in Oak Ridge. Espresso, cappuccino, latte and regular and flavored coffees are available as are bagels and breakfast pastries in the morning.

Facilities and Operations Director Herb Debban, who appreciates his cuppaJoe, received this note from Computing and Computational Sciences Associate Lab Director Thomas Zacharia: "My post-doc and I were talking science and sipping espresso; this is very civilized."

Reported by Bill Cabage



Awww. The Russell Lab's first litter



Coffee commerce on Main Street

Curtis Boles

Liu elected to National Academy of Engineering

C.T. Liu, a senior corporate fellow and a researcher in the Metals and Ceramics Division, has been elected to the National Academy of Engineering.

Election to this organization is considered to be one of the highest professional distinctions accorded an engineer.

Liu was honored for his research that has advanced ordered metallic compounds from the laboratory into practice.

Academy membership honors those who have made "important contributions to engineering theory and practice, including significant contributions to the literature of engineering theory and practice," and those who have demonstrated accomplishment in "the pioneering of new fields of engineering, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education."

There are 2,174 U.S. engineers in the academy, along with 172 foreign associates.

Liu, who leads the Alloying and Behavior Design group, has studied physical metallurgy and mechanical properties of intermetallic alloys and other high-temperature structural materials at ORNL since his arrival in 1967. He is also an adjunct professor at the University of Tennessee.

He is considered a world authority on the subject of structural intermetallics. His



C.T. Liu

research led to his 2003 election as a fellow of the World Technology Network. Liu earned the 2001 Acta Metallurgical Gold Medal. He has earned a World Highly Cited Researcher in Materials

Science Award, a distinguished inventor honor from Battelle Memorial Institute and is included on the list of 1,000 most cited physicists from 1981 until 1997.

Twenty-five patents based on his research were awarded between 1973 and 2003.

Liu received a bachelor's degree in mechanical engineering from National Taiwan University and a master's degree and doctorate in engineering and materials science from Brown University.

He and his wife, Ta-Chang, who recently retired from the Communications & Community Outreach Directorate, reside in Oak Ridge. They have two children, Evelyn and Kent. [oml](#)

Kohrt visits ORHS, emphasizes support for education

Battelle President and CEO Carl Kohrt emphasized the support of Battelle and UT-Battelle for Oak Ridge High School and its science education program during a two-hour visit March 11.

Kohrt, who viewed several science demonstration projects developed by members of the high school's Science Club and regional champion Science Olympiad team, praised the students for their talent.

"You represent the next generation of scientists who will be working at laboratories such as those managed by Battelle," Kohrt said during a gathering of science students and teachers in the school library. "I'm impressed with what you have been able to accomplish at such a young age. At this stage in my life, I'm glad that I only have to consider hiring you and not competing against you."

Thom Mason, Spallation Neutron Source director and head of a community effort to reconstruct Oak Ridge High School, found familiarity with some of the experiments.

"These students are working on some of the same projects our people are doing every day," said Mason, who invited the group to take a future field trip to the SNS site.

Nita Ganguly, ORHS teacher of biology and advanced placement environmental science, said UT-Battelle's support of the high school's science facilities during the past three years—including \$30,000 in funding to enhance the science laboratories—has helped continue the school's tradition of developing strong science students.

"These students could not have such high-quality equipment in our classrooms and labs

without the very generous support of UT-Battelle," Ganguly said.

UT-Battelle's contributions have been used to purchase liquid-crystal display projectors that produce electronic lectures and notes that students can access by computer at home, a classroom performance polling system that enables teachers to conduct an instant class quiz to make sure they understand the work being covered in class, and other laboratory equipment.

Ken Green, Oak Ridge High School principal, said the science students had eagerly awaited Kohrt's visit.

"To have an official from a prominent position in the science community visit our school means so much to our students," Green said. "We have emphasized the importance of our partnership with UT-Battelle, and I think these students truly understand and appreciate how much the corporation has helped them. Our school's partnership with UT-Battelle has been very positive in so many ways."

In addition to visiting biology and chemistry labs and a physics classroom, Kohrt saw a classroom that is covered with cracks in the wall, indicative of the facility's need for



Battelle President Carl Kohrt, ORNL Director Jeff Wadsworth and SNS Director Thom Mason (partially hidden) view a science experiment display described by ORHS students Lauren Buchanan (right) and Anna Xiques. Lauren is the daughter of ORNL Chemical Sciences Division Director Michelle Buchanan.

renovations. UT-Battelle inspired the effort to get the Oak Ridge community involved in a project to upgrade the high school, which was constructed in 1951.—Fred Strohl [oml](#)

Curtis Boles

CFW celebrates 10 years, keeps busy with new programs

The ORNL Committee for Women chalked up an active year in 2003—its 10th year of advocacy for Laboratory employees. The group's primary purpose is to foster and promote ORNL as a desirable work place for women, which involves enhancing the work place environment, including policies and procedures and attitudes; development opportunities for women in all career paths; and recognition of ORNL as a preferred employer by women.

Toward these goals, the CFW, which includes both women and men, compiled an impressive track record in 2003.

Women's History Month was observed in March, with programs featuring Tennessee's First Lady Andrea Conte; a session on "Good Health/Get Into Shape"; "Women of the Wild West"; and "Women of the Manhattan Project: Oak Ridge and Hanford." ORNL's committee is represented on the community

The Committee for Women includes both women and men.

DOE/Contractor Committee for Women's History Month.

The CFW sponsored a series of brown bag seminars, including a second session of "Parent to Parent," a video workshop series in on the fight against drugs, provided by the Children's Advocacy Network.

The group also sponsored a new seminar series, "ORNL for Dummies." The sessions reviewed finances, overhead, maintenance, etc. The first session in July included a presentation by Bryan Kendrick on Laboratory overhead and a Q&A period with George Clark. In August, Kathie Shearer and DeAnn Ingram discussed Laboratory travel policies.

A jury organized by the CFW selected five nominations for the YWCA Tribute to Women competition, sponsored by the Knoxville YWCA to recognize area women for outstanding accomplishments. Bernadette Kirk, Nuclear Science & Technology; Rebecca Efrogmson, Environmental Sciences; and Michelle Buchanan, Chemical Sciences, were nominated in the Science and Technology category. Kaye Johnson of Communications & Community Outreach was nominated in the Volunteer Community Service category, and Sandra Kennedy of the Physics Division was nominated in the Human Services category. Buchanan and Johnson were winners in their categories. Nomination criteria included demonstrated leadership, significant professional growth and high levels of career achievement.

During Knoxville's Seventh Annual Komen Race for the Cure in September, Team UT-Battelle received the top Corporation Award for having the largest number of participants

Oak Ridge National Laboratory

A decade of service

Since the group was chartered in 1994, members of the ORNL Committee for Women have dedicated their efforts to making the Laboratory a preferred work place for women—and a better overall institution—into the 21st Century.

Led by Michelle Buchanan, the first chair, CFW objectives were to "raise issues and recommend actions" to promote opportunities for women at ORNL. These issues included management representation, recruiting and hiring, career development, work environment, childcare, and education.

Other original members were Marilyn Brown, Mary Lou Daugherty, Brendlyn Faison, Diedre Falter, Hal Glover, Helen Payne, Peter Tortorelli, Judy Trimble, Julie Watts and Pat Trentham. In their first year, CFW members

- Developed a charter
- Hosted a brown-bag luncheon to review the first Women in Leadership Conference sponsored jointly by DOE, NASA and AWIS
- Established a "Did You Know" column for *Inside Line* (now *ORNL Today*)
- Solicited delegates for the DOE Review of Laboratory Programs for Women
- Helped publicize the Dependent Care Survey, obtained raw data and summarized results
- Hosted a reception for Lee Russell, recipient of the Fermi Award
- Helped organize and publicize Take Your Child to Work Day and Community Day.



Tennessee First Lady Andrea Conte (second from left) visited ORNL in 2003 as part of the Lab's observance of Women's History Month. With her at the Spallation Neutron Source project site were (from left) her chief of staff, Jody Folk, and Kathlyn Boudwin and Marion White of the SNS Directorate.

Members of the 2003–2004 committee recently met with former members to commemorate the group's 10th anniversary. Laboratory Director Jeff Wadsworth joined the group for lunch and a discussion of current issues and concerns, including the need for career development for laboratory women and the hope that more women can be included in mentoring programs and succession planning at ORNL.

Wadsworth and Committee Chair Barbara Vogt Sorensen also led a discussion of how the Laboratory could help get more female and minority students interested in science and math and then nurture and recruit those students.

Other CFW members are Mylissa Buttram, Cathy Cheverton, Sherry Estes, Sharon Fritz, Pamela Gurd, Rongying Jin, April Lewis, Cindy Lundy, Thom Mason (management champion), Sylvia Milanez, Shirley Shugart, Swati Wilson and Mary Jo Woods.

Today the Committee for Women remains dedicated to promoting the visibility of ORNL women and to increasing the leadership potential of women at the Laboratory and elsewhere in the community.

(190) registered for race-day events. This was the fourth straight year ORNL has received the award. The monetary contribution was none too shabby, either. According to event coordinator Wendell Ely, the total amount contributed by UT-Battelle employees, family members, sponsors, etc., was approximately \$4,500. Winners of the ORNL t-shirt design contest were Melissa Hood and Nina Roberts, whose designs were combined on the shirts.

A joint committee including CFW, Benefits, Medical, and Wellness Committee personnel sponsored Women's Health Day in

September in conjunction with the Race for the Cure. Activities included breast cancer awareness, bone density screening, UV camera analysis of sun damage to the skin, nutrition information, body fat analysis, hearing and vision screenings, general fitness information and door prizes.

The committee has also taken an active role in issues concerning women at the Lab. To learn more about the CFW, see the Web page at www.ornl.gov/cfw/home.htm—Shirley Shugart [ornl](http://www.ornl.gov)

NCAR

Continued from page 1

benchmarking new architectures and evaluating programming models required for climate simulations.

“The re-emergence of Cray for scientific computation has changed the landscape of parallel computing,” Drake said. “We expect to make very good use of the Cray X1 for atmosphere, ocean, land and sea ice climate simulations.”

In recent years, ORNL and NCAR collaborated in the development of the Community Climate System Model and continue to study a broad range of scientific and technical challenges in modeling the Earth’s climate. The CCSM simulates Earth’s climate by performing modeling in the atmosphere, ocean, land and sea ice. The model is fully integrated and provides state-of-the-art computer simulations of the Earth’s past, present and future climates.

Global climate modeling is considered vital to understanding potential effects of increased greenhouse gases and to evaluating likely effects of policies. As computing power

continues to increase, models can become more sophisticated and take into account many more variables, thereby increasing the accuracy.

“The sustained partnership between NCAR and ORNL has contributed to our increasingly robust understanding of the causes and characteristics of past changes in Earth’s climate,” said NCAR Director Timothy Killeen. “The next generation of model, made possible through our continued collaborative work, will enable exciting new tools for scientists and decision makers interested in the nature and extent of future changes in the Earth’s system.”

The Center for Computational Sciences, established in 1992 as a DOE high-performance computing research center, is a designated user facility focused on grand challenges in science and engineering. The center is housed in a new 170,000-square-foot building with a 40,000-square-foot computer center. It is the nation’s largest facility for unclassified scientific research.

NCAR is managed and operated by the University Corp. for Atmospheric Research under contract from the National Science Foundation.—Ron Walli [ornl](#)

ORNL people

Ed Grostick has been named acting director for ORNL’s Transportation Program and National Transportation Research Center User Facility. He replaces Dick Ziegler, who has decided to retire after 34 years of service at ORNL. Grostick has served as deputy director of the Transportation Program for the past five years. This program performs research and development in support of the DOE’s FreedomCAR and Vehicle Technologies Program, which includes the FreedomCAR Partnership (previously known as the Partnership for a New Generation of Vehicles) and the Twenty-first Century Truck Partnership. Grostick has 41 years of research and program management experience, including more than 26 years at ORNL. In the past eight years, he has worked with the DOE Energy Efficiency and Renewable Energy Program and the transportation industry to define, establish and implement transportation research programs. Grostick will serve as acting director while a search for a director is completed.

ORNL Corporate Fellow **Tuan Vo-Dinh** has been elected a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). “This election signifies recognition of his many distinguished contributions to the field, as well as demonstrated interest, concern and involvement with critical issues affecting medical and biological engineering.” His induction took place Feb. 27, during the main program of AIMBE’s annual event in Washington, D.C. Vo-Dinh leads the Advanced Biomedical Science and Technology Group in the Life Sciences Division.

The Metals & Ceramics Division’s **Roger Stoller** has been named to the ASTM International board of directors for the 2004–06 term. He is chairman of the ASTM E10 Committee on Nuclear Technology and is an ASTM fellow and 1995 award of merit recipient.

Deaths

Robert T. Santoro of Kingston died March 8. He was a member of the Nuclear Material Detection and Characterization group in the Nuclear S&T division. Santoro was a fellow of the American Nuclear Society and served as a senior member of the ITER joint central team. He was an authority on radiation dose research and co-authored a handbook for spacecraft designers that estimated effects of space radiation on astronauts. Santoro was also a highly decorated military officer and a key organizer of ORNL’s Veteran’s Day observance. He was 68.

ORR nature walk series resumes with Wildflower Walk

The Oak Ridge National Environmental Research Park nature walks continue at 2 p.m. Sunday, March 28, with a wildflower walk—the second in the series that runs through May. The three-hour walk will cover almost two miles and will be up and down a hill with a short off-trail along the reservation’s north boundary greenway, including bluffs along Poplar Creek. Larry Pounds of the Environmental Sciences Division will be the guide.

The walk is limited to 25 people, and children are welcome. Walkers should dress comfortably in layers, wear sturdy shoes and bring along a water supply and insect repellent.

Pre-registration is necessary and should be completed by Friday, March 25. Reservations may be made by calling Lissa Clarke of the American Museum of Science and Energy, 865/576-3218.

Participants should meet at 2 p.m. at the guardhouse along Oak Ridge Turnpike on the west end of town. If inclement weather forces postponement of the walk, it will be announced on ORNL’s Work and Weather Information line, 865/574-9836, by 1 p.m. that day.

Other spring walks scheduled are bird walks at 7 a.m. Saturday, April 24;



Neil Giffen of ORNL’s Environmental Sciences Division stands in front of the Freels Bend Cabin during a discussion of birds found in the area. Giffen is coordinating this spring’s nature walks in the Oak Ridge Environmental Research Park.

Saturday, May 1; and Saturday, May 8. A floodplain walk is planned at 5 p.m. Tuesday, May 4. More information is available by calling Clarke at AMSE. [ornl](#)

ORNL earns four tech transfer awards

ORNL will receive four of the 24 awards to be presented in May for outstanding work in the process of transferring a technology to the commercial marketplace.

The awards will be presented at the Federal Laboratory Consortium meeting in San Diego. The FLC is composed of 711 federal laboratories and facilities representing approximately 100,000 scientists and engineers. The awards recognize federal laboratory employees who have accomplished outstanding work in the process of transferring a technology to the commercial marketplace.

“These outstanding scientific achievements by ORNL staff members not only benefit the nation’s economy through creation of marketable products, but they also represent the world-class scientific research that is contributing to the nation’s security,” said Energy Secretary Spencer Abraham.

The Excellence In Technology Transfer awards are for robust wireless technologies for extreme environment communications, thin-film rechargeable lithium batteries, microcantilever-based biosensors and lab-on-a-chip.

“These awards are a tribute to the work of many dedicated researchers at ORNL whose contributions are paving the way for a bright future in the areas of science and technology,” said ORNL Director Jeff Wadsworth.

Robust wireless technologies for extreme-environment communications allows for the deployment of highly reliable, low-power communications devices to operate in harsh physical and atmospheric environments.

ORNL researchers recognized for this work are Stephen Smith, Gregory Hanson, Michael

Moore, John Jones Jr., Roberto Lenarduzzi, Michael Emery, Gary Turner, Nance Ericson, Timothy McKnight, James Hylton, James Moore, Alan Wintenberg, William Dress, Paul Ewing and Grady Vanderhoofven.

Thin-film rechargeable lithium batteries are less than 10 micrometers thick and when fully integrated with a device have energy and power densities surpassing other battery technologies. They can be recycled thousands of times and can be fabricated on a variety of substrates and devices in arbitrary shapes and to any size to meet specific application requirements.

ORNL researchers working on the project are Nancy Dudney and Ashok Choudhury.

Microcantilever-based biosensors can be used in the diagnosis of disease, cancer and cardiac markers; high throughput drug screening; and exposure to chemical and bio-warfare agents.

Researchers from ORNL working on this project are Thomas Thundat, Zhiyu (Jerry) Hu and Russ Miller.

The lab-on-a-chip is a microfabricated device that performs chemical and biochemical procedures under computer control, using miniscule quantities of samples to be analyzed.

Researchers working on this technology are Michael Ramsey, Stephen Jacobson, Roswitha Ramsey, Ashok Choudhury and Michael R. Knapp.

ORNL earned five awards from the Southeastern FLC last fall. That organization is composed of 40 federal laboratories in a nine-state region of the Southeastern United States. [ornl](#)

ORNL, Battelle garner environmental awards

Battelle and ORNL are being recognized for their commitment to environmental awareness with three awards from DOE.

DOE’s Office of Science is presenting its “Best-in-Class Pollution Prevention and Environmental Stewardship Award” to Battelle for its corporate commitment to environmental stewardship at ORNL, Brookhaven National Laboratory and Pacific Northwest National Laboratory. All three Battelle-operated laboratories have established environmental management systems that go beyond the international environmental standard, ISO 14001. The ORNL EMS goes beyond the requirements in the ISO 14001 standard by placing additional emphasis on full environmental compliance, pollution prevention, and effective and focused communication and community outreach.

ORNL also will receive two achievement awards for pollution prevention and environmental stewardship, one for wastewater reduction activities and a second for integrat-

ing environmental sustainability principles into activities at the Laboratory. The wastewater-reduction initiatives have eliminated more than 190,000 gallons of wastewater per year, saving more than \$4,000 and decreasing the potential for leaks.

The second achievement award recognizes ORNL’s incorporation of environmental sustainability principles into all areas of operation, including the use of biobased-fuel vehicles, a comprehensive energy management program and the use of “green” construction in five new Laboratory facilities.

ORNL plans to become registered to the ISO 14001 standard this year through a certified auditor independent of both Battelle and DOE. “Registration by a third party will provide validity and credibility and help ensure that the system is sustainable and continually improving,” said Kelly Beierschmitt, director of Environmental, Safety, Health & Quality. “It’s not just us saying we have an effective environmental management system.” [ornl](#)

New Staff Members

ORNL is growing. This feature lists new employees at the Lab. Welcome all.

Janel Ellison, Audit and Assessment
David Elmore, Victor Graves Jr., Matthew Reasor and Stanley Taylor, Craft Resources
Dawn Stanek, Environmental Sciences
Joan Lawson and Gina Utley, Health Services
Ann Bryant, Integrated Operations Support
Govindarajan Muralidharan and Jun Qu, Metals & Ceramics
Wesley Bicha, Natalie Crippen, Penny Hosford, Dorothy Hudson, Jon Kreykes, Alan Liby, Lisa Loden, Michael McKeown, Janis Mooney, Joy Nix, Diane Oliver, James Snider, Duane Starr and James Sumner, National Security Directorate
Michael Pierce and Allen Smith, Nonreactor Nuclear Facilities
Brent McGinnis and Sara Pozzi, Nuclear Science & Technology
Albert Flori, Quality Services
Jerry Cantu, Richard DeCosta, Alan Long and William Walls, Research Reactors
Bonnie Lang, SNS Accelerator Systems
Mark Hagen and Tammy McHargue, SNS Experimental Facilities

Service Anniversaries

35 years: Sylvester Cook, Metals & Ceramics; Judith Miller, Operational Safety Services

30 years: Carl Hooks and Carol Leffew, Business & Information Services Directorate; Della Elliott, Manuel Gillispie and Virginia Wright, Communications & Community Outreach Directorate; Alice Chatman, Horace Pratt and Stephen Thomas, Craft Resources; Phillip Childs, Engineering Science & Technology; David Johnson, Vinod Sikka and George Stocks, Metals & Ceramics; Pamela Fleming, Solid State

25 years: John Keller, Chemical Sciences; Terry Bass and Bob Phipps, Craft Resources; Benjamin McConnell, Engineering Science & Technology; David Rupert, Human Resources Directorate; Waldean Richardson, Life Sciences; Jessie Wells, Logistical Services; James Shelton, Metals & Ceramics; David Vandergriff, SNS Experimental Facilities

20 years: Jeanne Dole, Communications & Community Outreach Directorate; Danny Craze, Craft Resources; J. Michael MacDonald, Engineering Science & Technology; Jon Kreykes, National Security Directorate; Donald Butler Jr., Office of Counterintelligence

Team UT-Battelle

Community service opportunities for Lab volunteers blossom in spring

Springtime usually brings an upsurge in ways to serve the community through Team UT-Battelle, and 2004 is no exception.

You can join with other Team UT-Battelle volunteers to help reduce blindness, amputations and early deaths caused by diabetes. Just sign up to help with or participate in the **American Diabetes Association's 2004 Tour de Cure**.

Volunteers are needed to distribute refreshments at rest stops or at the finish line on either

accommodations are provided to cyclists.

Each cyclist is required to raise a minimum of \$150 in pledges to participate.

Your participation will raise money to help the 16 million Americans with diabetes and to fund research for a cure. To volunteer or join Team UT-Battelle's team, contact Angela Harris (harrisad@ornl.gov), Tim Jones (jonestk@ornl.gov) or Bruce Siefken (siefkenbf@ornl.gov).

Roberta Grafton, Energy and Engineering Sciences Directorate, reports that she recently turned in a dozen cell phones and various miscellaneous supplies for these phones, which were donated by ORNL employees, to Verizon Wireless on Parkside Drive in Knoxville. The folks at Verizon estimated the value of the donation to be about \$420. This money will go to Verizon's **HopeLine Phone Recycling Program**, which collects previously owned phones and recycles, refurbishes or sells them, in order to assist victims in emergency domestic violence situations. The program also provides financial grants to national and regional

domestic violence organizations and advocacy groups, such as the Family Violence Prevention Fund and the National Coalition Against Domestic Violence.

Team UT-Battelle supports this outreach endeavor. Any donated phones or other equipment should be sent to Roberta Grafton, 4500N, MS-6248, or call her with questions at 574-6058. (All phones donated must be employees' personal phones. Any used UT-Battelle/ORNL cell phones must be turned in

to ORNL Salvage.)

If you have your own worthy project that needs volunteer support, you can **submit the idea for consideration as a Team UT-Battelle project**. The team supplies advice, assistance and organizational support (and t-shirts) to organized volunteer ORNL groups involved in worthwhile community causes. The only restrictions are that it not be related to a religious or political cause. A general expectation is that a potential team leader will be designated to coordinate the activity.

Project nomination forms are available on the Communications and Community Outreach web page [<http://www.ornl.gov/info/news/cco/teamutb.html>]. You also can contact Brenda Hackworth, 241-7249, or Bill Pardue, 220-5101. [ornl](#)

State of the Lab address set for April 1 at AMSE

ORNL Director Jeff Wadsworth will deliver his first State of the Laboratory address at 7:30 p.m. Thursday, April 1, in the main auditorium at the American Museum of Science and Energy in Oak Ridge.

Wadsworth, who assumed the position of laboratory director in August, will discuss accomplishments at ORNL during the past year and look ahead to future plans. He also will address questions from the audience.

Wadsworth's talk is part of the 2004 Community Lecture Series sponsored by the Friends of ORNL. A reception will follow in the AMSE lobby. The public is invited to the lecture and reception. [ornl](#)

Number 56 March 2004

[Global climate models](#), page 1

[Future scientists here](#), page 1

[Retiree volunteer](#), page 1

[Lab Notes: Babies, bubbles, boots, coffee](#), page 3

[Liu joins academy, Kohrt visits ORHS](#), page 4

[CFW's decade](#), page 5

[Nature walks resume](#), page 6



Curtis Boles

Team UT-Battelle volunteers joined Atomic Trades and Labor Council volunteers in a Habitat for Humanity project in 2003.

Saturday, May 15, or Sunday, May 16. Or you can sign up as a participant on ORNL's Team UT-Battelle team to ride your bicycle as far as you can on the 150-mile, two-day, round-trip tour from Oak Ridge to the Cumberland Gap.

This is a ride, not a race, and cyclists of all abilities are welcome. You are not required to cycle the entire distance. Support and gear vehicles can pick you up when you are done and take you to the finish line. Meals, rest stops every 8 to 10 miles and overnight

ornl reporter

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