

## 'On to exaflops'

### 15 years after ORNL got serious about scientific computing, Lab is setting the pace

ORNL's Jaguar supercomputer passed the 100-teraflops mark in early April. Not too many years ago that performance power milestone would have been like achieving computing nirvana.

Now it's just a step along the way to the current target—250 teraflops, or 250 trillion floating point operations per second, which could be in service at the Leadership Computing Facility by the end of the year.

The new goals are petaflops, or quadrillions of floating point operations per second, or even exaflops, a quintillion.

In 1992 100 teraflops seemed inconceivable. In fact, 15 years ago this month

and the Oak Ridge Automatic Computer and Logistical Engine, which was based on a system pioneered by the mathematician John von Neumann. ORACLE was used for the difficult calculations needed for projects such as the nuclear airplane project and radiation and shielding research.

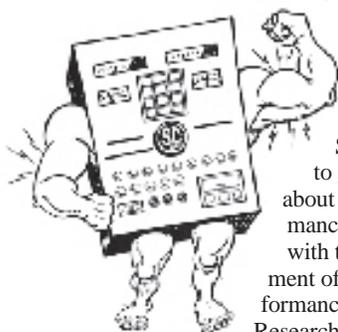
Computing eventually gravitated to the realm of business system mainframes, which remained fairly content with the status quo's incremental performance advances.

In the late 1980s ORNL's biggest computer was a Cray actually located at the East Tennessee Technological Park, or K-25. Buddy Bland, now the director of ORNL's Center for Computational Sciences, managed that Cray. "We purchased the 100-megaflops Cray in February 1985. It was our first big scientific machine for general use," Buddy says. In the early 1990s Lab Director Al Trivelpiece and Oliver directly supported the Cray, which brought more users.

In 1991 DOE issued a call for proposals for a High Performance Computing and Communications program. ORNL joined with three other national labs and seven universities to propose a "Partnership in Computational Science." The proposal led to the establishment of the Lab's Center for Computational Sciences, one of two under the HPCC program.

Advances in microprocessor technology fueled the development of computers.

In 1995, with great



"Supercomputer," circa 1992

ORNL and DOE's Office of Energy Research (now the Office of Science) decided to get serious about high-performance computing with the establishment of the High Performance Computing Research Center.

At the time, Ed Oliver, who headed the Lab's Office of Laboratory Computing, said that ORNL computing was emerging from an era of "slim pickings." The Laboratory had once been a leader in computational research thanks to mathematician Alston Householder



ORNL's Cray XT4: 119 teraflops, more to come.

fanfare, ORNL cut the ribbon on one of the results: a brand-new supercomputer called the Intel Paragon XP/S, a 150-gigaflops powerhouse located in Building 4500-North.

"For a brief moment we had the fastest computer in the world," Buddy says.

(See COMPUTER, page 4)



Ron and Darlene Bounds

## Couple makes most of Wellness Program to lose most

If you're wondering whether the plethora of wellness programs that have cropped up at ORNL in the past few years are making a difference, look no further than Darlene and Ron Bounds.

Between them, they've lost approximately 130 pounds. Most of the success is Darlene's, who has shed more than 90 pounds since she entered the Weight Watchers program and began using ORNL's Fitness Center last July.

"It has made a 100-percent difference in my life," she says.

Darlene works in Health Services as a Facilities & Operations Craft Resources support person. Her husband, Ron, also of Craft Resources, has lost around 30 pounds since his wife went on her diet.

She says it's because he has to eat what she fixes. Ron says he's no victim.

"I went along with it. I needed to lose some too," he says. "I support her and she supports me."

Mutual support has likely played a prominent role, and the Bounds have been successful by any measure. Darlene says she not only feels better but does her job better. Losing the weight has made a tremendous difference in how she feels and what she is able to do.

"I used to dread having to walk to the other end of the building. I had 90 more pounds to carry around, and I dreaded it," she says.

"Now I just zip there and back."

(See WELLNESS, page 2)

# Wellness

Continued from page 1

She also zips around the ORNL Fitness Center treadmill, which has complemented her new diet with exercise.

Darlene is also having more fun. She accompanied the Club ORNL group on the 17-mile Virginia Creeper bike ride and the trip to the Keeneland horse races.

"I would have never done that before," she says.

She walked off with first prize in the Wellness Program's "Santaclaustrophobia" campaign over the holidays, which was aimed at helping people limit weight gain over the holidays.

Darlene lost 21 pounds.

The Bounds are taking advantage of some of the social and wellness initiatives that began after employee surveys conducted shortly after UT-Battelle arrived in 2000 indicated that they would be positively received by staff members. The ORNL Fitness Center was the first wellness-oriented facility, opening in February 2002.

The fitness centers in Building 4500-South and at the Spallation Neutron Source are popular, with nearly 3,000 staff members who have taken the training requirement to use the equipment. Laboratory Protection also has a fitness room at the fire hall. None of the equipment is gathering cobwebs.

ORNL's Weight Watchers group, which has been meeting at the Lab for a decade, averages 20 to 30 participants. Darlene says the plan has worked for her when a liquid diet didn't because it isn't a drastic departure from normal nutrition.

"You can eat a normal portion, but you have to keep count of what you take in," she says.

Dieters frequently fail at keeping the weight off once they've lost it. Darlene, who hasn't replaced her old oversized wardrobe because she intends to keep losing, knows that keeping at her new weight will require keeping to the new lifestyle.

"I'll do anything the Wellness Program has to help me stay on track," she says.—B.C.

## Maintain a healthy lifestyle: Activities, facilities keep wellness at the forefront

ORNL's Wellness Program has a number of ongoing events and activities to help Lab staff members adopt and maintain healthier lifestyles. For more information, contact wellness coordinator Joan Lawson, 576-9120, lawsonjw@ornl.gov.

### Continuous activities

ESH&Q Director Karen Downer leads a *Wellness Walk* on Tuesdays and Thursdays. Walkers meet at 11 a.m. at Building 4500-North's Flagpole Lobby.

*Weight Watchers-at-Work* meet at 11:30 a.m. Wednesdays in Room 246, Building 4500-North. Contact Gayle Jones, 574-2496, jonesjg2@ornl.gov.

The *ORNL Fitness Center*, open 24/7, has facilities in Building 4500-South and at the Spallation Neutron Source.

The *Mayo Clinic Wellness Website* (<https://secure.mayoclinic.com>) has tons of health and wellness information and access to the world's leading wellness experts.

### Annual activities

*Covenant Health Marathon Events*—these March and April yearly events encourage employees to participate in the Fittest Company Challenge marathon, half-marathon, 5K and marathon relay to attain a higher level of fitness.

*HealthFest Month*—During the month of May the ORNL Wellness Program sponsors various activities such as 10K and 5K runs, walks, bike rides and numerous group fitness classes to celebrate National Employee Health and Fitness Day.

*Santaclaustrophobia* is the fear of looking like Santa Clause after the holidays. The Wellness Program offers a simple weight management program.

*October's Benefits and Wellness Fair* offers

numerous health screenings and provides various wellness educational booths.

*Health Risk Assessment*, a tool created by Mayo Clinic experts, assesses health risk factors based on current medical guidelines. Participants receive a Personal Health Report that explains any health risk factors and identifies things they can do to reduce their number of health risks.

### Monthly activities and events

The 2007 ORNL *Health and Wellness Seminar Series* offers staff the opportunity to learn about a wide variety of health issues and conditions. Conveniently held on-location at the Laboratory, the goals of the program are to educate ORNL staff about ways to stay healthy, prevent disease and illness through early identification of health problems via screenings and lower health care costs for ORNL and our employees.

Each month focuses on a different health topic. Seminars, screenings and other events bring medical experts, clinics and other professionals to the Lab, at no cost to staff.

### One-time activities and events

The *Colorful Choices* program encourages eating more fruits and vegetables. Weekly e-mails and nutritional quizzes keeps the participants motivated and give lots of ideas and tips. A nutritionist conducts seminars on healthy eating, and other activities are planned, as well.

The American Cancer Society's *NuPa Study* encourages physical activity and nutritious eating habits

*Tennessee on the Move* encourages more physical activity and reduction in caloric intake.

*Walk to Wellness* is a 28-day Mayo Clinic walking program to encourage the sedentary population to become physically active.



Nice day for a stroll: Walkers kick off HealthFest on May 1.

## Reporter

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# Lab Notes

## REDC lands fuel reprocessing demo

The Radiochemical Engineering Development Center's hot-cell manipulator room isn't the most typical place to have a luncheon, but these aren't typical times for REDC, whose staff members celebrated a big win on April 26.

The nuclear materials processing facility at the High Flux Isotope Reactor site has been announced as the site of a coupled end-to-end demonstration of commercial nuclear fuel reprocessing technology. This means that REDC has won the program to demonstrate how the nation's stocks of spent reactor fuel can be reprocessed for permanent storage or



**REDC staff celebrate their newly won fuel reprocessing demonstration project in the hot-cell manipulator room, which Lab Director Jeff Wadsworth described as "the most unusual place I have ever had lunch."**

transmuted into fuel for "burner reactors," key elements of the Global Nuclear Energy Project plan to both deal with nuclear waste storage and set a path toward safe and efficient nuclear power production.

"This puts REDC on the very ground floor of closing the nuclear fuel cycle," says Nuclear Operations Director Kelly Beierschmitt.

Lab Director Jeff Wadsworth, citing the Lab's nuclear heritage, told the assembly that REDC proved that it had the "people, the

reputation, and facilities and the history" to demonstrate the technologies that could very well jump-start re-establishing nuclear power as a critically needed energy alternative.

The demonstration, funded by DOE's Office of Nuclear Energy, will be a multiyear, multimillion-dollar program for ORNL.

## Not quite Bug Tussle

April's *Nano Nexus* conference at ORNL turned out to be an informative success for both researchers and venture capital representatives. Communications' Mike Bradley recalls a conversation he had with Doug Jamison, president of New York-based Harris & Harris.

The night before the event, Jamison and John Chen, senior associate at Battery Ventures in Menlo Park, Calif., were discussing their doubts about whether the trip to East Tennessee was worth their time. Specifically, they wondered if the Spallation Neutron Source merited all the acclaim they had heard.

"There's always some skepticism when we leave New York or Silicon Valley," said Jamison. "So we headed down south with a bit of hubris.

"John's father (Sow-Hsin Chen) is a renowned researcher at MIT. So John said 'If the SNS was really the premier place to be, my father would be the first one to use it,'" Jamison said.

At Jamison's suggestion, Chen cell-phoned his dad to tell him he was in Oak Ridge, just to see if he got any reaction. He did.

"His father said, 'Oh, yes, and I'm first in line to use the Spallation Neutron Source. Researchers around the world are very excited by it,'" Jamison told Mike.

## Earth Day: Research makes a difference

Since Earth Day fell on Sunday this year, the Laboratory celebrated it during the week

with a contest for kids, a seminar, some music, some tours and the highlight of the day: the release of native species turtles and fish into the Conference Center pond.

The turtles seem to like their new digs. The sliders can be seen lounging on the wooden structures that were placed in the pond for them. The hope is that the native-species will help control the nonnatives that persist in the pond and restore its ecological balance.

Corporate Fellow Tom Wilbanks' talk centered on environmental sustainability and the difference researchers can make. He cited one area where ORNL has made a big difference: In the 1960s, researcher Eric Hirst published a paper warning that unrestricted growth in electric power generation had the potential to harm the environment. The report was controversial and the research was attacked, but ultimately ORNL's work played an important role in forming the National Environmental Policy Act.

Tom says he was attracted to ORNL by



**No directions necessary: A just-released slider (above) makes its way to the Conference Center pond. ESD's Mike Ryon prepares a gar for its new home.**



Photos by Curtis Boles

the late Alvin Weinberg's concept of what a national laboratory is for.

"Weinberg asked, 'Who's worrying about what's good for the world?' That's what makes a national lab different," Tom observed.

*Reported by Bill Cabage*

# Computer

Continued from page 1

The Paragon had 1,024 computing nodes and 3,096 processors. The prefix *giga* means billion, so by today's standard it performed at 0.15 teraflops.

The CCS used the Paragon on "Grand Challenge" problems related to energy research, astrophysics, climate modeling and groundwater flow simulation.

Though quickly overtaken in a rapidly accelerating computing race, the Paragon was a watershed in one important aspect: It revealed to the Lab what it would take to become a major player in high-performance computing.

"ORNL had been a pioneer in massively parallel computing under Bob Ward's mathematics group [the forerunner of the Computer Science & Mathematics Division]," Buddy says. Later, AI Geist's computer science

*A key requirement with supercomputers is having a place to put them.*

research team won acclaim for the Parallel Virtue Machine, a program that enabled computers of different architectures to be linked to work on a single problem simultaneously, paving the way for massively parallel programming.

Over in the Metals & Ceramics Division, researcher Thomas Zacharia produced for the Department of Transportation the first automotive crash analysis simulations in a massively parallel environment. The work combined the forces of M&C researchers, the Paragon's operators and the ORNL garage—which helped disassemble an SUV—in an

early indication of ORNL interdisciplinary strength.

One problem the industry had to grapple with was how to handle the reams of data that began pouring out of the new computers. This had always been something of a challenge; now information threatened to swamp the industry. Working in a large partnership, ORNL helped develop the High Performance Storage System, a data storage and retrieval mechanism that is still state of the art.

A key requirement with supercomputers is having a place to put them. Their electronics use lots of power and generate lots of damaging heat, requiring a huge infrastructure. Building 4500-North was barely adequate for the Paragon. The machines truly needed to have homes specially built for them.

"We discussed putting a new facility between wings 4 and 5 of 4500-North, and there were plans for a new building in the flagpole lot," Buddy recalls. "None of these was really the answer."

The turning point in ORNL computing, Buddy says, was UT-Battelle's modernization campaign. The new contractor arrived at ORNL in 2000, the same year ORNL started up IBM's Eagle, the Lab's first machine to break the one teraflops barrier. Eagle and GRAIL, the Gene Recognition and Analysis Internet Link developed at ORNL, played a significant role in the success of the Human Genome Project.

By now scientific computing was evolving into what DOE's Under Secretary for Science, Ray Orbach, was terming a "third leg of science." Researchers were taking advantage of the new computing power to break through the barriers of what time and resources simply didn't allow with older, slower technology. With data- and variable-intensive problems such as climate modeling or simulating the performance of new nuclear weapon designs, science was driving the development of massively parallel computing.

UT-Battelle's modernization campaign included a computational sciences component of the privately funded buildings, which included large bays for computers with the necessary cooling and electricity infrastructure.

At the same time as the modernization plans were kicking off, Orbach, then director of the Office of Science, held a workshop to discuss the news that Japan had completed the 35-teraflops Earth Simulator. The United States had lost the lead in the now key area of high-performance computing, a situation he termed "potentially grave."

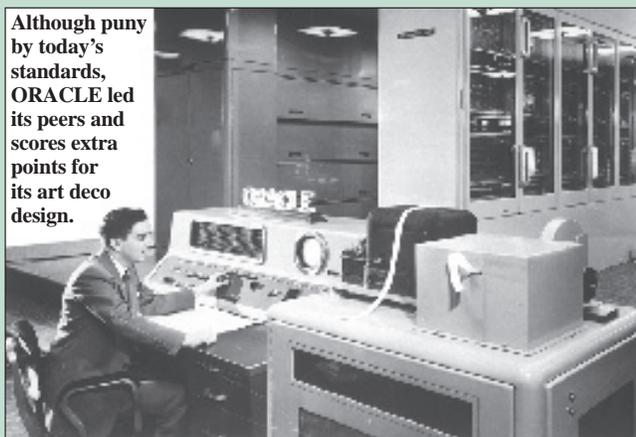
By the time of Orbach's wake-up call, Zacharia, the crash-test modeler, was leading the Lab's Computing and Computational Sciences Directorate.



**Buddy Bland and an early version of the Intel Paragon in 1992. Buddy has been eyewitness to the incredible pace of scientific computing's advancement.**

## ORACLE vs. Jaguar: The eight-hour day

Although puny by today's standards, ORACLE led its peers and scores extra points for its art deco design.



ORNL's first big computer, the Oak Ridge Automatic Computer and Logistical Engine, was the best of its kind in its time, which was the 1950s. It could do 100 man-years of computing in eight hours.

We asked Bronson Messer, a computational scientist specializing in astrophysics, how that compares with the Cray XT4 Jaguar.

"Hmmm," responds Bronson. "The simplest thing to do is to think that statistic for ORACLE was based on a man [or woman] doing a calculation every second. If you multiply that out, ORACLE did about 100,000 operations a second. That's 100 kFLOPS, but not really, as ORACLE was a fixed-point machine and couldn't do floating point operations.

"Jaguar now does 119 teraflops:  $119 \times 10^{12} / 100 \times 10^3 \sim 10^9$ , i.e. a billion times faster. So, the translation might be: Jaguar can do 100 billion man-years of computing in eight hours."

Bronson also provides an astronomical angle: "There are about 100 billion galaxies visible to us right now in the observable universe. So, if you had one person in each galaxy in the observable universe computing for a year, Jaguar would beat them to an answer by day two."

“The major supercomputing milestone for ORNL was in 2003 with the Computational Sciences Building,” Buddy says. [ORNL Director Bill] Madia and Thomas had the foresight to gamble on building that facility.”

ORNL’s growing computing group moved into the Computational Sciences Building in the summer of 2003 along with its big machines, which now included Cheetah, a 4.5-teraflop



ORNL’s newsletter described the Lab’s re-entry into scientific computing in the May 1992 issue,

machine with half its time going to climate change modeling, and Phoenix, an 18.5-teraflops vector Cray X1E.

The new facility provided a key advantage in a furious competition for the Leadership Computing Facility, the Office of Science’s program to provide the world’s most powerful supercomputing facilities for Grand Challenge open scientific modeling and simulation. In May 2004 ORNL was announced as the facility that would in a few years house the world’s largest supercomputer.

In 2005, with the heft of the Leadership Computing Facility designation, ORNL’s partnership with Cray rounded out what is now the National Center for Computational Science’s menagerie with Jaguar, the Lab’s flagship supercomputer. The Cray XT3 at just over 50 teraflops restored ORNL to the top ten in supercomputing. In late 2006 components arrived to begin upgrading Jaguar past the once magic 100-teraflops milestone.

In late March, almost exactly 15 years after ORNL resolved to become a leader in supercomputing, the current Cray XT4’s 119 teraflops puts Jaguar in the vanguard.

“With ensuing upgrades, by early 2008 the Center for Computational Sciences’ Leadership Computing Facility will provide the research community with its most powerful supercomputer, at around 250 teraflops, and in early 2009 we will deliver a one-petaflops computer,” Buddy says.

“Then it’s on to exaflops.”—B.C. 🍀

ORNL Reporter

## Snijders latest Wigner fellow

Paul Snijders is the most recent recipient of ORNL’s Eugene P. Wigner Fellowship. The fellowships are two-year postdoctoral appointments, named for the Nobel laureate who was ORNL’s first science director.

Paul received his Ph.D in 2006 in low dimensional condensed matter systems from the Kavli Institute of Nanosci-



Snijders

ence, Delft University of Technology, The Netherlands. As a student, Paul was a 2006 recipient of the Wayne B. Nottingham Prize at the Physical Electronics Conference.

In the Low-Dimensional Materials Physics group in the Materials Science & Technology Division, his work with John Wendelken will focus on spin-order in highly correlated electron systems at surfaces using state-of-the-art scanning probe techniques.

Outside of work, Paul, who is originally from The Netherlands, enjoys photography and riding motorcycles. 🍀

## Bonnett leads Concerns Program

Steven Bonnett has been appointed coordinator of ORNL’s Concerns Program, effective May 1. The Concerns Program is a rotational assignment within the Audit & Oversight Directorate, reporting to Scott Branham.

In addition to the coordinator role, Steven will continue to perform audits and other assessments. He can be



Bonnett

reached at 241-2255, bonnettsb@ornl.gov.

Steven brings more than 15 years of business operational experience from ALCOA and Ford Motor Company. He holds a bachelor of science in statistics and a master’s degree in industrial engineering from the University of Tennessee and an M.B.A. from Auburn University.

Cindy Kendrick, who has led the Concerns Program for the past three years, joins the Technology Transfer and Economic Development Directorate providing assistance to the user facilities program. 🍀

## Reporting fraud, waste and abuse

UT-Battelle is committed to performing its business activities with the highest standards of integrity, honesty and professional competency. As a UT-Battelle employee, you play an important role in our commitment to maintaining the highest business standards through your individual commitment to excellence.

Further, you have the responsibility to provide notice of inappropriate activities which threaten our joint dedication to integrity in the workplace and which may prevent us from meeting the expectations of DOE and our other customers.

For work done under the DOE contract, UT-Battelle employees have a number of options for expressing their concerns about activities they may view as inappropriate on the job. Any employee with information about alleged fraud, waste, abuse, corruption or mismanagement relating to DOE programs, operations, funds or contracts may provide information directly to the following.

- Line management
- Scott Branham, director of the Audit

and Oversight Directorate (241-7614) or [http://home.ornl.gov/directorates/audit\\_assessment/form\\_fraud.shtml](http://home.ornl.gov/directorates/audit_assessment/form_fraud.shtml)

- Steven Bonnett, Staff Concerns Coordinator (241-2255) or [http://home.ornl.gov/programs/employee\\_concerns/](http://home.ornl.gov/programs/employee_concerns/)
- The Office of Inspector General (IG), 1-800-541-1625. The toll-free hotline number is operated 24 hours a day to permit immediate access by any employee.

All such disclosures may be made without fear of employer reprisal. Employees are also free to refuse to engage in illegal or dangerous activities which the employee believes to be unsafe; to violate laws, rules or regulations; or to involve fraud, mismanagement, waste or abuse.

Also, it is important that all employees work cooperatively with internal and external auditors and investigators.

Scott Branham, Director  
Audit and Oversight Directorate

# Significant Event Awards laud outstanding efforts

Significant Event Awards were distributed recently to staff members for their outstanding accomplishments in research and operations. Congratulations to all.

## Biology and Environmental Sciences

Sequencing the first tree genome: For scientific and technical leadership provided during a five-year period leading up to the DOE-sponsored sequencing of the first tree genome (*Populus*); the assembly and annotation of that genome; and the September 2006 publication of those results in the prestigious journal *Science*: Gerald A. Tuskan, Udaya Kalluri, Lee Gunter, Tongming Yin and Edward C. Uberbacher

Setup and operation of multi-species chemostat: Tommy Joe Phelps, Steven David Brown, Dawn Marie Klingeman, Sue Carroll, Lisa Anne Fagan and Steven Cline

Dover Air Force Base team: Aleisa C. Bloom, George Delong, William Ahlers, Jeanette Jenkins and Stacey Johnson

## Computing and Computational Sciences

National Recognition of ORNL Staff in Educating and Training Oak Ridge High School Students: Nagiza Samatova

Supercomputing 2006 (SC06): Sean Ahern, Jamison Daniel, Betsy Riley, Timothy Jones and Dami Rich

Creation of infrastructure to support Defense in Depth initiative: Carlos Wade Cunningham, Brian Wallace, Danny Walls, James Rhyne, Brett Ellis, James Trater, Steve Parham and Doug Smelcer

Risk Analysis Software Calculator (RAS-CAL): Pamela Ratledge, Andrea Sjoreen, Sarah Kathleen Fischer, Richard Goldfinger and Kristopher Daley

## Energy and Engineering Sciences

Providing Ford Motor Company with unique insights to mitigate a critical product development barrier: Scott Sluder, John Morse Storey and Samuel Arthur Lewis Sr.

Design, construction, and pre-testing of HFIR Cold Source heater test assembly: Dennis Wayne Heatherly and James D. Freels

RFID Accountability System: Gregory R. Hanson, J.P. Jones Jr. and Angela Kay Sexton

Development of a revolutionary 3-D plasma equilibrium that will provide the ability to optimize the operational performance of ITER and to improve the performance of future fusion reactor designs: Steven Paul Hirshman and Raul Sanchez

Recent repatriation of highly enriched uranium from Germany to Russia in the Russian Research Reactor Fuel Return Program within DOE's Office of Global Threat Reduction: Stanley D. Moses

Contributions to a proposal that led to the

awarding of 2.5 million processor hours on the National Leadership Computing Facility: Donald B. Batchelor and Erwin Frederick Jaeger

Completion of an operational assessment of the safeguards and security needs of the Nuclear Energy Regulatory Agency of the Republic of Indonesia: Jacqueline L. Shipwash

Successfully providing an inventory reestablishment workshop for Iraqi team: Scarlett Clark, Susan Jennings and Donna Sneed

## Neutron Sciences

The world's first demonstration of efficient laser-stripping points the way to higher-power spallation neutron sources: Warren Grice, Alexander Aleksandrov, Viatcheslav Danilov, Yun Liu, Saeed Assadi, Willem Blokland, Craig Deibele, Jeffrey Holmes, Andrei Shishlo, Anthony Webster and David Brown

SNS recovery from critical target component failure without delaying operations: Mark Rennich, Peter Rosenblad, Joe DeVore, David Sparks, David Christopher Dunning, Robert Sangrey and David Alan Craft

## Physical Sciences

Achievement of proof of principle for 3D in-situ imaging in water: Niels De Jonge

Self-sustained tag for tagging and tracking initiatives involving high-valued assets and positive combat identification: Linda Lewis, David Glasgow, Robert Smithwick III, Lynn Boatner, Stephen Allison, Joanne Oxendine Ramey, Jim Kiggans and James Bogard

HRIBF High-Power Target Laboratory design: Darryl Dowling, Raymond Juras, Martha Meigs, Gerald Mills, John William Sinclair, Daniel Stracener and Brian Alan Tatum

Development of alumina-forming stainless steels: Michael Brady, Zhao Ping Lu, Philip Maziasz and Bruce Pint

## Business & Information Services

Conference travel approval process: Kathy Davis, Greg Gruzalski, Gail Calloway, Susan Perkins, Connie Begovich, Dionne Harper and Regina Ford

## Communications and External Relations

Proposal for the Computing and Computational Sciences and Biology and Environmental Sciences directorates: Jeanne Dole, Deborah Counce, Brenda Phillips, Brett Hopwood

## Environment, Safety, Health & Quality

10 CFR 851 regulation implementation: Sharon Kohler, Douglas Freels, Michael McIntosh, Kim Jeskie, Debbie Jenkins, Deb-

orah Sumner and Crystal A. Schrof

Elimination of facility hazard categorization deficiencies for ORNL interim status radiological facilities: Lisa Jeanne Bowie, Timothy Gillespie, John Scircle, Brian Sparks, Richard Utrera and William Wolfe  
Quality Improvement Initiative: Steve F. Alvanas

NPDES data management and analytical cost savings and efficiencies: Regis Loffman, Dolores Getsi Hight, Joan F. Hughes, Robert Anderson, Rick Dailey and Steve Lewis

Development and implementation of Ambient Air HF Sampling Program: Timothy W. Beatty, Mark Travis Carr

Response to hazardous materials spill incidents: Jack Adams, Albert Lynn Herrell, Mark Alan Johnson, Richard Everett Peden Jr., Robert Herrell, L.C. Wilson Jr., Dennis Eugene Rice and Stan Heath

## Nuclear Operations

Californium source production: Robert Ross McMahon, Scott White, Edward Hamilton Smith, Tony Dyer and Kevin Felker

## Facilities & Operations

Completion of the new TVA substation at ORNL and successful transition of the ORNL electrical distribution system from existing electrical substation to the new TVA substation: Donald L. Garrett, Lynn Degenhardt, Richard Haun, Charles Bruce, Bill K. Needham Jr., Buddy Johnson Jr., C.J. Josaphat and David Jeremy French

Significant reduction in Facilities Development Division construction injuries over 30 months; over one full year (17 months) without a recordable injury on FDD-managed (non-SNS) construction work: Douglass Gregory Rowland, J. Robert Ihle and Wayne Underwood

Replacement of F&O Electronic Work Management System: Cheryl Shanklin, Michael Pung, Sandy Odom, Kenda Norris Evans, Letitia Lewis and James Edward Lee

Receiving Office activities for FY 2006 Year-end: Marie Stooksbury

Demonstration of CCA expertise: Leslie Wilkerson and Jacqueline Williams

## Human Resources

Automating the termination and leave of absence process: Becky Parks, Lynne Harrison, Janice Ishee, David Rupert and David Broughton

## Legal

Aggressive settlement of workers' compensation cases: Robin King, Alan Parker, Scott McIntyre, and Melissa Lawson

## Coming up: Smokies, rafting, Titans

**May 23, Car & Motorcycle Show.** On-line registration for this event began on April 23. In addition to the 47 slots available for vintage autos, Club ORNL has added spaces for 25 vintage motorcycles. Prime viewing times will be between 11 a.m. and 1 p.m., when owners will be with their vehicles and available to answer questions. A free bag lunch will be available for attendees. Retirees who do not have access to the on-line sign up can contact Liyuan Liang (liangl@ornl.gov, 241-3933), or Peg Tinnel (tinnelpj@ornl.gov, 574-7851).

### Club ORNL Sneak Peek

**June 15.** Club ORNL Annual Futbol Game

**June 23.** River Rafting (day trip)

**June 30.** ORNL Night at Oak Ridge Playhouse

**July 14.** Smokies Baseball

**August 23.** Concert on Main Street

**December 9. Tennessee Titans vs San Diego Chargers.** A Club

ORNL sponsored Tennessee Titans football game and titanic tailgate party, noon, Sunday, December 9, 2007, at Nashville's LP Stadium. Ticket registration began in April at the ORNL Credit Union's on-site branch. Participants will travel by chartered motor coach to Nashville. Cost is \$70 per person – limit of two tickets per person. Full payment due when you register. Price includes transportation, tickets (upper deck/corner), private Zone tent with all-you-can-eat buffet, Zone VIP.



**June 15: Some countries call it soccer.**



### Interested in the most up-to-date Club ORNL News?

Check out the club's Web page online via the ORNL home page. To gain access to the ORNL home page, one must first register in XCAMS by going to [http://www.ornl.gov/adm/clubornl\\_signup.shtml](http://www.ornl.gov/adm/clubornl_signup.shtml). After receiving your XCAMS account and Club ORNL membership, retirees can then go directly to <https://www.ornl.gov/adm/clubornl>. Nancy Gray (576-9479, graynl@ornl.gov) is Club ORNL's point of contact for retirees.

## New Staff Members

Jennifer Lynn Bownas and Ali Passian, Biosciences  
William Blake Housley, Tamara Gaye Stoutt Rogers, Richard Shane Gourley, Ronald Edward Ridener, Curtis Robin Russell and Billy Joe Stair, Craft Resources  
Stephen Mark McTeer, Michael Christofer Hoffmann and Ronald Wayne Taylor, Neutron Facilities Development  
Gernot Rother, Chemical Sciences  
Roy Edward Shearin, U.S. ITER Project  
Klaus Van Benthem, Center for Nanophase Matl's Sciences  
James Houston Rogers, National Center for Computational Sciences  
Judy Carol Burns, Information Technology Services  
Thomas Michael Evans, Nuclear Science & Technology  
Edna I. Gergel, Technology Transfer  
Larry Paul Johnson, Logistical Services  
Jonathan Dale Pelfrey and Klent Ray Pope, Research Accelerator  
Sharon Porter Ramsey, Materials Science & Technology  
Douglas E. Alred, Office of Chief Information Officer  
Leighton Coates, Sylvia Ellen McLain and Dennis Robert Rich, Neutron Scattering Science  
James Robert Gergel, Computer Science and Mathematics  
Nickolay Vladimirovich Lavrik and Christopher John Mann, Engineering Science & Technology  
Paul Bryant Pehrson, Oversight & Analysis Services  
Tracie Gaylor Curtright, Communications & External Relations Dir.  
Rodney Christopher Davis, Amber Dawn Harrison and Christie Michelle McCullough, Nuclear & Radiological Protection  
Anna Lara Huggins and Catherine Elizabeth Schwengels, Human Resources Dir.  
Steven Joseph Fernandez, Computational Sciences & Engineering

## Deaths

Barkley Eugene Batmon died Sunday, April 29, at his home in Knoxville. Gene was an electrician in Craft Resources with 36 years of service at ORNL. He was 55.

## Service Anniversaries

### May 2007

**40 years:** Kenneth E. Parks, Craft Resources

**35 years:** Kathy S. Shelton, Craft Resources; Mary Ruth Lay, Physics; Jerry A. Klein, Energy & Engineering Sciences Dir.; Michael C. Willard, Human Resources Dir.; S.W. Schwenterly, Fusion Energy

**30 years:** Suzanne A. Herron, U.S. ITER Project Office; Julia T. Luck, Materials Science and Technology; Johnny C. Brown, Lewis Franklin Futrell Jr., Kenneth Ray Rogers and Stephen Kenneth Ellis, Craft Resources; John-Paul Renier, Nuclear Science & Technology; Timothy Ray Oldham, Safety Services; Van David Baxter, Engineer-

ing Science & Technology; Wayne A. Houlberg, Fusion Energy; Becky J. Verastegui, Information Technology Services; Joseph B. Dooley, Computational Sciences & Engineering

**25 years:** James E. Radle, Steve T. Baker and David K. Felde, Nuclear Science & Technology

**20 years:** Diane Maddox, Environmental Protection & Waste Svcs; Mark B. Rogers, Information Technology Services; Patrick H. Worley, Computer Science and Mathematics; David B. Geohegan and Donna L. Balltrip, Materials Science and Technology; Robert A. Dean, Facilities Development; J. David Snider, Nuclear Science & Technology; Debbie Lynn Smith, Business & Information Services Dir.; Kara L. Kruse, Computational Sciences & Engineering; V. Gail Beyersdorf, Communications & External Relations Dir.



OAK RIDGE NATIONAL LABORATORY

## Reporter

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## ORNL People

Lab Director Jeff Wadsworth announced ORNL winners of the President's Volunteer Service Awards, a White House initiative, at his April 30 senior staff meeting. Receiving the President's Call to Service Award for 4,000 or more hours of volunteer service were

**Gary T. Alley**, in the youth achievement category;

**James Hardy**, for healthy communities;

**Sherry E. Livengood**, for healthy communities;

**Patrick Martin**, for youth achievement, parks and open spaces and healthy communities;

**Jeffery E. Sipes**, for youth achievement, parks and open spaces and healthy communities; and

**Becky Verastegui**, for healthy communities and public safety & emergency response.

**Dan O'Connor** received the Gold Award for 500 or more hours of service. **Beverly Abele** received the Silver Award for 250-499 hours of service.



**Burchell**



**Baker**

**Tim Burchell** and **Fred Baker**, researchers in the Materials S&T Division's Carbon Materials Technology group, have been elected fellows of the American Carbon Society, which promotes interdisciplinary research and technology in the field of carbon science.

The Physics Division's **Thomas Papenbrock**, who holds a joint faculty appointment with the University of Tennessee, has received an Outstanding Junior Faculty award from DOE's Office of Science, Office of Nuclear Physics. The purpose of the program is to support the development of individual research programs of outstanding scientists early in their careers.

Among the new leaders of the U.S. Burning Plasma Organization is the Fusion Energy Division's **Nermin Uckan**, who will assume

the new position of assistant director for ITER Liaison. She will also serve as leader of the BPO's topical group on fusion engineering sciences.

In April, the conference organizing committee for the series of International Conferences on Wear of Materials decided to name the best conference poster award after Materials S&T Division staff member **Peter Blau**. Peter has attended every WOM conference since 1979 (the biannual meetings began in 1977) and has served on the conference organizing committee in a number of capacities, including general chairman for the 1997 conference. The first "Peter J. Blau Best Poster Award" will be given in 2009 in Las Vegas.

ORNL employees, more than 40 of them, participated in a rainy Covenant Health Marathon "Fittest Company Challenge" on April 15, running some 617.4 miles. The ORNL Co-ed Marathon team placed first. Congratulations to members of that team: **Mats Froberg** (3:07:41), **Nickolay Lavrik** (3:11:44) and **Laura Harvey** (5:20:23); total time, 11:39:48. The ORNL Co-ed Half-Marathon team came in third. Team members were **Jeff Christian** (1:34), **Charles Ramsey** (1:47), and **Joan Lawson** (2:29); total time, 5:51.