

Light the way

ORNL-inspired collaboration provides public housing with durable, efficient lighting

Collaboration among ORNL, Auburn University and several private companies literally is lighting the way for those who live in public housing projects. ORNL has played a major role in initiating a DOE project to develop energy efficient lighting systems that are resistant to vandalism and theft.

The new lights are designed to replace original 1960s-vintage fixtures throughout the Chicago Housing Authority's high-rise family housing. The old lights had service lives cut short by an extreme environment that included both the Windy-City weather and criminals, who prefer darkness over light in public areas.

"Age and exposure to the elements deteriorated many of the original incandescent fixtures," says Bob Wendt of the Energy Division's Buildings Technology Center. "In addition, the lights, even when they were operable, were subjected to theft and vandalism to put them out of service."

Chicago temperatures can range from -30°F to 105°F. Aside from the weather, human insults visited upon the lights included assault by clubs, spray paint, gun shots and cigarette lighters. Bulbs also were frequently stolen.

For the residents of the housing projects, the lack of lighting amounted to a direct threat on their safety and security. What was

needed in Chicago's public housing was a weatherproof, vandalproof, low-maintenance and energy efficient light fixture.

Researchers in the Buildings Technology Center were aware of the Chicago Housing Authority's lighting needs through other activities with the agency, and the center had been working with Auburn University's Department of Industrial Design on another project. After getting the university and the housing agency together, Wendt arranged a subcontract for Auburn to develop a new, more robust light as a student design project.

From an initial selection of more than 50 design concepts, the Chicago authority, ORNL and the Auburn students and faculty narrowed the selection to three finalists. The winning design is a 13-inch-square fixture made of 16-gauge steel. It has slanted sides to reflect light and a polycarbonate lens. Two 18-watt compact fluorescent bulbs provide 20 percent more light than the original fixtures' two 60-watt incandescent bulbs. Better yet, they last about 10 times longer, a noted advantage when maintenance budgets are tight to nonexistent.

The polycarbonate lens has stood up well under one of the more common vandal attacks—battering with a blunt instrument—and less well with another, in which holes are melted in them with a cigarette lighter. However, the design allows for optional flame-resistant features if they are required.

During an initial field test of the lights in Chicago's Robert Taylor homes this past winter, they held up well.

(See LIGHT, page 2)



An ORNL-inspired collaboration is dispelling the darkness that plagues public housing.

Leader in number crunching

With new machines, ORNL has one of the world's largest unclassified scientific computing facilities

In April, ORNL became one of the most powerful unclassified scientific computing facilities in the nation. The IBM RS/6000 SP supercomputer, dubbed the "Eagle," has been upgraded, and a new Compaq Alphaserver supercomputer, called the "Falcon," has been installed. The two supercomputers can operate at a theoretical speed of 1.5 teraflops, or more than a trillion calculations per second. That's 10 times the computational speed of ORNL's recently dismantled Intel Paragon, which was the fastest supercomputer in the world in early 1995.

The IBM SP, which was installed last year, originally operated at 100 gigaflops and then 400 gigaflops, less than half a teraflop. It has been upgraded so that it can operate at more than 1 teraflop. The new Compaq Alphaserver supercomputer can operate at almost half a teraflop. The computational speed and capacity resulting from these changes make ORNL one

of the most powerful unclassified computing facilities worldwide.

"ORNL can be a leader and galvanizing force for taking the Southeast to the next level in high-performance computing," says Thomas Zacharia, director of ORNL's Computer Science and Mathematics Division, who would like to see ORNL reach 10 teraflops of computing capacity in the next few years. "Computing is one of three top priorities of our new contractor, UT-Battelle. We expect to fulfill this commitment. We have an opportunity to reach out to the core universities of UT-Battelle. The proposed Joint Institute for Computer Science will be a mechanism or vehicle for building these partnerships."

ORNL will also offer 360 terabytes of data storage for the two large parallel computers using a version of IBM's High-Performance

(See COMPUTERS, page 2)



Jay Nave

The Computer Science and Mathematics Division's Pat Worley checks out the freshly uncrated Compaq Alphaserver.

Light

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The housing officials and residents may have been most impressed with the lights' performance. Although conventional incandescent lights could last up to 1,000 hours, they were often stolen or broken within days. The new, more durable fixtures would likely increase the service life and the fluorescent bulbs, with a push-in base, are a less desirable target for thieves, Wendt says. They are expected to last up to 10,000 hours.

"After we field tested the handful in the

Robert Taylor Homes, the Chicago Housing Authority ordered 1,800 more to complete a total of 11 buildings, which will be installed this summer," Wendt says.

The success of the collaboration drew the attention of Chicago media. The *Chicago Tribune* featured the lights and the partnership that created them in March, and a story about the project aired on the Cable News Network and other outlets shortly after that.

Lithonia Lighting is currently producing the fixtures for the Chicago Housing Authority. The Buildings Technology Center historically has worked with industries



This design by Auburn students has proved ready for the rigors of public housing.

and universities to come up with new designs and technologies for buildings. Several projects are currently ongoing or in the works with universities, including historically black colleges and universi-

ties and minority educational institutions. These projects all have the aim of achieving increased energy efficiency.

Efficiency is a result with the Chicago project as well. A more pronounced benefit, however, is a better, safer and more secure environment for the residents of the public housing facilities.

"It says in the Bible that 'The people that walk in darkness have seen a great light,'" Wendt says. "While not biblical in proportion, these lights are already improving the lives of people who were having to live in darkness." —B.C.

The polycarbonate lens has stood up well under one of the more common vandal attacks—battering with a blunt instrument—and less well with another, in which holes are melted in them with a cigarette lighter.

Computers

Continued from page 1

Storage System that ORNL researchers helped develop. The 184-node Eagle has 372 gigabytes of memory and 9.2 terabytes of local storage, and the 80-node Falcon has 160 gigabytes of memory and 5.5 terabytes of local storage.

While the IBM supercomputer is dedicated to a range of computational science research efforts, the Compaq machine will be focused on computer science projects such as early systems evaluation aimed at developing better tools for computational science researchers.

Computer science will play an increasing

role in science, Zacharia believes. Development of step-by-step procedures called algorithms will allow more powerful computers to solve more complex scientific problems through simulations of experiments. "High-performance computing is needed to meet DOE objectives," he says. "It has become a crucial tool for scientific discovery in climate, bioinformatics, and materials research as well as many other areas."

One example of a new supercomputer algorithm developed at ORNL is "large-scale time-averaged normal coordinate analysis." ORNL researchers have used this new algorithm on the new ORNL supercomputers to calculate the vibrational modes of a polymer system of 24,000 atoms, shattering

the previous record of 3,000 atoms. They expect to soon extend the number of atoms modeled to over 100,000, which will enable the study of viruses for improved drug design, better understanding of photosynthesis and the design of new nanoscale devices.

One scientific challenge is the prediction of changes in the future global climate as greenhouse gas levels rise. Computing at ORNL will be used to predict changes in the regional climate in the Southeast based on results of global scenarios. For example, scientists will try to predict whether, in the next few decades, East Tennessee will have more droughts, North Carolina will have more hurricanes and Florida will have greater coastal flooding than in the past few decades.

Researchers in the computational biosciences are using ORNL supercomputers for bioinformatics. They are locating and discovering genes in DNA sequences, predicting the structure of proteins encoded by specific genes, and estimating gene functions. The DNA sequences they will be analyzing computationally include human chromosomes 19, 16, and 5, for which draft sequences have been produced by DOE's Joint Genome Institute, of which ORNL is a part. The new information on genes and gene functions could lead to the development of new drugs.

ORNL researchers are using supercomputers to simulate collisions between future cars made of advanced lightweight materials that are designed to use fuel more efficiently and cleanly. The idea behind these calculations is to determine whether these cars will hold up during crashes as well as the steel cars of today. These and trillions of other numbers will be crunched at one of the nation's most powerful unclassified computing facilities.—Carolyn Krause



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Curtis Boles

Wigner fellow Sean Agnew brought his wife Jennifer and new son Thomas to the Wigner Fellows' 25th anniversary ceremony on April 20 (story on page 6). They have another son, Liam, 2.

Lab Notes

itinerary included a coach tour around some of the older facilities, including the Mouse House, and a stopover at the Robotics and Process Systems facility to see the Spallation Neutron Source's mercury target simulator.



Jim Richmond

Rep. Zach Wamp (left) and Bill Madia take a magical mystery tour of ORNL.

That first impression is important

Two of the themes stressed by the UT-Battelle management team during the transition period were upgrading ORNL's facilities and community outreach. UT-Battelle's first public announcement, made April 3, the first work day on the job, represented a double-play in that respect. ORNL Director Bill Madia announced that the Lab's first facility to be upgraded will be its visitors center.

Local officials and media gathered under Building 5000's awning for the announcement, which occurred during a lull between April gullywashers.

"We want this change to be something more than just changing signs at the entrance," Madia said.

"Each year the current visitors center is the first impression of ORNL for more than 14,000 scientists, students and other guests from all over the world. We want that first impression to be one worthy of the world-class research that takes place every day at ORNL."

The new center actually will be located next door to the current one, in the relatively new Building 5002. A large area on the ground floor will be refurbished and decorated with new exhibits designed to give visitors a correct impression of ORNL—that it is a place alive with science.

The new visitors' center, which will cost a modest \$100,000, is just a start on a much more ambitious and comprehensive upgrade campaign. Madia estimated that the Lab is due for improvements that could cost up to \$300 million.

Wamp: Human factor is important

Better facilities for ORNL research was also the topic of the day when 3rd District Rep. Zach Wamp made his first Lab visit with the new UT-Battelle team on April 19. His

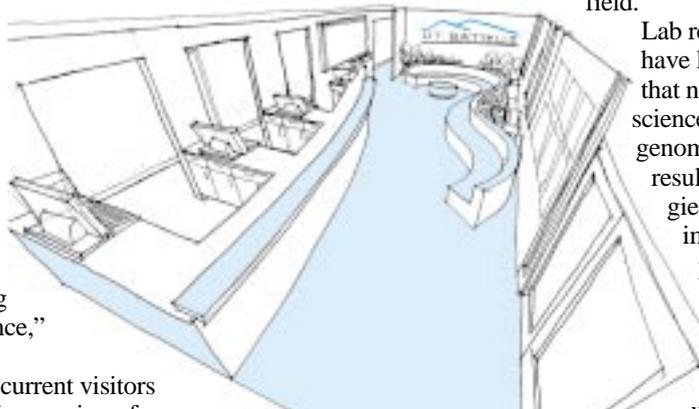
Wamp said that the SNS program's congressional critics have been satisfied with recent progress in the program. "Their reasons for apprehension are largely gone, thanks to David Moncton," he said.

The congressman made a stop at the new Environmental and Life Sciences Laboratory under construction on the west end of the Lab, which is also the site for the proposed Laboratory for Functional Genomics, or new Mouse House. "Congress ramps up funding in areas of research that improve people's lives," Wamp stressed. "Human life is important—a fertile field."

Lab researchers have long noted that neutron science and genomics both result in technologies that improve people's lives.

The trip climaxed with an unplanned trek up to Building 2001, the Quonset hut-styled relic that

Artist's sketch of the new visitor center.



housed the UT-Battelle transition team. Wamp noted the rust and cracked paint of the former "Winter Palace," much like the Mouse House, and affirmed the need for quality facilities for quality research. Earlier in the trip, he characterized prospects for funding for the new Mouse House as "do-able."

Aviator's goal: Make sustainability fly

Paul MacCready's claim to fame, of which he's earned quite a bit, is making things go on as little energy as possible. In fact, he has designed aircraft that fly on power supplied only by human muscle.

His human powered craft fooled the experts in the 1970s by actually flying and even crossing the English Channel. Although those aircraft were too fragile to be practical in themselves, they prove important points about energy efficiency and R&D.

"When you're unfettered, you can go way out and achieve your goals," he told the

Wigner Auditorium crowd on April 12. "Impractical ideas result in very practical devices."

In fact, the "father of human-powered flight" earned his mantle in the face of predictions by Europe's top aeronautical design schools that the Kremer prize for achieving human-powered flight would never be awarded because the feat was impossible. MacCready's success was driven by two things, he said: A bad-loan debt that the prize would wipe off and an approach that was totally outside design-school conventions.

"They knew too much," he said of the doubters. "They couldn't see the easy ways; they had on mental blinders."

Although the skies probably won't ever be dotted with pedaling aviators, MacCready has designed solar-powered unmanned craft that can stay aloft at high altitudes for months to perform surveillance or scientific missions. And his solar-powered vehicles, which blew away the competition in cross-country races, have evolved into autos that are currently on the market.

MacCready emphasized that energy-efficient designs like his are more than novelties. They represent a critical approach to how scientists now and in the future can help maintain a stressed Earth.

"We control the future; we wield the paintbrush," he said. "Humans are no longer subject to Earth's checks and balances, but the Earth isn't getting any bigger. The young ones now are the ones who'll determine whether we achieve a sustainable world."

MacCready's talk was arranged by Robotics and Process Systems Division researcher François Pin, a colleague and fellow sail plane enthusiast.

The interest is there

Open your doors, and they will come: The Spallation Neutron Source project leaders held an open house on April 25 at their 701 Scarboro offices. The business forum drew 182 registrants; the open house's estimated 500 attendees crammed the lobby.

Reported by Bill Cabage

UT-Battelle Board of Governors meets for first time

UT-Battelle's Board of Governors met for the first time on April 20. Lab managers spent much of that day acquainting the board with ORNL and discussing the Lab's future directions.

Among the tasks in the board's operating plan are to set policy for the limited liability corporation, provide independent oversight, guide interactions in tech transfer and industrial partnerships, assure stakeholder satisfaction and evaluate the performance of the Lab director.

The board members represent the University of Tennessee, Battelle and the UT-Battelle partner universities and companies. Here are the members of the board, along with their affiliations.

J. Wade Gilley, president, University of Tennessee, chair, UT-Battelle
Douglas E. Olesen, president, Battelle Memorial Institute, vice chair, UT-Battelle

Richard Adams, chief technology officer, Battelle
John Casteen III, president, University of Virginia
Wayne Clough, president, Georgia Institute of Technology
Talbot D'Alamberte, president, Florida State University
Homer Fisher, senior vice president, emeritus, University of Tennessee
Emerson Fly, executive vice president, University of Tennessee
Marye Anne Fox, chancellor, North Carolina State University
Ronald Green, president, Duke Engineering & Services, Inc.*
Mark Kontos, chief financial officer, Battelle
Donald McConnell, senior vice president, Battelle
Nan Keohane, president, Duke University
William Sansom, vice chair, University of Tennessee Board of Trustees
Robert Smith, senior vice president, Battelle
Dwayne McCay, vice president, University of Tennessee
Charles Steger, president, Virginia Tech
Ronald Townsend, president, Oak Ridge Associated Universities, Inc.
Allen Womack, president, BWX Technologies, Inc.*

* Non-voting governor

ORNL, two local colleges share library resources

ORNL has entered into a library use agreement with Roane State Community College and Pellissippi State Technical Community College.

The agreement will allow students from the two colleges to borrow materials from ORNL's research libraries. At the same time, ORNL employees will be able to borrow materials from libraries at the two institutions in Roane County, Oak Ridge and West Knoxville.

ORNL has a similar agreement with the University of Tennessee.

"This is about partnerships," said Lee Riedinger, ORNL's deputy director of Science and Technology. "This arrangement has worked well with UT and will work well with these two institutions. Hopefully, this is the start of many partnerships with these two fine institutions."

Loretta Friend, dean of Roane State's Oak Ridge campus, said she is looking forward to working with ORNL in other joint ventures.

"We've been looking forward to this day for a long time," Friend said.

Peter Nerzak, Pellissippi State's librarian, said ORNL and Pellissippi State students will all benefit from the program.

"Our students will hopefully get a lot out of this facility," Nerzak said. "We hope employees at ORNL will use our library, as well."

Randy Hoffman, manager of ORNL's research libraries, said Roane State and Pellissippi State's students and faculty will be able to count on ORNL as a resource for the information they need.—Fred Strohl

In new 'Ombudsman' role, Stow still tracks staff concerns

ORNL employees who have been accustomed to having the Ethics Office as a place to voice concerns and seek advice still have that resource available to them. Steve Stow, who has served as ORNL's ethics officer for the past several years, has retained those duties. The title is different however. He is now the ORNL "Ombudsman."

"It's business as usual, except under another name," says Stow. ("Ombudsman" is derived from a Swedish word for "representative.")

"We still expect issues to be addressed by one's line management whenever possible. When that approach does not work, or when it is inappropriate to discuss something with the line management, then the Ombudsman office is the place to come."

ORNL's ethics program was largely an element of the former contractor, Lockheed Martin. However, Stow says UT-Battelle saw merit in the concept and asked him to continue.

"People have felt pretty much at ease in expressing concerns to this office, and I want

people to know that it is continuing," Stow says.

In resolving those issues, Stow often guides employees through normal processes and works closely with Human Resources' staff. Correspondingly, he works issues with organizations and offices most closely tied with the issue: Security matters, for instance, are usually worked through ORNL Security.

Other issues he has dealt with range from ethics, waste, fraud or abuse to personnel interactions, applications of policies and procedures, conflict of interest issues and use of government resources.

"When we are presented with issues, we deal with them in as much confidentiality as possible, Stow says."

Stow has also taken on a new duty—a technology-transfer ombudsman role, where he will deal with issues arising in partnership interactions. This is a new role established at most DOE facilities at the initiative of Secretary Richardson.

The persistence of rumors is another area

Stow is willing to address. He'll try to get answers to rumors that are submitted to his office—either confirming them or laying them to rest. The important thing, he says, is that the new management team can better deal with errant information if they know what's circulating.

Stow says the question of whether ethics training and surveys will continue has not been decided. Surveys, he says, are a possibility. His main message is that Lab employees still have a place to voice their concerns.

"I'll do essentially the same thing. Employees should contact my office with any concerns, questions, rumors or issues that need resolution . . . all the things they would have contacted me about in the past."

He adds that the Employee Concerns Program, which is coordinated by the Office of Workforce Diversity, is another place for staff members to seek help.

The ORNL Ombudsman's helpline number is 241-5676. Stow's number is 576-7802. —B.C.

Raising the SIT banner

P&E groups are conspicuously dedicated to safety improvement

ORNL's Safety Improvement Team, a collection of representatives from work groups in the Plant and Equipment Division, continues to gather momentum in creating a safer workplace. The team has literally bannered its mission: Shops and gathering places throughout ORNL are displaying eight-foot broadsides advertising the Safety Improvement Team and the "work together safely" message.

The banners are customized for each work group, which contributes its own slogan. They've been erected so far in conspicuous locations throughout the Lab—in machine shops, break areas and on the sides of buildings.

One P&E group, the Sign Art Shop, which produces the banners, has even customized its own for its shop at Building 7007.

The Safety Improvement Team is a collaborative effort of the Atomic Trades and Labor Council and the P&E Division aimed at improving safety on the job. Representatives from work crews take suggestions on safety-related issues and initiate action on them. The banners, says ATLC safety rep Jeff Hill, reinforce a sense of employee ownership of

the SIT.

"Each crew has its own banner with its own slogan, which conveys the message that safety really belongs at the grassroots level. It's everybody's job to work safely," Hill says.

Kelly Beierschmitt, who recently assumed the mantle of director of Environment, Safety, Health and Quality at the Lab, echoes Hill's views on the importance of the workers' involvement in safety, which is also a key aspect of Integrated Safety Management.

"I applaud the efforts of the Safety Improvement Teams," says Beierschmitt.



Curtis Boles

The Plant and Equipment Division's Sign Art Shop, where the Safety Improvement Team banners are created, has its own. Displaying it recently are P&E's David White, Lab Director Bill Madia, ATLC Vice President Ed Mee, artist Brenda Norvell, P&E Division Director Jerry Hammontree, ESH&Q Director Kelly Beierschmitt and P&E's Gene Moody.

"Worker ownership for safety is a critical element for ES&H success; and the Safety Improvement Team, through their recent banner initiative, is an excellent example of empowered workers making safety personal and doing the right things."

Lab Director Bill Madia, ATLC Vice President Ed Mee and P&E Division Director Jerry Hammontree recently visited the Sign Art Shop to see the banner of the crew that paints the banners. Madia, whose UT-Battelle team stresses Integrated Safety Management, agreed that the banners, with their work-crew ownership, can help drive home the message of safety on the job.

"The big thing is awareness," he says. "It's like driving to work: You do it so many times that you go on autopilot, and that's when accidents happen. But if you are thinking about being safe, you are going to be safe."—B.C.

'It does matter'

Here are some of the slogans the work groups have created for their Safety Improvement Team banners.

"Today's safety is tomorrow's future"—*Day Shift Janitors*

"Stay alert—don't get hurt. Integrated Safety Management"—*7012 Sheet Metal Shop*

"Follow good safety habits, practice is proof"—*Environmental Sciences Division Maintenance Services*

"Family, friends, co-workers, we need you. ISM (it does matter)—*ORNL Insulators*

"Teamwork is the catalyst that yields excellence from shared strength"—*7012 Machine Shop*

"Talk more about safety, hear less about accidents"—*Roads and Grounds*

"Safety is top of the line"—*Field Services*

Lab readies for June Safeguards and Security I&E audit

ORNL is gearing up for an important audit in early June. That's when guests will arrive to begin the Safeguards and Security Inspection and Evaluation (I&E) audit, beginning June 5 for a two-week stay.

These audits are comprehensive, involving every aspect of Lab security, including physical security, computer security, foreign national visits and assignments, accountability and control of special nuclear materials and information security. Auditors will also look at security in special facilities such as the High Flux Isotope Reactor and Building 3019.

Historically, these audits have been tough. Whether auditors are coming to town or not, ORNL Security Manager Bill Rich stresses

that security isn't just the domain of the security organizations. It's a shared responsibility.

"It's crucial for everyone to be involved in the Lab's security. It's a line management responsibility, and security organizations cannot carry the day alone," he says.

"It's extremely important to ORNL and to the new UT-Battelle team to do well on this I&E. It's the first real test under the new team's watch. But it also has an important bearing on some of the initiatives that are planned for the Laboratory, such as developing more national security program work."

In fact, Lab Director Bill Madia includes attention to security as one of the tenets of

simultaneous excellence. As an example, he cites one national laboratory's breakdown in computer security and the DOE-wide ramifications it caused.

"Everybody has a role," Rich says.

ORNL's internal Web-based news, *ORNL Today*, has been running a series of security pointers outlining what employees should know and do regarding proper security practices. You can learn more about ORNL security on the internal Web page, www-internal.ornl.gov/olp/security/sec.htm, or by reading ORNL Security's newsletter, *Security Insights*. If you have questions or observations about the I&E, contact Rich at 241-0340, richwr@ornl.gov.—B.C.

ORNL injects strong presence at Future Car Congress

ORNL had a strong presence during the first Future Car Conference, held April 2–6 in Arlington, Va.

During the four-day event ORNL researchers made 14 technical presentations in the technologies of materials, battery energy and management, electric and hybrid vehicles, modeling and diesel and ethanol issues. ORNL was also instrumental in bringing off the event.

The congress attracted 865 attendees from 16 countries, representing expertise from government, industry and universities to discuss the future of the automotive industry and new design concepts being researched and tested. Recent automotive technology achievements and future directions of R&D were discussed, as well as issues of environmental impact. It was sponsored by DOE's Office of Energy Efficiency and Renewable Energy, and administered by the Society of Automotive Engineers International (SAE). Technology focus areas included materials, fuel cells, electric and hybrid vehicles, battery and energy management, advanced climate control, advanced vehicles, aerodynamics,

modeling, advanced vehicle marketing considerations, and diesel and ethanol issues.

Don Walkowitz of the U.S. Council of Automotive Research praised the Lab's presentations.



Engineering Technology Division's John McKeever gave a well-attended presentation at the Future Car Congress.

"They were great presentations and good technical content," Walkowitz said.

Secretary of Energy Bill Richardson urged the auto industry to continue research that will lead to even more fuel efficient vehicles in the future. Richardson praised the Partnership For A New Generation of Vehicles (PNGV) program, of which ORNL plays a major role in the materials area.

Richardson cited PNGV as an example of a successful collaboration between the auto industry and government to produce a family sedan that can get 80 miles

per gallon without compromising cost, performance or safety. He added that with recent uncertainty in gasoline prices, work to produce even more fuel efficient vehicles must continue.

Secretary of Transportation Rodney Slater echoed Richardson's comments, noting the accomplishments that have been made in recent years through the work of the partnership. He added that the visionaries gathered at the Congress "force all of us to move our minds forward and to embrace new ideas."

Richardson's and Slater's remarks, as well as the Monday morning panel session, were carried live on C-Span.

"Our DOE and USCAR (U.S. Council for Automotive Research) customers spoke highly of the Congress—which makes all of the effort worthwhile and leaves one with a feeling of accomplishment," says Ed Grostick, deputy manager of ORNL's Transportation Technologies program.

The ORNL Transportation Technologies program office planned and implemented the congress for the DOE Office of Energy Efficiency and Renewable Energy and subcontracted with SAE to administer the congress. Transportation Technologies is planning and implementing the next Future Car Congress, to be held in the summer or fall of 2002 in Detroit.

"This was a very successful conference," says DOE's James Merritt, who oversaw the Arlington event. "The next one will be hard pressed to beat this one."—Fred Strohl

Wigner fellowships mark 25 years of attracting top talent

ORNL is celebrating its 25th year of Wigner fellowships. The Eugene P. Wigner Fellowship program was established in 1975 to honor the Nobel Prize winner and first director of research at ORNL.

The two-year fellowships have attracted exceptional young scientists to ORNL over the years. The program, true to its charter, makes it possible for outstanding scientists and engineers to continue on the developmental path. Better yet, many of these young researchers have stayed at ORNL.

Past and current Wigner fellows gathered for a ceremony marking the anniversary on April 20. Fellows who will soon depart the program were honored and new fellows were welcomed and congratulated.

Lab Director Bill Madia credited former director Herman Postma with originating the fellowships. "Herman's vision was to attract the best and brightest talent," Madia said. "And getting them to stay here was essential."

Since 1975, 56 fellows, including three new fellows, have joined the ORNL program. Twenty of those still work at ORNL. The



Annett Sullivan and Lars Petersen are two new Wigner fellows who attended the ceremony marking the fellowship program's 25th year.

three new Wigner fellows, who were noted at a special reception on April 20, are

- Annett Sullivan, who earned her Ph.D. in geology at the University of Wyoming last year. She's currently working in the Environmental Sciences Division with Pat Mulholland on developing a new approach for large-scale carbon cycle studies and

effects of environmental change. One of the amenities she brought with her from Wyoming is her horse.

- Lars Petersen, who received his doctorate in physics last year from the University of Aarhus, Denmark's Institute of Physics and Astronomy. ORNL/UT Distinguished Scientist Ward Plummer has called Lars "one of the best young experimentalists I have ever had the privilege to work with." Lars is working with Plummer and David Zehner in surface physics in the Solid State Division.

- Young-II Jang, who'll arrive at the Lab in May, received his Ph.D. in ceramics from the Massachusetts Institute of Technology. Young-II will be working in the Solid State Division's Thin Film Ceramics program under the direction of former Wigner Fellow Nancy Dudney.

Current Wigner fellows include Michael Lance and Sean Agnew of the Metals and Ceramics Division, Jian Shen of the Solid State Division and Mark Lumsden at the Spallation Neutron Source.

Wigner, who died in 1995, received the Nobel Prize for Physics in 1963 and is considered a pioneer in the field of nuclear engineering.—B.C.

RSPD's Lynne Parker keeps Lab's string of Presidential Early Career winners going

The Computer Science and Mathematics Division's Lynne Parker is one of five recipients of the fourth annual Presidential Early Career Awards for Scientists and Engineers, presented April 12 at the White House.

Parker, a group leader in computational intelligence, was recognized for her research in cooperative robotics "as a shining example to future generations of researchers—the best of the group of scientists and engineers who will be responsible for America's 21st century greatness."



Lynne Parker

The Presidential Early Career Awards program was established by President Clinton in 1996 to encourage and recognize the work

of the nation's young scientists and engineers in the 21st century. Past PECASE winners from ORNL are Phil Jardine and Michael Smith in 1996; David Dean and David Newman in 1997 and James Lee and Tony Mezzacappa in 1998.

"We honor with these awards, but moreover, we look to your futures, bright and expansive, for continued enlightenment, leadership and service to society," said Secretary of Energy Bill Richardson in presenting the awards to Parker and the other recipients.

ORNL Director Bill Madia praised Parker for her efforts that led to earning the award.

"This is a tremendous honor for Lynne Parker and for Oak Ridge National Laboratory," Madia said. Lynne's award is an example of the type of work that has made Oak Ridge National Laboratory a world-renowned research institution."

Lab marks record for no OSR violations

ORNL established a record on April 23: The Lab marked its 548th day without an operational safety requirement violation. The last OSR violation was on Oct. 23, 1998.

OSRs pertain to 10 nuclear facilities at ORNL including the High Flux Isotope Reactor, Building 3019, the Radiochemical Engineering Development Center and various hot-cell facilities.

"To put this record in perspective, there have been 77 OSR violations since the first one was recorded on July 12, 1983. This is an average of one violation every 81 days," says the Office of Nuclear Safety's Mark Kohring. "Last year was the first full calendar year with no OSR violations since 1984."

Kohring explains that an OSR sets controls for nuclear facility operations that ensure that radiation releases to the workplace and environment don't occur. Common examples

of violations are failure to conduct a required surveillance at the required time or failure to take necessary action when a required operational parameter is exceeded.

The last violation occurred in 1998, when operations at a facility continued past an allowed time after an alarm horn was found to be inoperative.

Kohring attributes the record to "the increased attention that facility managers have given to verbatim requirements of OSRs, and to the much-improved quality of current OSRs. Revisions in the past included requirements that were not important to the health and safety of the public and workers and the environment.

"With the increased confidence of DOE in our ability to operate safely, this success enables us to run these facilities with fewer interruptions," Kohring says.

NIOSH conducts local health studies

The National Institute for Occupational Health and Safety (NIOSH) is currently conducting several occupational health studies under a memorandum of understanding between the Department of Health and Human Services and the DOE Oak Ridge facilities. The following two NIOSH-sponsored studies are nearing completion. This summer, NIOSH and the study investigators will communicate the results of these studies to workers and management at Oak Ridge. For additional information on NIOSH health studies, consult the Web site at www.cdc.gov/niosh.

Mortality among female nuclear weapons workers—This study examined the numbers and kinds of death that occurred among 68,338 female nuclear weapons workers who worked before 1980 at selected DOE facilities, including the Oak Ridge National Laboratory, Y-12 Plant, and former K-25 Site. The study attempted to see if any relationship exists between certain diseases and exposure to ionizing radiation and non-radiation hazards. Study results will be reported to Oak Ridge workers in June 2000. Contact for further information: Travis Kubale, NIOSH (513) 841-4400.

Prevention of stress and health consequences of downsizing and reorganization—This multi-site study looks at the effects of downsizing on organizational climate, worker health, and safety. The Oak Ridge Y-12 Plant is included in this study and results are expected to be released in June 2000. Contact for further information: Larry Murphy, NIOSH (513) 533-8171.

Service Anniversaries

May 2000

40+ years: James R. Distefano, Metals and Ceramics

40 years: Trousdale A. Lewis, Instrumentation and Controls

35 years: Fred J. Smith, Chemical and Analytical Sciences

30 years: Larry W. Owen, Computational Physics and Engineering; Lelia A. Sutherland, Office of Radiation Protection

25 years: William A. Brooke, Quality Services; Thomas H. Dunigan, Jr., and Leonard J. Gray, Computer Science and Mathematics; Sally P. Gardner, Research Reactors; Howard M. Hubbard, Environmental Protection and Waste Systems; Paul L. Moore, Jr., James M. Rose, Leo W. Whiteside, Jr., and Allen R. Winton, Plant and Equipment; Balie M. Ross, Environmental Sciences; Janet E. Swift, Human Resources and Diversity Programs; Michael J. Taylor, Computational Physics and Engineering; Regina G. Violet, Chemical and Analytical Sciences

20 years: Donna L. Moates and Joan S. Taylor, Chemical Technology; Simon D. Rose, Engineering Technology

Energy, CIND named top diversity divisions

Energy Division was named the Office of Workforce Diversity's research division of the year and the Computing, Information and Networking Division was named workforce diversity support division of the year at the annual awards breakfast April 27. Energy's Teresa Ferguson was named representative of the year; CIND Director Richard Hicks was named outstanding division director.

Engineering Technology Division's Saylor Hummel was honored for sustained workforce diversity contribution. The Women's History Month celebration was voted outstanding cultural diversity event for 1999.

Lab Director Bill Madia, the morning's keynote speaker, said that awareness of diversity in the workplace was an important facet of simultaneous excellence. The Lab, he said, gains from the breadth of experience and knowledge that people from different backgrounds can provide.

"You make better decisions when you have a diverse organization. You get better answers," he said.

ETD employee reviving Clinton's landmark Ritz theater

An East Tennessee theater landmark is about to make a comeback 13 years after it closed its doors, thanks to the efforts of ORNL's Dena Brock.

Dena, a secretary in the Engineering Technology Division, is manager of the Ritz Theatre in Clinton, which will reopen soon to show old and first-run movies, and host concerts and other community events. Her family purchased the theater in 1995 and has made its reopening a family project.

The Ritz, located on Main Street across from the Anderson County Courthouse, was constructed during World War II under the direction of the War Production Board, which cited Clinton's close proximity to Oak Ridge.



Dena Brock

When it opened in November 1945, it was called by many "the most modern theater in the South." During the heyday of the motion picture industry of the 1940s and early 1950s, it hosted packed houses six days a week for all of the great movies of that era. As the movie industry dwindled during the late 1960s, so did the Ritz, and it closed its doors in 1969.

In 1972, a country music show called "The Red Speaks Show" was started at the Ritz. At one time, Speeks hoped to present a show each Saturday night that would rival the Grand Ole Opry in Nashville. The shows were even broadcast on local radio for a time. By 1987, however, the Speeks show had lost its luster and it faded into memory. The Ritz has remained closed until now.

"The theater looks like the classic theater that it was in the 1940s," said Dena, whose father, Dean, was a supervisor at K-25 for 27 years prior to his retirement. "We have repainted the inside but have kept the original design. We haven't changed anything other than doing some revamping and remodeling as well as bringing the theater up to date as far as fire and handicapped access codes are concerned."

Dena said the Ritz will show a variety of movies from the old classics to the modern.

"We'll show first-run movies, but we also want to show such old favorites as 'Casablanca' and 'Gone With the Wind.' We hope to charge just \$5 for a movie.

Dena said the Ritz will be available not only for movies and concerts, but also for



Theater goes in Clinton and the surrounding area will be able to again enjoy the art-deco environs of the Ritz.

gospel sings, weddings, receptions and other meetings. "We're open to any and all ideas," she said. —Fred Strohl

Lab signs MOU with aluminum industry research firm

The aluminum industry stands to benefit from a memorandum of understanding signed by ORNL and Secat, Inc., of Lexington, Ky., on April 28. The MOU, which will also include Argonne National Laboratory and DOE's Albany (Ore.) Research Center, establishes a means to provide economic, environmental and energy benefits to the aluminum industry.

Secat is a newly formed University of Kentucky-affiliated for-profit company that serves as a technical forum for the aluminum industry. The firm has been a user in the Metals and Ceramics Division's MPLUS facility. Programs currently under way include research into how to reduce stress cracking in aluminum ingots and how to reduce oxidative melt loss in aluminum and aluminum alloys.

orn! reporter

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