



U.S., Russian Federation cosponsor GTRI conference

DOE-supported physicists win Nobel Prize

Seven scientists, engineers to receive Lawrence Award

U.S. Department of Energy



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Inside

6

The Department of Energy is making available a limited quantity of crude oil from the Strategic Petroleum Reserve in response to the physical disruption of supply caused by recent hurricanes. The crude oil is being loaned to refineries under short-term contractual agreements.



Genetics may be a factor in the virulence of the plague bacterium according to research led by the Department of Energy's Lawrence Livermore National Laboratory.

8

13

A research project coordinated by the Department of Energy's Savannah River National Laboratory is looking at nature's ways of cleaning up contamination.



On our cover

On Sept. 18-19, 2004, the United States and the Russian Federation, with support from the International Atomic Energy Agency (IAEA), cosponsored the Global Threat Reduction Initiative (GTRI) International Partners' Conference in Vienna, Austria. The purpose of the conference was to build and broaden support under GTRI for national programs to identify, secure, recover, and dispose of high-risk nuclear and radiological materials and equipment that pose a threat to the international community. More than 590 representatives, including 18 ministers, from 100 IAEA member states were in attendance.

In the photograph, U.S. Secretary of Energy Spencer Abraham (left) and Alexander Rumyantsev, Director of the Federal Atomic Energy Agency, Russian Federation (right), address the news media after the closing session of the GTRI conference on Sept. 19. Secretary Abraham remained in Vienna to address the IAEA 48th General Conference on Sept. 20. (Photo by Dean Calma/IAEA)

For more on the GTRI and IAEA conferences, see pages 3 and 4. ❖

GTRI partners' conference held in Vienna

On Sept. 18-19, 2004, the Governments of the United States and the Russian Federation cosponsored the Global Threat Reduction Initiative (GTRI) International Partners' Conference, with support from the International Atomic Energy Agency (IAEA), in Vienna, Austria. U.S. Secretary of Energy Spencer Abraham and Alexander Rumyantsev, Director of the Federal Atomic Energy Agency, Russian Federation, hosted the conference.

Secretary Abraham introduced the GTRI program to IAEA delegates in May 2004 and proposed that the international community join the U.S. in a partners' conference (*DOE This Month*, June 2004). The purpose of the conference was to build and broaden support under GTRI for national programs to identify, secure, recover, and dispose of high-risk nuclear and radiological materials and equipment that pose a threat to the international community. More than 590 representatives, including 18 ministers, from 100 IAEA member states attended the conference.

Secretary Abraham and Director Rumyantsev delivered keynote addresses at the opening session. Secretary Abraham outlined the GTRI objectives and detailed activities and accomplishments to date in meeting those goals. The Secretary also announced that the U.S. Department of

Energy will contribute \$3 million to IAEA to help implement GTRI and support technical cooperation efforts under the program. Secretary Abraham noted that other member states are committing resources and encouraged other countries to make similar commitments to the extent possible.

"It is clear that each of us shares an obligation to work together to reduce the threat of a nuclear or radiological attack," Secretary Abraham said. "...I challenge everyone here not just to take up this important cause, but to take it up with the real commitment to accomplishing it, to doing the hard work, to getting it done sooner rather than later."

Director Rumyantsev stressed that today's international community faces new challenges and threats from international terrorism and that GTRI and the partners' conference are timely and necessary steps to prevent potential acts of nuclear terrorism. Director Rumyantsev assured conference participants that Russia is ready to take an active role in all aspects of GTRI.

During the opening session, remarks read on behalf of IAEA Director General Mohamed El Baradei expressed his hope that the increased resources to be made available through GTRI would increase IAEA's ability to respond to requests from member states for assistance with nuclear

security. Nils Diaz, Chairman, U.S. Nuclear Regulatory Commission, and Andrej Malyshev, Chairman, Nuclear, Industrial and Environmental Authority of Russia, spoke about the significant contribution that nuclear regulatory authorities can and should make.

Representatives from Argentina, Australia, France, Germany, Greece, Japan, Libya, Romania, and Uzbekistan made formal presentations on recent threat reduction activities in their countries. Representatives from Algeria, Tunisia, and Venezuela made supporting statements on GTRI goals and political objectives from the floor. The "Findings of Conference" were endorsed by all attendees at the end of the conference.

In closing remarks, Secretary Abraham highlighted the findings and encouraged member states to actively participate in several upcoming meetings and conferences. "We will secure a peaceful future for our citizens if we band together to address a threat which no nation can defeat on its own," Secretary Abraham said. The Secretary's opening and closing session remarks are available at <http://www.energy.gov>; click on "Press Room" and then click on "Speeches."

Secretary Abraham remained in Vienna to address the 48th General Conference of the IAEA on Sept. 20 (see related article, page 4). ❖

Secretary of Energy Spencer Abraham (right) and Overseas Private Investment Corporation (OPIC) President and Chief Executive Officer Dr. Peter S. Watson shake hands after signing a Memorandum of Understanding (MOU) on Sept. 8, 2004, at Department of Energy (DOE) Headquarters, Washington, D.C. The MOU acknowledges the partnership between DOE and OPIC to promote investment in cleaner, more efficient energy technologies in emerging world markets. Both agencies will work to create an "Efficient Energy and Renewables Program." Specifically, the MOU advances the United States Clean Energy Initiative and the Clean Energy Technology Export Initiative. DOE and OPIC currently are gathering information regarding wind and efficiency opportunities in developing countries to determine the most promising targets for investment. ❖



Secretary addresses IAEA General Conference

Following the GTRI International Partners' Conference, on Sept. 20, 2004, Secretary of Energy Spencer Abraham addressed the 48th General Conference of the IAEA in Vienna, Austria. Secretary Abraham delivered a message from President George W. Bush and spoke about the GTRI, the successes in U.S. nonproliferation efforts, and the need for increased attention to those with access to nuclear materials and technologies. The Secretary expressed concern about a major threat to all nonproliferation efforts—individuals releasing highly sensitive nuclear technology information.

"We cannot ignore the possibility that some individuals may abuse their trust for illicit purposes—whether out of political beliefs, financial need, or some other inducement," Secretary Abraham said. "Addressing this vulnerability within our own nations, and collectively through the IAEA, must be a major priority."

Secretary Abraham proposed working with member states to bring industry together in the appropriate

setting with governments to ensure that export control laws are followed, and that there will be swift enforcement action when they are not. The partnership will assist the international defense against procurement networks.

"This will require the cooperation and input of the entire nuclear industry, including uranium miners and millers, reactor designers and builders, fuel fabricators and suppliers... providers of dual-use technologies," Secretary Abraham said. "These critical sectors are the identified targets of the black-market profiteers, and they must therefore be involved in the effort to develop 'best practices' to protect themselves and the world."

Secretary Abraham said that to expedite this effort, top-level Department of Energy expertise will be provided to assist the IAEA and its members in countering criminal networks. Assistance also will be offered to IAEA to help member countries enhance their export controls and regulatory infrastructure to stop transshipment of proliferant material.

The complete text of Secretary Abraham's remarks is available at <http://www.energy.gov>, click on "Press Room" and then click on "Speeches."

On the sidelines of the IAEA General Conference on Sept. 20, Secretary Abraham held a bilateral meeting with Maatoug Mohammed Maatoug, Libya's Head of the Nuclear Program—the first such meeting between the two countries. "This was a very good meeting with a thorough discussion on nuclear nonproliferation issues," Secretary Abraham said.

Following the meeting, Secretary Abraham traveled to Turkey and Romania. In Istanbul, the Secretary met with Turkish Minister of Energy and Natural Resources Hilmi Guler and representatives of U.S. industry conducting business in Turkey. In Romania, Secretary Abraham discussed energy security initiatives and mutual cooperation in energy infrastructure development with senior leaders, including Dan Ioan Popescu, Minister of Industry and Resources. ❖

Spallation Neutron Source 'warms' up for 2006

With the recent "warm commissioning" of its linear accelerator, the Spallation Neutron Source (SNS) under construction at the Department of Energy's (DOE) Oak Ridge National Laboratory (ORNL) has passed a crucial test and milestone on its way to completion in 2006. The SNS linear accelerator, or linac, is composed of two sections: the "warm," or room temperature section, and a superconducting section that operates at temperatures hundreds of degrees below zero.

The Department's Los Alamos National Laboratory (LANL), part of the team of six DOE national laboratories collaborating on the SNS project, is responsible for the warm linac. Components of the warm linac were shipped from LANL to the project site in April 2004.

The warm section will provide 20 percent of the total acceleration of

the 1,000-foot-long linac. The linac's superconducting section, provided by DOE's Thomas Jefferson National Accelerator Facility (Jefferson Lab), will provide 80 percent of linac acceleration. Testing also has begun of components of the superconducting portion, which consists of niobium cavities chilled by liquid helium to minus 456 degrees Fahrenheit.

"The warm linac commissioning is significant because it verifies the performance of the entire warm linac and ensures successful operation of the entire facility," Norbert Holtkamp, Director, SNS Accelerator Systems Division, said. "Testing of the cold linac components is time critical to allow for the transition of the tests from Jefferson Lab to ORNL, which is a major step toward the transition from construction to operation."

The SNS will produce neutrons for materials, biological, and other

scientific research by sending a high-energy beam of protons down a 1,000-foot linear accelerator to ultimately strike a mercury target, which will "spall" neutrons that are directed to the host of analytical instruments. The SNS will increase the number of neutrons available to researchers nearly tenfold, providing clearer images of molecular structures.

In addition to LANL and Jefferson Lab, four other national laboratories are collaborating on the SNS project: Argonne, Brookhaven, Lawrence Berkeley, and ORNL. Berkeley Lab has completed the "front end," where the proton beam is initially generated. Brookhaven has responsibility for the SNS accumulator ring, a stage between the linac and target. Argonne leads the design of the facility's scientific instruments. ORNL is responsible for the target and will be responsible for operating the SNS. ❖

Carbon Sequestration Leadership Forum holds second ministerial meeting

The Carbon Sequestration Leadership Forum (CSLF), an international climate change initiative that focuses on the development of carbon capture and storage technologies, held its second ministerial meeting in Melbourne, Australia, Sept. 13-15, 2004. Deputy Secretary of Energy Kyle McSlarrow represented the United States.

Three countries—France, Germany, and South Africa—have joined the CSLF since the last ministerial meeting held in Tysons Corner, Va., June 23-25, 2003, bringing the total number of global partners to 17. The other members are Australia, Brazil, Canada, China, Colombia, European Commission, India, Italy, Japan, Mexico, Norway, Russian Federation, United Kingdom, and United States.

The ministers reaffirmed the commitment of their countries to the CSLF as a framework for international cooperation in research and development

for the capture, transport, and storage of carbon dioxide (CO₂). They also recognized that fossil fuels likely will continue in widespread use worldwide for the foreseeable future and that, therefore, the reasons for creating the CSLF remain vitally important.

“Our emphasis on carbon sequestration is of vital importance as the world’s economies continue to expand,” Deputy Secretary McSlarrow said. “Affordable and environmentally safe sequestration approaches could offer a way to stabilize atmospheric levels of carbon dioxide without requiring large-scale and potentially costly changes to our respective energy infrastructures.”

A CSLF Technology Roadmap was supported by the ministers and seen as a framework that could guide future technical collaboration. The ministers recognized 10 collaborative carbon capture and storage projects proposed by members. It is

expected that information generated through these projects will assist in efforts to improve estimates of the potential performance, costs, and benefits of the technologies.

CSLF members have been invited to participate in the U.S. FutureGen project. The project, estimated to cost \$1 billion over the next 10 years, would combine electricity and hydrogen production with the virtual total elimination of harmful emissions, including greenhouse gases.

The United States will continue to assume responsibility for staffing and administering the CSLF with the Department of Energy (DOE) serving as the lead U.S. agency. DOE will coordinate with the Department of State in identifying international partners.

Additional information on the CSLF, collaborative projects, and FutureGen is available at <http://fossil.energy.gov/programs/sequestration/index.html>. ❖

DOE-supported physicists are Nobel Prize co-winners

Two Department of Energy (DOE)-supported physicists are among the three co-winners of the 2004 Nobel Prize in Physics. The honorees are David J. Gross, Kavli Institute for Theoretical Physics, University of California, Santa Barbara; H. David Politzer, California Institute of Technology, Pasadena; and Frank Wilczek, Massachusetts Institute of Technology, Cambridge. The men received the prize for their studies of the “strong” force, the force that binds together the particles inside atomic nuclei.

“On behalf of the U.S. Department of Energy, I congratulate Frank Wilczek, H. David Politzer, and David J. Gross for winning the 2004 Nobel Prize in Physics,” Secretary of Energy Spencer Abraham said. “We are especially pleased to note Dr. Wilczek’s and Dr. Politzer’s longtime affiliations with the DOE Office of Science’s High Energy Physics program. They join a re-

markably long and distinguished list of Nobel Prize winners supported by DOE.” Wilczek has had a long affiliation with DOE’s Brookhaven National Laboratory as a theoretical physicist.

“The award of this year’s Nobel Prize to Gross, Wilczek and Politzer for their fundamental, groundbreaking theoretical investigation of the forces between quarks brings to mind the original discovery of quarks themselves at several DOE national laboratories,” Dr. Raymond L. Orbach, Director of DOE’s Office of Science, said. “The Office of Science is proud of its long association with research into the fundamental constituents of matter and of the scientists whose work it has supported.”

The majority of the experimental evidence for quarks was accumulated in three DOE national laboratories supported by the Office of Science’s High Energy Physics program—

Brookhaven, Lawrence Berkeley, and the Stanford Linear Accelerator Center. This work resulted in the award of the 1976 Nobel Prize to Burton Richter and Samuel C.C. Ting and the 1990 Nobel Prize to Henry Kendall, Jerome Friedman, and Richard Taylor. The original idea for quarks and the theory of the strong force binding them together inside the proton and neutron were proposed by Murray Gell-Mann, whose theoretical research was supported by the Office of Science for many years and who won the 1969 Nobel Prize in Physics for his work in elementary particles.

DOE has sponsored 41 Nobel Laureates since its inception in 1977. The complete roster of Nobel Prize winners supported by DOE and its predecessor agencies is available at <http://www.science.doe.gov/sub/accomplishments/heroes/heroes.htm>. ❖

Secretary announces Lawrence Award winners

On Sept. 22, 2004, Secretary of Energy Spencer Abraham announced seven winners of the 2004 Ernest Orlando Lawrence Award. The award was established in 1959 to honor the memory of the late Dr. Ernest Orlando Lawrence who invented the cyclotron and after whom two major Department of Energy (DOE) laboratories in Berkeley and Livermore, Calif., are named.

The Lawrence Award honors scientists and engineers for their exceptional contributions in the broadly defined field of atomic energy. Each winner receives a gold medal, a citation signed by the Secretary of Energy, and \$50,000. The awards will be presented at a ceremony in Washington, D.C., on Nov. 8, 2004.

Nathaniel Fisch, a physicist, is Professor of Astrophysical Sciences at Princeton University and Associate Director for Academic Affairs at DOE's Princeton Plasma Physics Laboratory. Fisch will receive the award in the nuclear technology category for his discovery of ways to use plasma waves to produce currents in fusion tokamaks.

Chemist **Bette Korber** of the Theoretical Biology and Biophysics Group at DOE's Los Alamos National Laboratory (LANL) will be presented the award in the life sciences category.

Korber will be recognized for her studies delineating the genetic characteristics of the Human Immunodeficiency Virus (HIV) and development of the LANL HIV database.

Astrophysicist **Claire Max** will receive the award in the physics category for her contributions to the theory of laser guide star adaptive optics and its application in ground-based astronomy. Max is a professor and astronomer at the University of California, Santa Cruz and a physicist at the Institute for Geophysics and Planetary Physics at DOE's Lawrence Livermore National Laboratory.

Fred Mortensen, a mechanical engineer, is a project design leader in LANL's Thermonuclear Applications Group and a Laboratory Fellow. Mortensen will be recognized in the national security category for his contributions to nuclear weapons design and expertise that has helped certify the safety and reliability of nuclear weapons in an era without nuclear testing.

Richard J. Saykally will receive the award in the chemistry category for inventing new, powerful methods such as velocity modulation spectroscopy to study the structure of molecular ions. Chemist Saykally is a professor at the University of California, Berkeley, and senior scientist with the Chemical Sciences Division at

DOE's Lawrence Berkeley National Laboratory.

Physicist **Ivan Schuller** will be presented the award in the materials research category for creating the field of metallic superlattices and recognizing the impact of these materials on magnetism and superconductivity. Schuller is a Professor of Physics in the Division of Physical Sciences at the University of California, San Diego.

Gregory W. Swift is a physicist, technical staff member, and a Laboratory Fellow in LANL's Condensed Matter and Thermal Physics Group. Swift will receive the award in the environmental science and technology category for developing, designing and building thermoacoustic heat engines and refrigerators that operate at high efficiency with no moving parts through the power of sound.

"We are all enriched by the contribution these researchers have made ranging from engines with no moving parts to better ways to see the stars," Secretary Abraham said. "These awards, and the research for which they are given, show that DOE could easily be called the Department of Science and Energy."

Additional information on the winners and their work is available at <http://www.sc.doe.gov>. ❖

DOE loans oil from Strategic Petroleum Reserve

Hurricane Ivan created a physical shortage of domestic sweet crude oil coming from the Gulf of Mexico. In response to the physical disruption to the region, the Department of Energy (DOE) announced on Sept. 23, 2004, its intent to enter into negotiations to make available a limited quantity of crude oil from the nation's Strategic Petroleum Reserve (SPR) to help relieve physical shortages of crude oil supplies. The negotiations are for crude oil to be loaned under short-term contractual agreements from SPR and to be returned to the Reserve once supply conditions return to normal.

"I have authorized these negotiations in response to the physical disruption of offshore oil production and imports in the Gulf Region caused by Hurricane Ivan's destruction," Secretary of Energy Spencer Abraham said. "As this Administration has stated consistently, the SPR was designed to protect American consumers against supply disruptions, including natural disasters."

Similar to the October 2002 response to Hurricane Lili, these negotiations are being conducted following specific requests from refineries. When Hurricane Lili disrupted normal commercial oil shipments into

Gulf Coast distribution hubs, the SPR temporarily loaned nearly 300,000 barrels to refineries that relied on the Gulf for supply. The oil was returned to the SPR when commercial deliveries returned to normal.

As of Oct. 12, negotiations have been completed for the loan of 300,000 barrels of sweet crude oil to Placid Refining; 1,400,000 barrels to Shell Trading; 1,500,000 barrels to ConocoPhillips; 1,000,000 barrels to Astra Oil; and 1,200,000 barrels to Premcor. Updates and information on SPR are available at <http://fossil.energy.gov/>. ❖

Wireless technology being implemented at Hanford Site

The performance of routine tasks in the waste tank farms at the Department of Energy's (DOE) Hanford Site in Washington State is moving into the 21st century with the use of wireless technology. Technicians are using ruggedized Tablet PCs to record and access information while performing preventive maintenance on instruments in the field, and remotely operated cameras are reducing the need for workers to enter the tank farms.

CH2M HILL recently gave a demonstration of the two wireless applications to Roy Schepens, Manager, and John Swailes, Assistant Manager of the Tank Farms Project, in DOE's Office of River Protection (ORP). CH2M HILL is ORP's prime contractor with responsibility for retrieving for treatment and disposing of approximately 53 million gallons of radioactive and hazardous waste stored in 177 underground tanks, arranged in groups or "farms" at Hanford.

Instrument technicians are piloting the use of Intermec CT 60, a five-pound portable computer built to military specifications for use in the field, especially in hot, dusty locations. The unit has a flat screen that is easily read in both bright sunlight and low-light conditions.

Traditionally, a paper copy of the work package accompanies tank-farm workers on the job. For preventive maintenance, the instrument technician usually records information on the work package and sends the hard copy

data record forward for manager approval. Following approval, a clerk enters the information into the Job Control System, the current Hanford Site work management and planning application. The entire process takes about a week before the preventive maintenance record is available electronically.

With a wireless Tablet PC, the technician electronically records data in the field. The technician then checks, approves, and sends the data forward for manager approval. Upon approval, the electronic data becomes an official record. The process is estimated to take a maximum of two days. In addition to quicker data availability, the wireless technology improves data accuracy and reliability.

Schepens and Swailes also viewed and operated from an administration building a camera 20 miles away at the Hanford Site tank farm. Such cameras are being installed at the tank farms to monitor fence lines and check gates and security points.



Michael Geffre, a fieldwork supervisor for CH2M HILL Hanford Group demonstrates the ruggedized Tablet PC to Roy Schepens (left) and John Swailes (right).

A "canopy" of wireless capability was in place by the end of summer to support the use of remote cameras and Tablet PCs. "We are looking forward to the advantages of the widespread implementation of the wireless technology in tank farm work," Schepens said. "The savings in time and improvements in data access, availability and reliability will enhance our ability to safely retrieve, treat, and dispose of the tank waste." ❖

NEW ON THE *Internet*

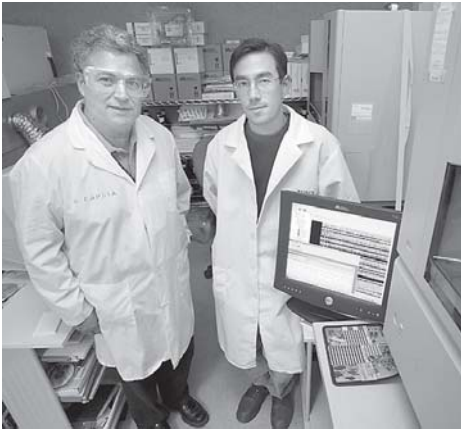
Quantum Universe web site

The High Energy Physics Advisory Panel (HEPAP) has advised the Federal Government on the national program in experimental and theoretical high-energy physics research since 1967. HEPAP reports to the Director of the Department of Energy's (DOE) Office

of Science and the National Science Foundation's (NSF) Assistant Director for Mathematical and Physical Sciences. As directed by DOE and NSF, a panel committee chaired by particle physicist Persis Drell, Director of Research at DOE's Stanford Linear Accelerator Center, has prepared a report on the

Quantum Universe. The report is available on a new Quantum Universe web site, <http://www.interactions.org/quantumuniverse/>. The web site describes the quest to explain the universe in terms of quantum physics, which governs the behavior of the microscopic, subatomic world. ❖

Missing genes may explain plague bacterium's virulence



An international team of researchers led by biologists Emilio Garcia (left) and Patrick Chain (right) of the Department of Energy's (DOE) Lawrence Livermore National Laboratory has found that a genetic factor may be responsible for the virulence of the plague bacterium. By comparing the genome of the plague bacillus, *Yersinia pestis*, with the almost-identical DNA sequence of *Yersinia pseudotuberculosis*, the researchers discovered that the inactivation of several hundred genes as the plague bacterium evolved may be largely responsible for the germ's fearsome lethality.

The research, conducted in conjunction with the Yersinia Research Unit of the Institut Pasteur in Paris, France, and several other organizations, including DOE's Oak Ridge National Laboratory, was reported in September 2004 in the online edition of the *Proceedings of the National Academy of Sciences*. It suggests that natural selection may have led to the inactivation of genes that tended to suppress *Y. pestis*' lethality. The genome sequencing was part of a "Bio-foundation Initiative" funded by DOE's Chemical and Biological Nonproliferation Program. ❖

Test facilities will help protect nation's infrastructure



In August 2004, the Department of Energy's (DOE) Idaho National Engineering and Environmental Laboratory (INEEL) opened two new facilities for testing computer-aided control systems. The DOE-sponsored National SCADA Test Bed, operated in collaboration with the Department's Sandia National Laboratories, will test Supervisory Control and Data Acquisition systems, commonly used within electrical power distribution. The Control System Security and Test Center is sponsored by the Department of Homeland Security (DHS).

The testing facilities leverage research capabilities from other INEEL test beds—including a wireless telecommunication system and a power transmission structure—and at other DOE national laboratories. The test beds will allow customers to visualize the effects of a cyber attack on a control system. Currently, INEEL has working relationships with over 30 utility companies and equipment manufacturers.

At the opening ceremony are, l-r, Hank Kenchington, DOE Office of Energy Assurance; Dave Sanders, DHS; Laurin Dodd, INEEL National Security Director; and Paul Kearns, INEEL Director. ❖

Savannah River resumes shipments of legacy materials



Shipments of depleted uranyl nitrate (DUN) and depleted uranium oxide (DUO) resumed in August 2004 from the Department of Energy's (DOE) Savannah River Site. The shipments were put on hold in February 2004 due to budget constraints. By the end of Fiscal Year 2004, the Site had made all authorized shipments on schedule to support F Area deinventory and deactivation. About 23,000 55-gallon drums of DUO and 100,000 gallons of DUN are stored in F Area.

DUN is being sent to the Materials and Energy Corporation in Oak Ridge, Tenn., for treatment before final disposition at DOE's Nevada Test Site. To date, more than 50,000 gallons of DUN, about 40 percent of the total, have been shipped. Rail shipments of DUO are moving out for disposition in above-grade lifts at Envirocare in Clive, Utah. To date, about 18 percent of the total DUO has been shipped. At left, pallets of DUO drums are loaded into a boxcar. ❖

Hanford tank farm workers achieve major cleanup milestone

On Aug. 23, 2004, the Department of Energy's (DOE) Office of River Protection (ORP), CH2M HILL Hanford Group, guests, and employees celebrated the completion of a major cleanup accomplishment at DOE's Hanford Site—the removal of all pumpable liquids from 149 single-shell underground radioactive waste storage tanks. The transfer of liquids from the older single-shell tanks to safer, double-shell storage tanks for interim stabilization began in the early stages of Hanford cleanup. A more aggressive schedule initiated in 1999 kept the project on track and led to completion six months ahead of schedule.

“You have all done a wonderful job,” Roy Schepens, Manager, ORP, told the workers. “By completing projects like this early, we can shift our resources to other work in Hanford's tank farms to the next phase of tank waste cleanup—the retrieval of the sludges and solids that still remain in the single-shell tanks.”

At right, workers and guests sign a congratulatory banner at the ceremony. ❖



LLNL dedicates two new research centers

The Department of Energy's Lawrence Livermore National Laboratory (LLNL) dedicated two new research centers on Sept. 23, 2004. One center will conduct basic science in biosecurity and environmental biology. The other will link advances in LLNL bioscience with the outside medical community.

The BioSecurity and Nanosciences Laboratory (BSNL) serves as an incubator for exploratory science at the boundaries of chemistry, materials science, and biology and seeks to advance state-of-the-art technology to detect, identify, and characterize biological molecules and their function. At the Center for Biotechnology, Biophysical Sciences and Bioengineering, academic and private researchers can partner with any number of scientists to work on emerging medical, bioscience and environmental technologies.

Both centers focus on assembling multidisciplinary teams and work on cutting edge technology. At right, LLNL analytical chemist Keith Coffee talks to the news media about LLNL's BioAerosol Mass Spectrometer, one of the technologies being advanced in the BSNL. ❖

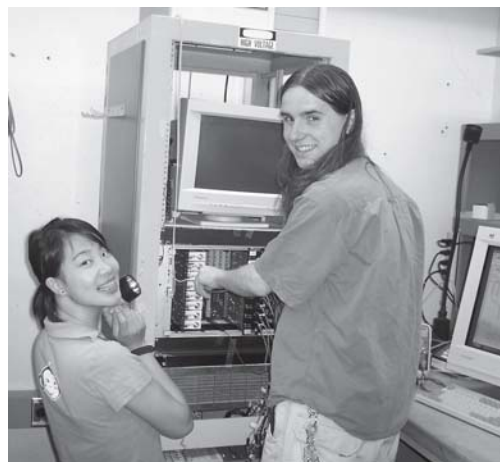


QuarkNet students experience real work at Fermilab

Four Illinois high school students had the opportunity this past summer to experience the real-life environment and challenges of scientists at the Department of Energy's (DOE) Fermi National Accelerator Laboratory. Participants in the QuarkNet education program, the students spent eight weeks soldering electronic equipment, writing code for computer programs, analyzing data from particle physics experiments, standing shifts in a particle detector control room, and attending lectures and collaboration meetings.

“They basically did everything that a first-year graduate student researcher would do here at Fermilab,” said physicist Don Lincoln of the DZero detector experiment. In the photograph, students Julia Ye (left) and Paul Bierdz test high voltage supplies for the DZero experiment.

The QuarkNet program brings high school students and teachers together with particle physicists at local universities or research laboratories across the country. Support is provided in part by DOE's Office of Science and the National Science Foundation. ❖



Early career scientists, engineers earn honors

At a White House ceremony on Sept. 9, 2004, seven researchers funded by the Department of Energy (DOE) received the 2003 Presidential Early Career Award for Scientists and Engineers. The Presidential award is the highest honor bestowed by the U.S. Government on outstanding scientists and engineers who are beginning their independent careers. The 2002 awards were presented May 4, 2004 (*DOE This Month*, June 2004).

A total of 57 researchers supported by eight Federal Departments and agencies were honored. Each researcher received a citation, a plaque, and a commitment for continued funding of their work from their agency for five years. Dr. John Marburger, Director, Office of Science and Technology Policy, presented the awards.

"The work of these young scientists and engineers is an excellent example of the kind of innovative and forward-looking research that our nation needs to meet the challenges of the 21st century," Secretary of Energy Spencer Abraham said. "Their work will help to contribute to our energy

security and independence far into the future."

Before the White House ceremony, the seven researchers described their work at a DOE Headquarters ceremony hosted by Under Secretary of Energy David Garman. At the event, four scientists from DOE national laboratories received the DOE Office of Science Early Career Scientist and Engineer Award for 2003. The winners are:

- **Tamara G. Kolda**, Sandia National Laboratories/California, for her innovative research in algorithms and software for scientific computing;
- **Saskia Mioduszewski**, Brookhaven National Laboratory, for her studies of the properties of the unusual matter formed in extremely high-energy nuclear collisions;
- **Margaret S. Torn**, Lawrence Berkeley National Laboratory, for her use of carbon and oxygen isotopes to better understand and model carbon cycling; and
- **Jian Shen**, Oak Ridge National Laboratory, for his pioneering approach to the study of magnetism in nanostructured materials.

Three university researchers received the Office of Defense Programs Early Career Scientist and Engineer Award for 2003 for their work in support of DOE's National Nuclear Security Administration. The winners are:

- **Catherine E. Snelson**, University of Nevada, Las Vegas, for her contributions to the characterization of the geologic structure of the Las Vegas, Nev., basin;
- **Donald P. Visco, Jr.**, Tennessee Technological University, Cookeville, for his fundamental insights into solving inverse molecular design problems; and
- **Brian D. Wirth**, University of California, Berkeley, for his computational dynamics studies of dislocations and defects in metals, primarily those resulting from irradiation.

Prior to their current positions, Snelson and Wirth worked at DOE's Lawrence Livermore National Laboratory.

Biographical information on the winners and their award citations are available at <http://www.sc.doe.gov>. ❖

NNSA employee wins Service to America Medal

For the second year in a row, an employee of the Department of Energy's National Nuclear Security Administration (NNSA) has earned a prestigious Service to America Medal. Nicole Nelson-Jean, who directs DOE's office in Tokyo, Japan, received the award at a ceremony in Washington, D.C., Sept. 28, 2004. She was recognized for her nonproliferation work in Russia, including leading a delegation of U.S. security specialists and engineers to the Arctic Circle to build a multimillion-dollar training and service center for Russian nuclear material and weapons security.

Under Secretary of Energy for Nuclear Security and NNSA Administrator Linton Brooks presented Nelson-Jean her medal, praising her work before giving her the award.

"The agreement she helped strike has led to the creation of a multimillion-dollar facility in Russia dedicated to ensuring that dangerous nuclear materials never fall into the wrong hands," Administrator Brooks said. "We are proud of her outstanding work. Clearly, the best is yet to come from this remarkable young woman."

One year after joining NNSA, Nelson-Jean facilitated the signing of the bilateral agreement to secure former Soviet nuclear materials and weapons. The agreement had been in negotiations for over a year and was at an impasse until the task was handed to Nelson-Jean. Once the agreement had been signed, she began leading delegations of security specialists and engineers to the Arctic Circle to work with the Russian Navy

to establish the Kola Technical Center. Nelson Jean worked with the Russian Navy and Russian contractors to develop training programs, technical center designs, and construction schedules. In the process, she gained the trust and respect of her Russian counterparts.

The Service to America Medals were created in 2002 by the Partnership for Public Service, a nonpartisan, nonprofit organization dedicated to recruiting and retaining excellence in the Federal workforce, and the Atlantic Media Company, publisher of *Government Executive*, *National Journal*, and *The Atlantic Monthly*. The national awards program honors the achievements of career Federal employees. ❖

Research DIGEST

Scientists at the Department of Energy's **Brookhaven National Laboratory** (BNL) have discovered a key mechanism in the brains of people with human immunodeficiency virus (HIV) dementia. The study is the first to document decreases in the neurotransmitter dopamine in those with the condition, and may lead to new, more effective therapies. HIV dementia is a type of cognitive decline that is more common in the later stages of HIV infection. The study appears in the September 2004 issue of the British scientific journal *Brain*. "Our results offer the first evidence of dopamine terminal injury—specifically injury to dopamine transporters—in HIV dementia patients," says BNL physician Gene-Jack Wang. "This suggests that a decrease in transporters may contribute to the disease process." Wang also says that the findings suggest that HIV patients with dementia may benefit from dopamine-enhancing treatments. The study was funded by the Office of Biological and Environmental Research in DOE's Office of Science and the National Institute on Drug Abuse. (Karen McNulty Walsh, 631-344-8350)



Using a state-of-the-art microscope and new computerized imaging technology, researchers at the Department of Energy's **Oak Ridge National Laboratory** (ORNL) have pushed back the barrier of how small we can see—to a record, atom-scale 0.6 angstrom. ORNL also held the previous record of 0.7 angstrom. An angstrom is an atomic scale unit of measure of one ten-billionth of a meter, approximately equaling the diameter of an atom. As reported in the Sept. 17, 2004, issue of the journal *Science*, researchers obtained the improved resolution with ORNL's 300-kilovolt Z-contrast scanning transmission electron microscope (STEM), aided by an emerging technology called aberration correction. The ORNL researchers teamed with Nion Company, Kirkland, Wash, which provided the aberration correction technology that corrects errors introduced to images by imperfections in the electron lenses. Although conceived decades ago, aberration correction technology only recently was made feasible by advances in computational techniques and image-analysis algorithms. (Bill Cabage, 865-574-4399)

Researchers at the Department of Energy's **Argonne National Laboratory** and the University of Chicago have determined the crystal structure of sortase B, an enzyme found in the bacteria that cause staph and anthrax. The structure could provide the first clue in developing a treatment for the infections. The research was published in the July 14, 2004, issue of the journal *Structure*. Now that the researchers understand the enzyme, they hope to find a way to stop it—or at least to slow it down. Sortase attaches proteins to the surface of bacterial pathogens. These proteins help the pathogens survive and flourish. "Sortase would be a good target for a drug, because if one can block the enzyme, it will not be able to attach these proteins to the surface and the bacteria would not be able to get iron from our bloodstream," said Andrzej Joachimiak, lead researcher and Director of Argonne's Structural Biology Center. "We need to study more proteins from these genomes to better understand their biology and therefore be able to treat them or control them. We know so little so far." (Donna Jones Pelkie, 630-252-5501)



Untapped reserves of methane, the main component in natural gas, may exist deep in Earth's crust, according to research conducted by a team of scientists from the Department of Energy's **Lawrence Livermore National Laboratory** (LLNL) and **Argonne National Laboratory**, Carnegie Institution's Geophysical Laboratory, Harvard University, and Indiana University, South Bend. Using a diamond anvil cell, the scientists squeezed materials common at the Earth's surface—iron oxide, calcite (the primary component of marble), and water—to pressures ranging from 50,000 to 110,000 atmospheres and temperatures of more than 2,500 degrees Fahrenheit to create conditions similar to those found deep within the Earth. The result was that methane formed by combining the carbon in calcite with the hydrogen in water. "The results demonstrate that methane readily forms by the reaction of marble with iron-rich minerals and water under conditions typical in Earth's upper mantle," said LLNL researcher Laurence Fried. "This suggests that there may be untapped methane reserves well below Earth's surface."

The results were published in the Sept. 13-17, 2004, early online edition of the *Proceedings of the National Academy of Sciences of the United States of America*. (Gordon Yano, 925-423-3117)



Scientists at the Department of Energy's **Los Alamos National Laboratory** have developed a theory describing light pulse dynamics in optical fibers that explains how an interplay of noises, line imperfections, and pulse collisions lead to the deterioration of information in optical fiber lines. The theory will help to enhance the performance necessary for high-speed optical communication systems like video on demand and ultra-broadband Internet, and the research has helped establish a new field of inquiry—the statistical physics of optical communications. In addition to the theoretical advance, the team developed, and subsequently patented, a new technique called the pinning method that is capable of reducing the negative impact of optical fiber structural disorder and improving high-speed optical fiber system performance. (Todd Hanson, 505-665-2085)



A geographic computer system is being added to the traditional tools archaeologists use to help find and map historical sites on the Department of Energy's 890-square-mile **Idaho National Engineering and Environmental Laboratory** (INEEL) desert site. Scientists in INEEL's Ecological and Cultural Resources Department developed a computer program—dubbed the Data Management Tool (DMT)—that merges data about the history, anthropology, and archaeology of the terrain into one integrated system. INEEL computer scientist Sera White demonstrated the system at the August 2004 Environmental Systems Research Institute International User Conference in San Diego, Calif. White's method of connecting multiple databases to a single geographic interface is one of the first of its kind, she says. Because of its seamless integration, researchers can easily dip into each database to customize maps according to their needs. They can also create new maps to display selective types of information. (John Walsh, 208-526-8646) ♦

A-76 study solicitation for IT services released

During the past year, a team of employees from the Department of Energy's (DOE) Office of the Chief Information Officer (CIO) and DOE program offices reviewed information technology (IT) functions across the Department in accordance with OMB Circular A-76 guidelines. This review led to the Aug. 16, 2004, release of the DOE Information Technology Support Services A-76 Study solicitation, number DE-RP01-04IM00054. The goal of the A-76 study is to promote innovation, efficiency, and greater effectiveness of information technology within the Department.

Significant A-76 pre-implementation activity is expected throughout the Department's IT community as DOE prepares to transition to the service provider. These activities are targeted to run through spring 2005 when it is expected that the service provider will be selected. Planning and implementation activities have been initiated with management, employees, unions, and the DOE human resources support team.

CIO Rosita Parkes recognizes that transition and the uncertainty associated with it can be a trying time for employees across the DOE complex

and is committed to making this transition as smooth as possible. To this end, the CIO office will communicate with all involved to ensure that DOE employees, and the IT community in particular, are kept abreast of issues related to the A-76 competition. The latest A-76 IT study news and frequently asked questions will be posted regularly on the CIO website at <http://cio.doe.gov>. Major milestones associated with the study also are available at the site. Questions or comments may be directed to Carlos Segarra at 202-586-3111 or carlos.segarra@hq.doe.gov. ❖

INEEL assists in international nuclear plant safety

Engineers at the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL), in cooperation with the International Atomic Energy Agency, are promoting nuclear reactor safety worldwide. One tool they are using is a computerized training program.

RELAP5-3D is a computer code developed at INEEL to create computer models of water-cooled nuclear reactors. The training is a customization of RELAP5-3D that focuses on the safety needs of many countries, such as Russia, Slovakia, and Lithuania. Simulating emergencies a reactor might experience, the

program is used for the analysis of accidents in nuclear plants and related systems.

The five disk set contains the audio and visual portions of a 10-part, 78-session slide presentation of RELAP5-3D training materials. The materials describe the code models, input and applications, and include sample problems and example accident simulations. The recordings were developed as part of the Integrated Training and Accident Analysis System for the Kursk 1 Nuclear Power Plant, an RBMK-1000 reactor, which has the same design as the reactor at Chernobyl.

INEEL plans to use the material as part of its RELAP5-3D training courses. Combined with the Internet, small numbers of students at different locations can receive the training without the expense of holding a large class in a single location. Using personal computers, students can select which parts of the training they want to work on at any particular time. And the individual presentations are assigned proficiency levels based on the user's familiarity with the code.

To obtain RELAP5-3D training, contact Gary Johnsen, INEEL, 208-526-9854 or gwj@inel.gov. ❖

'Smart' drilling prototype yields more oil, gas

A Department of Energy (DOE) sponsored technology that allows natural gas and oil explorers to drill safer, more productive wells by using a high-speed, down-hole communications system has achieved a major milestone with the successful testing of a prototype in a full-scale commercial well for the first time. The achievement puts the technology, called Intellipipe™, on the fast track to commercialization.

"This is the type of innovative technology that will help make sensible use of our nation's oil and gas supplies now and in the future," Secretary of Energy Spencer Abraham

said. "Costs in oil and natural gas industries increase exponentially, leaving well operators to guess what they will encounter at deeper depths. By removing the guesswork, this remarkable pipe technology will make oil and gas wells more productive, which reduces costs and is safer for the environment."

Intellipipe is a drill pipe with built-in telemetry that can operate thousands of feet below the surface. The system is able to transmit large bits of data to the surface as a well is being drilled. About one million bits of information—including temperature, geology, pressure, and rate of penetration—can

be transmitted in a single second. Data going in the other direction is relayed just as quickly, allowing operators to direct the drill bit almost instantaneously and more precisely toward oil- and gas-bearing sweet spots, and away from less productive areas.

The system was developed by Novatek Engineering in Provo, Utah, with funding from DOE. Intellipipe attracted the attention of a global leader in drill pipe technology, Grant Prideco Inc. of Houston, Texas, which invested in the system. The two companies have formed a joint venture, IntelliServe™, to market the revolutionary drill pipe. ❖

Researchers study how Earth heals itself

The Department of Energy's (DOE) Savannah River National Laboratory (SRNL) is coordinating a project that looks at nature's own ability to clean chlorinated solvents from groundwater and how to apply the new science to help understand that process. Results of the three-year project are expected to accelerate cleanup by a minimum of 10 years for DOE sites that have groundwater plumes contaminated with chlorinated solvents. At Savannah River Site, the project is expected to make it possible to accelerate chlorinated solvent cleanup by at least 20 years.

DOE initiated the Monitored Natural Attenuation (MNA)/Enhanced Natural Attenuation (EA) Project last year. A technical working group of nationally recognized scientists, coordinated by SRNL's Dr. Brian Looney, is guiding the project's scientific and technical direction, working with researchers across the United States. The product of the project will be a technical guidance document that is suitable for use across the DOE complex in evaluating MNA and EA as potential tools in remediating solvent-contaminated groundwater sites.

"We have at our disposal a vast toolbox of methods for cleaning up contaminated groundwater," Looney says. "Some contamination calls for

very aggressive treatment using large amounts of energy and chemicals. At the other end of the spectrum, there are situations where the best approach is to stand back and allow natural mechanisms, like naturally occurring microbes, to break down or isolate the contaminants. In those cases, the human's only role is to monitor the process, to make sure that nothing is interfering with nature's ability to work. That approach is called monitored natural attenuation.

"Then there's another type of situation, when all nature needs is a little assistance, such as the addition of nutrients to stimulate microbes to do their work," Looney adds. "This is known as enhanced attenuation. The trick is first to know which situation calls for which approach, and then to assure that any enhancements are sustainable."

The technical working group identified several key concepts and technical areas to be explored and developed. Ideas for research



Researcher Maggie Millings, Savannah River National Laboratory, presents test apparatus for calibration studies to be conducted before field testing begins.

projects were solicited from scientists, engineers, and technology developers across the nation. Fourteen research projects were selected from ideas submitted by industry, universities, national laboratories, and Federal agencies. Field test sites at the Savannah River Site were identified for those projects that required such a site. All of the research projects are now in progress and are to be completed within 22 months ❖

2005 Fuel Economy Guide available online

According to the *2005 Fuel Economy Guide* released by the Department of Energy (DOE) and the Environmental Protection Agency (EPA), hybrids again lead the list of fuel-efficient vehicles for the new model year. The hybrid-electric, manual transmission Honda Insight is number one with 61 miles per gallon (mpg) in the city and 66 mpg on the highway. The Toyota Prius hybrid electric vehicle follows with 60 mpg in city driving and 51 mpg on the highway. Debuting at 12th in overall mileage and first in the SUV class is the Ford Escape hybrid two-wheel

drive vehicle at 36 mpg in the city and 31 mpg on the highway.

DOE and EPA provide several online sources for more fuel economy information. The agencies' joint web site, <http://www.fueleconomy.gov>, offers detailed information on vehicle fuel economy, including a complete version of the Fuel Economy Guide. The fuel economy information goes back to 1978, which can be helpful for buying used cars. The web site also includes emissions information, the Department of Transportation's safety data for model year 2005 vehicles, and fuel-saving tips for

drivers. Printed copies of the Fuel Economy Guide will be available at car dealerships, public libraries, and credit unions later this fall.

Comprehensive information about EPA's Fuel Economy Program is available at <http://www.epa.gov/fueleconomy>. EPA also has posted the model year 2005 data on the Green Vehicle Guide web site, <http://www.epa.gov/greenvehicles>, to give consumers a better picture of fuel economy and automobile emissions. Consumers can locate the cleanest running and most fuel-efficient vehicles that meet their needs. ❖

People IN ENERGY

Cherry A. Murray, Senior Vice President for Physical Sciences and Wireless Research at Bell Labs, Lucent Technologies, has been named Deputy Director for Science and Technology at the Department of Energy's Lawrence Livermore National Laboratory (LLNL). The appointment is effective Dec. 1, 2004. Murray, a nationally recognized physicist, joined Bell Labs in 1978 as a member of the technical staff and held a number of positions until being named senior vice president in 2001. She is a member of the National Academy of Sciences, National Academy of Engineering, and American Academy of Arts and Sciences, and was named one of the "50 Most Important Women in Science" by *Discover Magazine* in 2002.



Ted Saito, a senior staff engineer at the Department of Energy's Lawrence Livermore National Laboratory, has received the Exceptional Public Service Award from the U.S. Department of Defense for his work in nonproliferation policy at the Pentagon from September 2002 to June 2004. Saito served as special assistant to the Director for Nonproliferation Policy, Office of the Assistant Secretary of Defense for International Security Policy, and in the Office of the Under Secretary of Defense for Policy, working on various treaties to prevent the international spread of nuclear weapons.

Several Department of Energy researchers and professionals are the recipients of 2004 honors presented by the Hispanic Engineer National Achievement Awards Corporation (HENAAC) in recognition of their outstanding technical achievements and community service. The winners are: Outstanding Technical Achievement Award - **Aaron Diaz**, Nondestructive Characterization and Measurement Sciences Group, Pacific Northwest National Laboratory, and **Michael Kaminski**, Nanoscale Engineering Group, Argonne National Laboratory (ANL); Albert V.

Baez Award - **Juan J. Ramirez**, technical and programmatic consultant, Sandia National Laboratories (Sandia); Luminary Award - **Robert Longoria**, researcher and manager, Sandia; **Richard Marquez**, Associate Director for Administration, Los Alamos National Laboratory; and **Giselle Sandi**, chemist, ANL.

Engineer **Steve Hering** of the Department of Energy's Idaho National Engineering and Environmental Laboratory is the recipient of the 2004 Mishima Award presented by the American Nuclear Society. The award honors the late Yoshitsugu Mishima, University of Tokyo professor, and recognizes scientific and engineering achievements that have important implications to the science and technologies of nuclear fuels and materials development. Hering received the award for his work on transmuted fuels for light water reactors.

John Wolf of the Radioactive and Hazardous Waste Management Division at the Department of Energy's Lawrence Livermore National Laboratory received the "Young CHMM of the Year" award at the recent national meeting of the Academy of Certified Hazardous Materials Managers (ACHMM). Wolf was recognized for his accomplishments in the hazardous materials management, environmental, and health and safety fields. He also received a "Champion of Excellence" award for his work as President of the Academy's Northern California Chapter.

Alan Goldman is the new Division Director for Science and Technology at the Department of Energy's (DOE) Ames Laboratory. Most recently, Goldman was a professor at Iowa State University (ISU) and a senior physicist at Ames Lab. He served as Chairman of the ISU Department of Physics and Astronomy from 1999 to 2002 and as interim director of ISU's International Institute of Theoretical and Applied Physics. Goldman began his

career at ISU and Ames Lab in 1988. He was an associate scientist at DOE's Brookhaven National Laboratory from 1984 to 1988.

James Tarpinian, Assistant Laboratory Director for Environment, Safety, Health and Quality at the Department of Energy's Brookhaven National Laboratory has received the 2004 Joyce P. Davis Memorial Award from the American Academy of Health Physics. The award was presented to Tarpinian in recognition of his service and for upholding the ethical and professional standards of the academy. An academy member since 1984, Tarpinian served as a director from 1997 to 1999 and as the academy's president in 2002.



Barry Lafler of the Chemistry Department at the Department of Energy's Brookhaven National Laboratory (BNL) has received the 2004 J. Allen Alexander Award from the American Scientific Glassblowers Society. Lafler has been working with glass for 35 years, the last 12-plus of them as BNL's scientific glassblower. The award recognizes Lafler for his contributions in furthering the society's goals to share and promote the knowledge of scientific glassblowing. Lafler creates custom-made glassware that cannot be purchased and modifies and repairs existing scientific glassware for any BNL department or division.

Physicist **Jim Beene** and materials scientist **Steve Zinkle** recently were named UT-Battelle corporate fellows in recognition of their sustained and outstanding research contributions at the Department of Energy's Oak Ridge National Laboratory (ORNL). Beene has been with ORNL's Physics Division since 1976 and currently is Director of the Holifield Radioactive Ion Beam Facility. Zinkle joined ORNL as a Wigner fellow in 1985 and currently is leader of the nuclear materials science and technology group in the Metals and Ceramics Division. ❖

Milestones

YEARS OF SERVICE

October 2004 Headquarters

Chief Information Officer - Deborah M. Henderson (30 years), Laverne M. Smith (30), Delores Barnes (25), Marjorie A. Greenwood (25), Barbara A. Griffin (25). **Economic Impact & Diversity** - Brenda J. Degraffenreid (30). **EIA** - Carol L. French (25), Zdenek D. Nikodem (25). **Energy Efficiency & Renewable Energy** - Ronald V. Santoro (35). **Environment, Safety & Health** - Joseph F. Weiss (30). **Environmental Management** - Gerald M. Kassalow (25), Mark E. Rawlings (25).

FERC - Linda L. Mitry (35), Robert R. Czarick (30), Charles F. Hannan (30), Karen E. Leblanc (30), John S. Leiss (30), Diane H. Harley (25), John K. Hawk (25), Janet K. Jones (25), Frank A. Sparber (25), Elizabeth W. Zerby (25). **Fossil Energy** - Larine A. Moore (35), Robert L. Kane (30). **Legacy Management** - Vijendra P. Kothari (25).

Management, Budget & Evaluation - Sherry S. Reid (35), Sheila J. Adams (25), Michael P. Fischetti (25), Marilyn E. Stone (25), Brenda A. Washington (25), Bonny K. Woods (25). **NNSA** - Edward F. Mastal (40), Phillip R. Baca (35), Orvis W. Taylor (30), Celedon Aragon (25). **Nuclear Energy** - Carl J. Sink, Jr. (25). **Policy & International** - Jeffrey E. Skeer (25). **Radioactive Waste** - Albert C. Williams (25). **Security & Safety Performance Assurance** - Brenda W. Holder (25).

Field

Albany Research Center - Hon-Chung Ko (30), Noma A. Rietmann (25). **Bonneville Power** - Georgette L. Jarvis (35), Mike J. Kreipe (35), Jerry J. Liebrecht (35), John E. Shumate (35), Dorothy L. Betzing (30), John A. Brant (30), Edward J. Brost (30), Michael R. Caldwell (30), Larry G. Docken (30), Marvin W. Hettinger (30), Ronald A. Morinaka (30), Albert V. Mouton (30), David F. Ray (30), Mark L. Roberts (30),

John J. Soy (30), Rodney Braxton (25), Robert G. Fouse, Jr. (25), Cynthia J. Horvath (25), Mitchell L. Lindeken (25), Joseph V. Matkevich (25), Michael L. Overeem (25), Lori L. Pitzer (25), Fevrel W. Pratt (25), Albert L. Stouder (25).

Chicago - Frank F. Gorup (35). **Los Alamos Site/NNSA** - Lee F. Le-Doux (25), Daniel O. Romero (25). **NETL** - Bradley C. Bockrath (30), James M. Ekmann (30), Thomas J. George (30), Susan D. Laczko (30), H. Mitchell Spengler (30), James T. Yeh (30), F. Dexter Sutterfield (25). **NNSA Service Center** - Christopher J. Baca (30), Pecolia B. Sharts-Meadows (30), Harriet A. Garcia (25), Morton A. Lankasky (25), Elizabeth L. Osheim (25), Gloria J. Woods (25). **Oak Ridge** - Kathy L. Cox (30), George C. Manthey (30), Darlene D. Ahlers (25), Catherine A. Fallon (25), Billy E. McSpadden, Jr. (25).

Ohio - Derrick J.C. Franklin (30). **Rocky Flats** - John A. Stover (30). **Savannah River** - Linda R. Wright (30). **Southwestern Power** - George E. Baxley (25). **Strategic Petroleum Reserve** - Katherine G. Batiste (30), Lionel J. Gele, Jr. (30). **Western Area Power** - Jimmie S. Black (30), Carol A. Capps (30), Scott T. Hicks (30), John A. Moore (30), Daniel T. Payton (30), Michael D. Ryan (30), Michael C. Wilson (30), Robert L. Adams (25), Stanley J. Adcock (25), David L. Holland (25), Jerome D. Jeschke (25).

RETIREMENTS September 2004 Headquarters

Chief Information Officer - Linda L. Painter (35 years). **EIA** - George L. Baker (35). **Environment, Safety & Health** - Susan S. Adamovitz (20), James T. Bachmaier (27), C. Rick Jones (31), Gail F. Kleiner (36), Dee M. Young (34). **-FERC** - Robert K. Arvedlund (36), Robert T. Catlin (25), Thomas A. Celentano (26), Alice M. Fernandez (25), Yvonne Owens (29), Willie L. Oxendine (33), Joan E. Ross (37), Dwight B. Siddell

(34). **-NNSA** - Martin W. Conley (28). **-Radioactive Waste** - Michael L. Wolfe (18). **Secretary of Energy Advisory Board** - Mary L. Keaton (20).

Field

Chicago - Melba E. Acciari (25). **-NETL** - Kenneth S. Askew (32), Benjamin C.B. Hsieh (16). **Nevada Site/NNSA** - Leilani R. Peters (16). **NNSA Service Center** - James K. Efishoff (30), Barbara J. Hilton (22), Jones H. Hom (31). **-Ohio** - Lisa G. Kosko (25). **Pacific Northwest Site** - Randall F. Brich (20). **-Richland** - Benjamin F. Burton, Jr. (20), James E. O'Connor (25). **Western Area Power** - Hugh G. Miller (20). ❖

NEW Publications

National Renewable Energy Laboratory (NREL) 2003 Research Review (NREL/BR-840-36178) is a 28-page publication with in-depth articles on several technologies and advances at the Department of Energy laboratory. Also covered are NREL news, awards and honors received by the laboratory, and patents granted to NREL researchers. The publication is available at <http://www.nrel.gov/docs/fy04osti/36178.pdf>.

Office of Inspector General (IG) reports: **Internal Controls Over the Accountability of Computers at Sandia National Laboratories, New Mexico** (DOE/IG-0660); **National Security Laboratories' Annual Reporting of the Nuclear Weapons Stockpile Assessment** (DOE/IG-0661); **Inspection of Intelligence Oversight Activities at Selected Field Sites** (INS-O-04-01). The reports are available at <http://www.ig.doe.gov>. ❖

DOE awards contract to complete FFTF closure

A \$235 million small business contract has been awarded to SEC Closure Alliance, LLC of Hanford, Wash., to complete the deactivation and closure of the Fast Flux Test Facility (FFTF) at the Department of Energy's (DOE) Hanford Site by 2011. The FFTF is a 400-megawatt liquid-sodium cooled nuclear test reactor in Hanford's 400 Area, about 13 miles north of Richland, Wash.

"This small business-led alliance offers the best value to the taxpayer to complete the closure of the reactor," Secretary of Energy Spencer Abraham said. Alliance team members include SEC Federal Services Corporation, Los Alamos Technical Associates Inc., Parallax Inc., Hart Crowser Inc., Framatome Inc., and Resources Consultants Inc.

Current contractor Fluor Hanford has been deactivating the reactor since 1992 and is removing fuel, draining sodium from the cooling loops, and taking down ancillary facilities. The FFTF Closure Project includes completing the deactivation and decontamination of FFTF and its support facilities, completing removal and shipment of remaining fuel to appropriate storage, disposition of the bulk sodium, and completing environmental restoration of the area consistent with the industrial use designation of the site. DOE expects to issue a Record of Decision on the final disposition of FFTF by late 2005.

October 2004

AROUND DOE

Bonneville Power honored for conservation efforts

The Alliance to Save Energy has named the Department of Energy's Bonneville Power Administration (BPA) a "Star of Energy Efficiency." BPA is being recognized for promoting conservation as a cost-effective resource and pursuing innovative applications of energy efficiency to solve electricity transmission grid reliability and congestion problems in the West. Investment in a broad portfolio of innovative energy efficiency and energy conservation programs since the early 1980's enabled BPA to meet almost a third of the total regional load growth of 2,600 megawatts.

BPA has helped fund cost-effective conservation throughout the Northwest through various programs, most of which were carried out by its utility and industrial customers. The agency also has facilitated \$25 million of energy-efficiency improvements at Federal facilities during the past two years.

U.S., Norway to cooperate on emergency response

On Sept. 21, 2004, Deputy Administrator for Defense Nuclear Nonproliferation Paul Longworth of the Department of Energy's National Nuclear Security Administration (NNSA) signed a statement of intent (SOI) with Director General Ole Harbitz of the Norwegian Radiation Protection Authority (NRPA) to reinforce cooperation in nuclear emergency management. The agreement between NNSA and NRPA affirms a strong commitment by the United States and Norway to bolster the International Atomic Energy Agency's (IAEA) emergency preparedness and response capacity and to encourage IAEA member states to accede to and implement the Conventions on Assistance and Early Notification.

"It is very important for countries to strengthen emergency response capabilities, especially given recent terrorist events," Longworth said. "We are proud to cooperate with the government of Norway in this important arena."

NNSA's Office of International Emergency Management and Cooperation (IEMC) will work with Norwegian counterparts under the SOI. The office works with foreign governments and international organizations to enhance worldwide emergency response capabilities and helps develop programs and infrastructure to protect the public, workers, and environment. IEMC also provides vital support to the IAEA, including radiation detection equipment. ❖

United States
Department of Energy (PA-40)
Washington, DC 20585

Official Business