



Chu, D'Agostino Travel to Russia

DOE leadership focuses on U.S.-Russia cooperation on civil nuclear power, nuclear nonproliferation

Energy Secretary Steven Chu and NNSA Administrator Thomas D'Agostino travelled to Russia this month, where they highlighted the tremendous potential for mutually beneficial cooperation and shared economic opportunities. The areas discussed included: innovative clean energy technology, safe and reliable civilian nuclear power, best practices in energy efficiency, and nuclear nonproliferation.

While there, Chu and D'Agostino

toured St. Petersburg Seaport to review radiation detection systems installed in cooperation with the NNSA's Second Line of Defense (SLD) program. NNSA is working in partnership with Russia to ensure that all the country's border crossings are equipped with detection equipment by the end of this year. The SLD program's global goal is to have detection equipment set up at approximately 650 sites in 30 countries. More than half of those sites are in Russia, where almost 250 sites are already up

and running.

D'Agostino also attended a symposium where he stressed the importance of converting research reactors to the use of low enriched uranium. Reactor conversion is "a vital international security priority" and "vital to the nuclear security agenda outlined by our two presidents," said D'Agostino. In addition to discussing the research reactors program in his remarks D'Agostino highlighted the strong partnership between the United States and Russia on global nuclear nonproliferation efforts.

Feds Feed Families Campaign

For the third year, DOE and NNSA are participating in the "Feds Feed Families" campaign in partnership with the Office of Personnel Management (OPM) and other Federal agencies.

Earlier this month, NNSA Administrator Thomas D'Agostino helped the DOE kick off the campaign to assist local food banks in replenishing supplies during the summer months.

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DOE and NNSA KICK OFF CAMPAIGN: From left to right, Mike Kane (DOE), Thomas D'Agostino and Kimberly Rasar (NNSA) at the Feds Feed Families Campaign kick off event in Washington, D.C.

Administrator's Corner



For many of us, May and June are the months when our children get out of school and we begin to think about our

summer vacation plans. It means getting some time off with our families, going to the pool, or taking the children to camp.

But, in these tough economic times, summer also means severe shortages of the non-perishable food items at the food banks serving our communities. It also means the end of free school lunch programs for at-risk children, which exacerbates the problem for many of our most vulnerable neighbors.

As NNSA employees, we understand the meaning of service.

We serve our country with honor and pride each and every day. But we also know that serving our country begins with serving our community.

That is why I am proud to serve alongside DOE's Chief Human Capital Officer, Mike Kane, as co-chair of the Department's Feds Feed Families Campaign for the second consecutive year.

Last year, across the government, federal employees collected 1.7 million pounds of non-perishable goods for families who really needed it. At DOE, we raised an astonishing 300 percent of our Department goal, collecting more than 120,000 pounds of food for needy families in the communities we call home.

Great success brings even greater expectations. The bar this year has been set even higher. The goal for the federal government this year is to collect 2 million pounds of food. For the Department of Energy, our goal is to collect 132,000 pounds of food before Aug. 31. To help us reach that goal, I've asked NNSA's own Kimberly Rasar to help champion the effort throughout the Department and she is already bringing a lot of energy and enthusiasm to the campaign.

It is a tall order, but I know the spirit and generosity of our workforce. Last year I was incredibly proud of the work you did in shattering our Department's goal. Working together, I know we can do it again.

Thank you in advance for your support in ensuring that thousands of Americans do not go hungry this season.

Tom D'Agostino

Feds Feed Families Campaign Begins

(continued from page 1)

"The Feds Feed Families campaign is a great opportunity to help those in need during the summer season when food banks traditionally see a drop-off in donations and children lack access to free school lunch programs," said D'Agostino. "At the Department of Energy and NNSA, we know that serving our country begins with serving our community. That is why I am proud to co-chair the Department's Feds Feeds Families Campaign for the second consecutive year."

DOE and NNSA, in partnership with the Office of Personnel Management (OPM) and other Federal agencies are participating in

the nationwide effort. D'Agostino and DOE's Chief Human Capital Officer Mike Kane once again serve as DOE campaign co-chairs.

For this summer's campaign, which concludes on Aug. 31, OPM has set DOE's goal at 132,000 pounds of non-perishable good. The overall federal goal is two million pounds. Last year, DOE exceeded its goal of 38,485 pounds of non-perishable goods by 300 percent with 120,014 pounds of donations.

NNSA employees can participate throughout the summer by dropping off non-perishable food items in boxes located throughout the Forrestal, Germantown and L'Enfant buildings, or at site offices.

For more information, visit www.fedsfeedfamilies.gov.



EMPLOYEES HELPING OTHERS: The Feds Feed Families Campaign will run through August 2011.

NNSA's Pantex Plant Hosts Annual Security Protection Officers Team Competition

Security protective officers from across the NNSA recently participated in the annual Security Protection Officer Team Competition (SPOTC) at NNSA's Pantex plant.

More than a hundred security officers from 19 nuclear facilities across the U.S. and Canada tested the skills necessary to be a security protection officer while protecting the most secure facilities in the world.

"This intense competition tests the necessary skills of our security protective force needed in protecting and securing of NNSA's national labs and sites," said Brad Peterson, chief and associate administrator for Defense Nuclear Security. "It is important that NNSA trains its security protection officers while improving the way we do business and keeping security at the forefront."

The competition utilized a variety of courses set up at the Pantex firing range which tested the abilities of the participants to move, communicate and shoot in a variety of conditions. The courses were designed to replicate situations an officer might experience in a real world scenario and that involve a variety of weapons and strenuous physical tests.

During the opening event, the Sydnor Award was presented to Pantex Capt. Randy Stokes. The final day of the competition featured the Super Teams Competition; the biggest and most intense element of the competition.



INTENSE COMPETITION: The 39th annual DOE Security Protection Officer Team Competition (SPOTC) was held recently at NNSA's Pantex Plant. Savannah River Site (pictured above) was the overall winner of the super team event. Other winners included Sandia National Laboratories as the overall winner for the DOE 3-man team – one of SPOTC's top five awards.



Y-12 EMPLOYEES ANSWER THE CALL FOR HELP:

Responding to an appeal by the Appalachian Chapter of the American Red Cross, Y-12 employees pitched in to help fellow Tennesseans in the wake of unprecedented spring storms and severe flooding in the region. During the drive, Y-12 employees raised a total of \$10,528.02 for disaster relief in Tennessee.

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NNSA LDRD Symposium Focuses

Researchers from across the national nuclear security enterprise gathered for the fourth annual NNSA Laboratory Directed Research and Development (LDRD) Symposium earlier this month at the University of California Washington Center.

The symposium, "Innovation Advancing Nuclear Security," focused on science and technology that benefits the Department of Energy, NNSA and other national security partners' missions of nuclear deterrence, non/counter-proliferation, and nuclear energy.

"As we invest in the future of research across our enterprise, the LDRD program is a vital tool for promoting world-class science, technology and engineering that can solve vitally important national problems," said NNSA's Deputy Administrator for Defense Programs Don Cook.

Technical topics included actinide materials science and chemistry, nuclear and plasma physics, and high performance modeling and simulation.

The symposium featured LDRD technology advancements from Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Sandia National Laboratories, Nevada National Security Site, and NNSA plants. Symposium topics included nuclear counterterrorism, arms control and treaty monitoring, and countering biological and chemical threats. Technical talks and posters relevant to nuclear security were presented by NNSA laboratory researchers. DOE Senior Advisor of the Office of the Secretary, Victor Reis led a panel discussion on research and development challenges for nuclear security.

Keynote presenters included: Deputy Secretary of Energy Daniel Poneman; NNSA Deputy Administrator for Defense Programs Don Cook; Associate Director White House

Office of Science and Technology Policy Phil Coyle; and Commissioner Nuclear Regulatory Commission William Ostendorff.

The LDRD program promotes innovative and exploratory research to respond to present national security mission needs and to anticipate future ones. The program funds projects that pursue technological solutions to the most urgent challenges facing the nation or that promote science and engineering foundations that lead to new research and development.

The LDRD program constitutes one of the principal means to seed innovative

"As we invest in the future of research across our enterprise, the LDRD program is a vital tool for promoting world-class science, technology and engineering that can solve vitally important national problems."

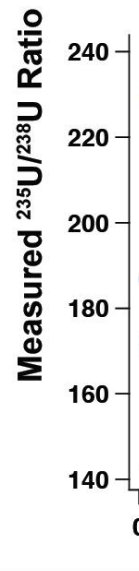
Don Cook
NNSA's Deputy Administrator for
Defense Programs

science and new research directions. Based on ideas that come from current research challenges or bold original concepts that anticipate the nation's future needs, LDRD projects make it possible for the NNSA's top scientists and engineers to pursue leading-edge R&D that keeps NNSA's sites at the forefront of science and technology in its mission areas.

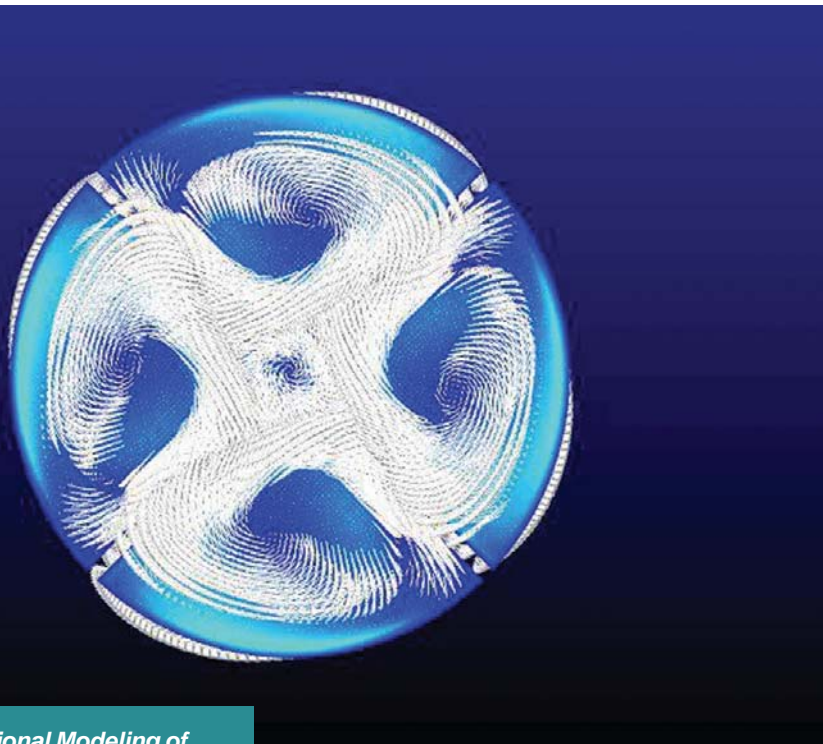
"LDRD invests to build capabilities and explore new solutions, acting as an "advance scout" for the stockpile stewardship program," said Jamileh Mogin, director of NNSA's Office of Institutional Programs

The same science and engineering benefits other nuclear missions like nonproliferation and nuclear energy, preparing us for the hard problems that underlie those NNSA responsibilities."

Computational
Nuclear W
Poster by
Thermal an



Workshop on Advancing Nuclear Security



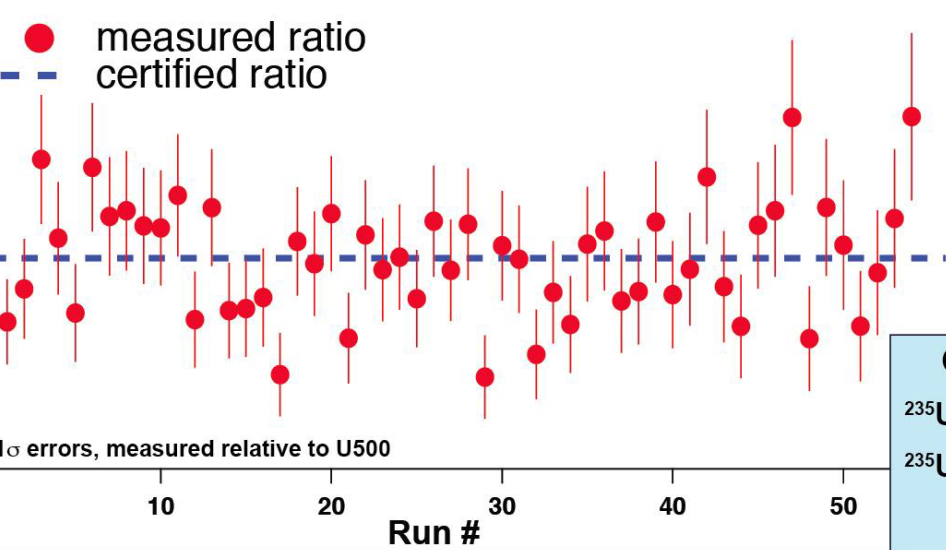
Computational Modeling of Nuclear Waste Reprocessing. Rekha R. Rao, Sandia Thermal and Fluid Processes.

Two LDRD Researchers Tie

More than 30 technical posters were showcased at the 2011 LDRD Symposium. Registrants of the symposium were given the opportunity to vote for the best poster. The posters were judged on technical excitement, contribution to national challenges and effectiveness of communication. There were two awards for best poster due to a tie.

Kim Knight of Lawrence Livermore National Laboratory's Chemical Sciences Division won for her poster titled "Nuclear Forensics: An Integrated Approach for Rapid Response," and Rekha R. Rao, Sandia Thermal and Fluid Processes, was recognized for her poster titled "Computational Modeling of Nuclear Waste Reprocessing."

Standard-bracketed sample (U970) analyses demonstrate presently achievable accuracy



CRM970 (U₃O₈)	
²³⁵ U/ ²³⁸ U _{cert}	= 186.77
²³⁵ U/ ²³⁸ U _{meas}	= 185.16
(1σ) ±	1.76
χ ²	= 1.10

Nuclear Forensics: An Integrated Approach for Rapid Response. Poster by Kim Knight, LLNL Chemical Sciences Division.

The Science of Nuclear Security

LANL, LLNL Make Element, Mineral Impact

Lawrence Livermore National Laboratory (LLNL) and Los Alamos National Laboratory (LANL) have both made element and mineral news. Elements 114 and 116 discovered by LLNL and Russian collaborators received official status and the mineral "Terrywallaceite" has been named after Terry Wallace, LANL principal associate director for Science, Technology and Engineering.

Elements 114, 116 Formally Recognized

Elements 114 and 116 – numbers that refer to the number of protons in their nuclei and which give them their unique boxes on the table – have received official status by the International Union of Pure and Applied Chemistry. The elements were discovered by LLNL scientists and Russian collaborators from the Joint Institute of Nuclear Research in Dubna, Russia.

That official status gives the scientists who discovered them the right to name the elements. The Russia-LLNL team will propose names for the new elements, which currently have the temporary number-based names, ununquadium and ununhexium, respectively.

The elements only last for a millisecond by slamming two lighter elements together in hopes that they merge, and in the case of 114 and 116, they did.



LLNL AND RUSSIAN COLLABORATION: In 1990, LLNL's Ken Moody (left) and Ron Loughheed (center) joined Academician Yuri Oganessian (right), head of the Flerov Laboratory of Nuclear Reactions in Dubna, Russia, to toast the beginning of what became a 21-year collaboration to create superheavy elements.

Mineral Named After LANL's Terry Wallace

LANL's Principal Associate Director for Science, Technology and Engineering Terry Wallace has been granted prestigious honor of having a mineral named after him.

The International Mineralogical Association Commission on New Minerals, Nomenclature and Classification officially added "Terrywallaceite" to its roster of known minerals.

Terrywallaceite is an extremely rare silver-based mineral that was discovered in 2005 about 180 miles southeast of Lima, Peru, by William Pinch and characterized by a University of Arizona mineralogy team led by Robert Downs.

The slender, needle-like metallic-black crystals of Terrywallaceite were found in the Julcani Mining District of Peru. Julcani is situated in the Peruvian Andes (average elevation of 13,000 feet above sea level). The area has been mined for silver and gold since colonial times.

The Downs team suggested the name Terrywallaceite in honor of Wallace's long-time work on silver minerals and his service to the mineral-collector community. Wallace was a professor of geosciences at the University of Arizona and a curator specializing in silver minerals for the university's mineral museum.



TERRYWALLACEITE: LANL's Principal Associate Director for Science, Technology and Engineering Terry Wallace has been granted the prestigious honor of having a mineral named after him.

"I am honored and humbled that a group of geoscientists and peers would suggest naming a mineral after me and that the international nomenclature committee would concur," Wallace said. "I am quite fortunate to have worked for over 30 years on silver minerals and mineralogy, and I have a keen interest in the silver deposits of the central Andes, so this is a special honor to me."

NNSA Announces Procurement of Capacity Computing Clusters to Support Stockpile Stewardship at National Labs

NNSA recently announced an award of a contract for up to \$89 million to Appro – a leading developer of high-performance Linux cluster computing systems based in Silicon Valley – to bolster computing for stockpile stewardship at its three national security laboratories.

Under the terms of the contract, which was awarded by the Advanced Simulation and Computing (ASC) Program, Appro will provide computing systems that will have an aggregate total "capacity" computing capability of three petaflops (quadrillion floating operations per second) for \$39 million as initial delivery. NNSA has the option to purchase more computing systems at a later date

for a total award of \$89 million. Capacity computing systems are designed to run a large number of jobs simultaneously on a single system.

This strategy allows NNSA's more powerful supercomputers, or "capability" systems, to be dedicated to the largest and most complex calculations critical to stockpile stewardship. High performance computing (HPC) is a cornerstone of NNSA's Stockpile Stewardship program to ensure the safety, security and reliability of the nation's nuclear deterrent without testing. The computational resources of the three labs are supported by NNSA's ASC program.

NNSA's new capacity

computing systems, called the Tri-lab Linux Capacity Cluster 2 (TLCC-2), will be NNSA's second joint procurement of this type and will replace those procured in 2007, which are now nearing retirement. This tri-lab procurement model reduces costs through economies of scale based on standardized hardware and software environments at the three labs.

Advances in computational technology, enabled in part by NNSA's computing initiatives, have brought down the cost of HPC systems from approximately \$100,000,000 per teraflop in 1995 to less than \$17,000 per teraflop today, a factor of 6000.

Long Careers of Dedicated Service

The NNSA has existed as an autonomous part of the Department of Energy for more than 11 years. But much of the organization's workforce has been working on its mission for longer. And in some cases, much, much longer. The extraordinary careers of Russ Hibbs and Tommy Thompson span decades of NNSA's history.

At each stage in his long career, starting in 1943, Hibbs has contributed to national security and the NNSA mission. From his time in the Marine Corps and the Central Intelligence Agency, to his work for the Department of Energy and then the NNSA, Hibbs has a long history of national service. During his nearly seven decade-long career, Hibbs became an expert in a broad set of areas including nuclear security and nonproliferation efforts related to export controls; international safeguards and the physical protection of nuclear materials and facilities worldwide; counter-nuclear terrorism efforts; the functions of the International Atomic Energy Agency; and the security of shipboard nuclear weapons. Most recently, Hibbs

substantially assisted NNSA and the international nuclear security community in finalizing the fifth revision of the IAEA's Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities – one of the first accomplishments from the President Obama's historic 2010 Nuclear Security Summit Work Plan.

Another gentleman who has seen the history of the NNSA mission develop and evolve through the years to where we are today is James "Tommy" Thompson. Just last month, Thompson celebrated the remarkable milestone of 60 years of service at the Y-12 National Security Complex. Beginning as a helper in the Inspection



Russ Hibbs



Tommy Thompson

(continued on page 8)



2011 NONPROLIFERTION GRADUATE FELLOWSHIP PROGRAM: NNSA recognized the 2011 Nonproliferation Graduate Fellowship Program (NGFP) class on May 31, 2011. The NGFP is a full-time, 12 month program which provides fellows with specialized training and practical experience working in programs designed to detect, prevent and reverse the proliferation of weapons of mass destruction and mitigate the risks from nuclear operations.

NNSA Forms Multi-institution Consortium

NNSA has awarded \$25 million to the University of California, Berkeley, to lead a multi-institution consortium to support the nation's nuclear nonproliferation mission through the training and education of experts in the nuclear security field.

The five-year grant establishes the National Science and Security Consortium (NSSC), also known as SUCCESS PIPELINE, which stands for Seven Universities Coordinating Coursework and Experience from Student to Scientist in a Partnership for Identifying and Preparing Educated Laboratory-Integrated Nuclear Experts.

The program focuses on hands-on training of undergraduate and graduate students in the fields of nuclear physics, nuclear and radiation chemistry, nuclear

engineering, nuclear instrumentation and public policy.

"Investing in the scientific and technical underpinnings of our program is critical to implementing the President's nuclear security agenda and to preventing nuclear terrorism or nuclear proliferation."

Anne Harrington
NNSA Deputy Administrator for
Defense Nuclear Nonproliferation

"Investing in the scientific and technical underpinnings of our program is critical to implementing the President's nuclear security agenda and to preventing nuclear terrorism or nuclear proliferation," said NNSA Deputy Administrator for Defense Nuclear Nonproliferation Anne Harrington. "As we push the boundaries of science and discovery,

partnerships like the National Science and Security Consortium are a vital part of our effort to invest in the future of our programs by building a strong pipeline of new technical talent to our laboratories."

The consortium brings together more than 100 researchers from Michigan State University; UC Davis; UC Irvine; the UC Institute on Global Conflict and Cooperation based in San Diego; the University of Nevada, Las Vegas; and Washington University in St. Louis.

Consortium participants will collaborate with Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory and Sandia National Laboratories. The consortium also brings together affiliates from Historically Black Colleges and Universities, Hispanic-Serving Institutions and their connections, and ten primarily undergraduate colleges.

Long Careers of Dedicated Service (continued from page 7)

Department at age 22, Thompson has worked as chemical operator in the Alloy Development Program, engineering aide in Development, supervisor in the Metal Preparation Division and foreman in the H-1 Foundry. And since the 1970's, Thompson has brought his wealth of experience and talents to bear in the continued melting and casting of uranium metal.

Taking different paths over their long careers, both these men have come to exemplify the dedication, expertise and professionalism of the NNSA workforce.