

**SCIENCE**

## DELTA M makes a difference with ORNL expertise

In the early 1980s, ORNL was just beginning to explore transfer of technology from the lab to industry. Now it's the norm, and one historical example illustrates the long-term benefits.

Reg McCulloch worked for ORNL's Engineering Technology Division from 1975 to 1985. His research focused on the design and development of fuel rod simulators so that simulated fuel rod tests could be conducted outside a nuclear reactor core. He was also working to reduce the size and enhance the effectiveness of thermocouples—instruments used to measure temperature. McCulloch knew ORNL's work held big benefits for industry as DELTA M Corp. was born in 1983.

"Everything we do is measured by a delta," McCulloch said, referring to the term used to designate such differences: "Delta temperature, delta voltage or other deltas."

DELTA M's first products used cutting edge research and new manufacturing techniques that were part of McCulloch's work at ORNL.

"The technology to make heater assemblies and thermocouples to measure temperature was not well known," said DELTA M President A.D. White. "Reg and his team developed techniques for fabricating these devices that didn't exist before"

DELTA M has grown from McCulloch and two other techs from ORNL—Ralph Dial and Ken Finnell—to over 20 employees and it has also further evolved ORNL-based technology. The thermocouples McCulloch worked on are now routinely manufactured and more

robust than earlier versions, resulting in a less expensive and more effective nuclear tool. The thermocouples are used in DELTA M's gamma thermometers. McCulloch said DELTA M is the only company that has been able to make a successful gamma thermometer.

Last July, DELTA M started licensing agreements with General Electric for the gamma thermometers, and the company anticipates fully turning over the technology to GE in early 2015. Unlike current nuclear reactor power measurement instruments, a DELTA M gamma thermometer can be

left in a reactor's core to constantly measure power because of its ability to withstand extremely high temperatures.

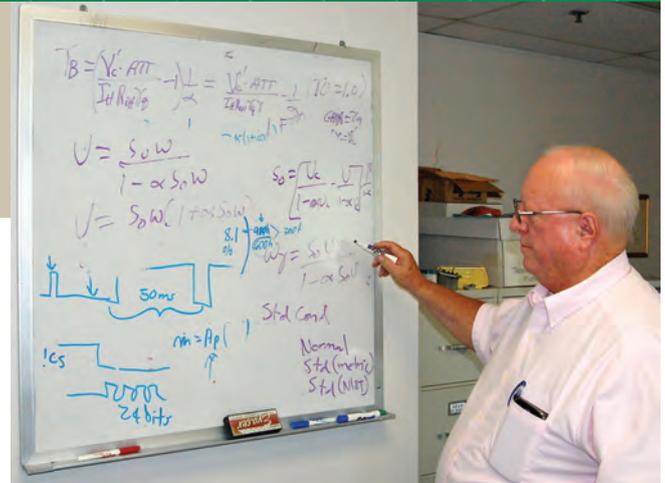
GE plans to install a large number of gamma thermometers into a reactor core with each thermometer

outfitted with multiple thermocouples. The thermometers provide vital in-situ calibration that produces a 3-D map of a reactor's core power. Visualizing a reactor in this way has both power and monetary benefits.

"If you can do this accurately, you can increase the average core power by 1 or 2 percent, and that's worth millions of dollars a year for each reactor," McCulloch said.

Licensing a product such as the gamma thermometers to a large company was one of the motivating factors for starting DELTA M in the first place. While McCulloch and White are enjoying the company's current success, they continue to look to the future.—Chris Samonay

**'If you can do this accurately, you can increase the average core power by 1 or 2 percent, and that's worth millions of dollars a year for each reactor.'**



Former ORNL researcher Reg McCulloch looks over nuclear equations. McCulloch says close ties with ORNL contributed to the success of his spin-off company, DELTA M.

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## Hobson family has worked in Oak Ridge for over 60 years



*Pictured above, left to right, are Ric, Lindsey, Kim, Steve and Tanner Hobson. (Photo by Jason Richards)  
Pictured left is the late Claude Hobson Jr.*

**Four generations of the Hobson family** have been an Oak Ridge constant for more than 60 years thanks to the arrival in 1952 of Claude Hobson Jr.

“It all started with my grandfather’s drive and desire to better himself,” said Claude’s grandson, Steve Hobson, who works in ORNL’s Information Technology Services Division.

Claude began work at K-25 in the Roads and Grounds Department. Moving to ORNL in 1957 to work in the Engineering Department as a designer and drafter, he designed a collapsible shovel for NASA that was destined for the Moon. Claude also created life-like line drawings of ORNL award winners for inclusion in the Lab’s bi-weekly newspaper.

Claude’s son, Ric, began his ORNL career more than 30 years ago in californium processing at Y-12. After a number of years, Ric moved to a new physical location at the Lab. Ric now works in the Robotics Process Development Division where he has been part of many science-based technology projects, including target development for the SNS. Ric’s fondest memory is being

part of the charcoal bed remediation project at the Molten Salt Reactor Experiment (MSRE) where he removed uranium from charcoal deposits that were created during testing.

Ric’s younger brother, Lindsey, worked as a construction manager with DOE-ORO for a number of years, managing such projects as construction of the round-about in front of the ORNL Visitors Center. Lindsey has worked at every site in the Oak Ridge complex, overseeing and participating in projects at ORNL, Y-12 and K-25. He also supported the ORNL Natural Resources group in 2012.

Steve Hobson, Claude’s oldest grandson, followed his grandfather’s lead to earn a design degree and worked for many years in the computer integrated drafting and design industry. The computer aspect resonated more than drafting as he directed his career toward computer support and even owned a small retail computer business for a time. In 2006, Steve joined ORNL and began working with the Laboratory director’s office supporting the Leadership Team. In his words, it was “a great experience.” Steve still occasionally supports the Leadership Team, but has since transitioned to server support. As ORNL’s mobile device server administrator, Steve supports Blackberry, Good, Boxtone and the latest XenMobile.

Kim Hobson, Steve’s wife, began working at ORNL as an IT process consultant in 2009. After more than 25 years in commercial contracting, including a previous stint at ORNL from 1995-97, she became an ORNL employee in 2012. Kim is a project manager in the Nonproliferation Systems Group where she manages a software development project for the DOE Office of Intelligence and Counterintelligence and is part of the leadership team for a Project Management Institute (PMI) award-winning project for NNSA.

Tanner, Steve’s son and Claude’s oldest great-grandson, recently completed his third summer internship at ORNL. His internship this past summer has focused on assisting a group with creating a program to automatically classify fossils by species based on an image taken of them, to continue analysis on other diseases and their spread, and to do research for classifying fraud from bitcoin transactions.

“From a shovel destined for the Moon to tracking viral outbreaks in the United States, our family is proud of the contributions we have made at ORNL,” Steve said. “I believe my grandfather would be proud, as well.” 🌱

*Reporter* is published for retirees of ORNL, which is managed by UT-Battelle for the U.S. Department of Energy.

**Fred Strohl**  
Editor

(865)574-4165  
strohlhf@ornl.gov

**Bill Cabage**  
**Chris Samoray**  
Writers

**Cindy Johnson**  
Design and Layout

## ORNL hosts American Conference on Neutron Scattering

ORNL's Neutron Sciences Directorate hosted the 2014 American Conference on Neutron Scattering at the Knoxville Crown Plaza June 1-5.

The seventh conference in the series featured research from the world's leading neutron scientists, including more than 400 researchers from more than 30 countries. The conference featured a combination of invited and contributed talks, poster sessions, tutorials and industrial exhibits.

ORNL Director Thom Mason was the featured ACNS 2014 banquet speaker with a talk titled "Neutron Scattering: Past, Present and Future." Knoxville Mayor Madeline Rogero welcomed the ACNS group on the opening day of the conference. 🌱



ORNL Director Thom Mason addresses the American Conference on Neutron Scattering at the Southern Depot in Knoxville. (Photo by Genevieve Martin)

## Parks named Nuclear Security & Isotope Technology Division director

Reactor & Nuclear Systems Division Director Cecil Parks has been named director of the Nuclear Security & Isotope Technology Division. He will continue in the dual capacity until his successor in RNSD is identified.

Cecil joined ORNL in 1978 after receiving his bachelor's and master's degrees from North Carolina State University and doctorate in nuclear engineering from the University of Tennessee. Before directing RNSD, he was deputy and then acting director of the Nuclear Science & Technology Division.

Associate Lab Director for Nuclear Science & Engineering Alan Icenhouer thanked John Begovich for serving as interim NSITD director. 🌱



Cecil Parks

## Institute of Functional Imaging of Materials formed

ORNL's Physical Sciences and Computing and Computational Sciences directorates have formed the ORNL Institute for Functional Imaging of Materials.

Sergei Kalinin of the Imaging and Nanoscale Characterization Group at the Center for Nanophase Materials Sciences is directing the institute and reports to Michelle Buchanan, associate laboratory director for physical sciences. The institute is comprised of staff from multiple ORNL organizations, reflecting the multidisciplinary nature of next-generation imaging sciences.

The institute builds upon existing ORNL strengths in imaging, theory and data analytics with a goal of developing next-generation imaging capabilities, including the ability to study structure, dynamics and functionality under real conditions. These capabilities will revolutionize the Lab's ability to understand materials and chemical processes and will enable the design of materials with properties specifically tailored for next generation energy technologies. 🌱



Sergei Kalinin



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## Service Anniversaries

## June 2013

**40 years:** **Dennis Benker** and **Alfred Hendricks**, Facilities Management; **Paul Allen Taylor**, Nuclear Security & Isotope Technology; **Connie L Begovich**, Information Technology Services; **James Roberto**, Science & Technology Partnerships; **Albert Devaney**, Research Reactors

**35 years:** **Sheila Walker** and **Willis Poore III**, Reactor & Nuclear Systems; **Dean Campbell**, Nonreactor Nuclear Facilities; **Michael Uzzle**, Nuclear Security & Isotope Technology

**30 years:** **Karen Sue Harber**, Biosciences; **Tony Hendricks**, Office of Integrated Performance Management; **Dollie Neal**, Facilities Management; **Jamie Payne**, Communications; **Bob Bryant**, Information Technology Services; **Jacqueline Williams**, Laboratory Protection; **Lisa Brown**, Technology Transfer

**25 years:** **Timothy McKnight** and **Peter John Chiaro Jr.**, Electrical & Electronics Systems Research; **Shaun Scott Gleason**, Computational Sciences & Engineering; **Charles Timothy Goins**, **John Gilley Jr.**, and **Ivan Hunter**, Facilities Management; **Chris Smith**, Research Reactors; **Eddie Wright Justice**, **Gene Beck Jr.**, **Wanda Massengill** and **Ricky Lynn Hall**, Logistical & Fabrication Services; **Gregory Scott Hackler**, Utilities; **Chester Carpenter Jr.**, Integrated Operations Support; **Shirley Marie Sexton** and **John Scircle**, Nuclear & Radiological Protection; **Randall Snipes** and **James Sumner**, Nuclear Security & Isotope Technology; **Douglass Gregory Rowland**, Research Accelerator; **Janice Greenwood**, Information Technology Services; **John Shonder**, Energy & Transportation Science; **William Robbins**, Human Resources

**20 years:** **Costas Tsouris**, Energy & Transportation Science; **Joel Reed**, Computational Sciences & Engineering; **Igor Remec**, Reactor & Nuclear Systems; **Carol Wood**, Environmental Sciences; **Young Soo Kwon**, Research Reactors; **Sonya Sharp**, Nonproliferation, Safeguards & Security

## July 2014

**40 years:** **Shirley Waters**, Materials Science & Technology; **Douglas Parrish**, Research Accelerator; **Linda Poole**, EESD Safety & Business Operations

**35 years:** **Nancy Dudney**, Materials Science & Technology; **Angela Alford**, Reactor & Nuclear Systems; **Curtis Hammond**, Research Reactors; **Bruce Peterson**, Energy & Transportation Science; **Jon Bartlett**, Acquisition Management Services; **Mark Spann**, Facilities Management; **Rick Stephens**, Information Technology Services; **Katherine Martin**, Electrical & Electronics Systems Research

**30 years:** **Carlos Albert Irizarry**, Instrument & Source; **Keith Buckles**, Integrated Operations Support; **Lora Lee Wilcher**, Human Resources; **Gary Fraker**, Facilities Management; **John Powell**, Environmental, Safety, & Health

**25 years:** **Donnie Green**, **Angela Hamby**, and **Michael Smith**, Logistical & Fabrication Services; **Kim Yvette Drew**, Biosciences; **William Battle Fellers** and **Jackie McCowan**, Facilities Management; **Benjamin Kelmers** and **Donna Hicks**, Information Technology Services; **Scott Hollenbeck**, PSD Integrated Research Operations; **David Conner**, Instrument and Source Design; **Diana Dowdell**, International Security & Analysis; **Lisa Jeanne Bowie**, Nuclear & Radiological Protection; **Richard Collins**, Research Accelerator; **Timothy McIntyre** and **Kathleen Prater Gambrell**, Electrical & Electronics Systems Research; **Rena Humphrey**, Physical Sciences; **Sandy Lowe**, Center for Nanophase Materials Sciences

**20 years:** **Paul Bryant**, Research Reactors; **Mitchel John Doktycz**, Biosciences; **Balasubramaniam Radhakrishnan**, Computer Science and Mathematics; **Michael Plaster**, International Security & Analysis

## August 2014

**40 years:** **Alan M. Krichinsky**, Nuclear Security & Isotope Technology; **Steve Abercrombie**, Integrated Operations Support; **Randy Nanstad** and **James Keiser**, Materials Science and Technology; **Terry Wright Christie**, Facilities Management

**35 years:** **Zane W Bell**, Nuclear Security & Isotope Technology; **Claire Maddux Chitwood**, Legal; **Richard Jones**, Electrical & Electronics Systems Research; **Dennis Martin Weaver**, Facilities Management

**30 years:** **Cindy Kendrick**, Technology Transfer; **Marilyn Langston**, Information Technology Services; **Steven Jerome Wyatt**, Research Reactors; **Samuel Wood**, Office of Integrated Performance Management

**25 years:** **W. George Askew**, Office of Integrated Performance Management; **Donald Williams Jr.**, Reactor & Nuclear Systems; **Jack Stellern** and **Warren Kyle Thomas**, Facilities Development; **Judy Green** and **Rhonda Atwater**, Information Technology Services; **Samuel McKenzie**, Research Accelerator; **Charlie Horak**, Communications; **Ronald Stewart**, Utilities; **Jeff Delashmitt**, Chemical Sciences; **Melissa McBee**, Acquisition Management Services; **Deborah Darlene Bounds** and **Tommy William Payne**, Facilities Management; **Todd Skeen**, PSD Integrated Research Operations

**20 years:** **Miguel Rodriguez Jr.**, Biosciences; **Steven Shane Frank**, Electrical & Electronics Systems Research

## Club ORNL events

Get the details and latest news online via <https://info.ornl.gov/sites/clubornl>. Request an XCAMS account, which will allow you to participate in these events or contact Lara James at 865-576-3753 or [jamesla@ornl.gov](mailto:jamesla@ornl.gov).

# THE NEWS

## OAK RIDGE NATIONAL LABORATORY

A Publication for the ORNL Employees of Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation

Vol. 7, No. 9

OAK RIDGE, TENNESSEE

Friday, September 10, 1954

### Tennessee Chapter Of ASTD Elects Catron President

Bert G. Catron, of the ORNL Industrial Relations Division, has been elected president of the first Tennessee chapter of the American Society of Training Directors, it has been announced. Mr. Catron is supervisor of the Training and Methods Department.

The election of officers was made at the first meeting of the group, held on September 2 at the S&W Cafeteria in Knoxville, which was attended by 35 local training directors and associated personnel.

Other officers elected at the meeting were: Darrell Morrison, Tennessee Valley Authority, vice president; David Faulkner, University of Tennessee, secretary; Frank Quinn, Rohm & Haas Company, treasurer; W. E. Nichols, Fulton Sylphon Company, Roger Barringer, Tennessee Eastman Corporation, and Frank Leasman, American Enka Corporation, directors.

One of the local chapter's first items of business was to accept an invitation from the University of Tennessee to cosponsor the Institute for Employment Procedures to be held at U-T next month, at which time the second meeting of the chapter will be scheduled.

#### Founded in 1925

The ASTD is an international organization, which was formed in 1925 with some 300 members and today lists more than 2000 members, with 37 affiliated chapters throughout the United States.

The purpose of the organization is to exchange information on training experiences, ideas, and methods with business, industrial, and educational institutions.

### IRE Will Play Host To AIEE Wednesday

The Oak Ridge chapter of the Nuclear Science Group of the Institute of Radio Engineers will play host to the local American Institute of Electrical Engineers chapter next Wednesday evening. The meeting, to which all interested persons are invited, will be held in the west lounge of Ridge Hall at 7:30 P.M.

The guest speaker will be Dana M. Collier of the ORNL Instrumentation and Controls Division. Mr. Collier, who spent two weeks this summer at the Massachusetts Institute of Technology attending a seminar on transistors, will speak on the subject of "Semiconductors and Transistors."

#### A-PROOF SAFES

A recent story in the New York Herald-Tribune reports that the Railway Express Agency plans to provide cylindrical metal containers in which clients may seal papers or valuables for safekeeping in the Iron Mountain Atomic Storage Vaults near Hudson, N. Y.

### Hafstad Praises Work of Laboratory

**EDITOR'S NOTE:** Last month the Atomic Energy Commission issued invitations to a group of industrial concerns to bid on the design and construction at Fort Belvoir, Va., of a small, transportable nuclear reactor to supply power in isolated locations where ordinary power sources are not feasible. The bulk of the planning and design for this "package" reactor has been carried out at Oak Ridge National Laboratory. For this reason, therefore, the following letter to Dr. Alvin Weinberg, research director at ORNL, from Lawrence R. Hafstad, director of Reactor Development for the AEC, will be of interest to all Laboratory personnel:

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

August 27, 1954

Dr. A. M. Weinberg  
Oak Ridge National Laboratory  
Post Office Box "P"  
Oak Ridge, Tennessee

Dear Al:

Our joint efforts to advance the cause of economic nuclear power passed another milestone last week when we mailed out to a group of industrial concerns the invitations for competitive proposals to design and build the Army Package Power Reactor.

This project, although a small one, is of tremendous importance. It should be especially gratifying to you because it has been developed largely by the foresight and efforts of the Oak Ridge National Laboratory.

Last week, I took part in a press conference, together with the Chief of Army Engineers, and I sized the major role played by the Laboratory in that both I and the military officials press release, design invitations for competitive work by the Laboratory in that both I and the military owed to the Laboratory. In National Laboratory has made and to national defense.

I would appreciate your part of our military associates, if you wish.

### SAM Chapter Sets First Fall Meeting

The Knoxville chapter of the Society for Advancement of Management will hold its first meeting of the fall season next Tuesday evening, September 14. The session will be a dinner meeting, held at Holston Hills Country Club at 7:15 P.M.

Guest speaker for the occasion will be Dr. Wendell Patton, senior associate of Bruce Payne Associates, Inc., Atlanta, Ga. Dr. Patton's topic will be "Why We Don't Make Good Executives."

All SAM members and other interested persons are invited to attend the meeting, which will be preceded by a social period beginning at 6:30 P.M. The charge is \$3.00 for members and \$3.50 for nonmembers. Reservations may be made by calling William O. Graves, Knoxville 2-9621.

### Biology Members Give 12 Papers At AIBS Meeting

The Biology Division of Oak Ridge National Laboratory was well represented at the fall meeting of the American Institute of Biological Sciences. The meeting was held in Gainesville, Fla., September 5-9, and twelve papers by Biology Division staff members were presented. In addition to the speakers, several other division members attended the meeting.

The papers presented at the meeting and their authors are as follows:

"Neurospora Techniques for Large-Scale Studies of Recessive Lethal Mutation"; K. C. Atwood (coauthors, F. Mukai and T. H. Pittenger).

"Chromosome Association and Segregation in Polysomic *Drosophila* Males"; W. K. Baker.

"Gene Interaction and Temperature Response of the Threonine-Inhibited Strain of *Neurospora*"; C. O. Doudney.

"Lack of an Effect of a High Dose of X Rays on Aging in *Paramecium aurelia*, Variety 1"; R. F. Kimball.

## Sixty years ago this quarter

### Taken from ORNL "The News" for Summer 1954

- ORNL's 400-kilovolt Cockcroft-Walton accelerator was removed from the High Voltage Laboratory and shipped to the Vanderbilt University Physics Department for further studies on the structure of the nucleus of the atom.
- A new magnetic tape auxiliary "memory" was added to the Oak Ridge Automatic Computer and Logical Engine (ORACLE) to increase storage capacity to 3.6 million 40-digit numbers – greater than any computers in use at that time.
- ORNL R&D programs received a prominent place in the AEC Sixteenth Semiannual Report. Particularly stressed was the progress made in the fields of reactor technology, radiation chemistry, neutron-diffraction, metallurgy and heavy-particle accelerators.
- Lawrence Hafstad, director of reactor development for the AEC, wrote a letter to ORNL Research Director Alvin Weinberg acknowledging the Laboratory's major contribution for providing the bulk of the planning and design for a small, transportable nuclear reactor to supply power in isolated locations. Reactor construction was planned for Fort Belvoir, Va.
- I.I. Rabi, 1944 Nobel Prize winner for his discovery of nuclear magnetic resonance, was the featured speaker at the ORNL Quarterly Colloquium held at Oak Ridge High School.—prepared by ORNL History Room volunteers

## Internship influenced UT-Battelle Scholar Jana Black



Jana Black in her office at Vanderbilt University.

When Jana Black first interned at ORNL after earning the UT-Battelle Scholarship as an Oak Ridge High School senior in 2006, Peter Cummings in the Lab's Center for Nanophase Materials Sciences was her mentor.

Eight years later, Jana is working on her doctorate in chemical and biomolecular engineering at Vanderbilt. Her advisor is that same Peter Cummings.

"I have to say much of the work I'm doing now is based on my experience as an intern at ORNL," Jana said recently during a phone interview from Nashville. "I credit that internship under Dr. Cummings with setting the path for me."

Jana, the daughter of Dr. William Black of ORNL's Health Services Division and his wife, June, earned her B.S. in chemical engineering from UT before heading to Nashville and Vanderbilt's graduate program that will conclude when she earns a doctorate in chemical and biomolecular engineering.

Her four years at UT provided the strong foundation for what she has accomplished during the past three years at Vanderbilt.

"The scholarship I earned to UT made things much less difficult as far as everything that went into earning my bachelor's is concerned," Jana said. "It took away much of the financial distress one goes through. I knew a lot of people who had to go through that stress, but I'm grateful to UT-Battelle that I didn't have to deal with all of that."

Moving on to Vanderbilt, much of Jana's research work is focused on nanoscale lubrication in hard disk drives. She credits her internship at ORNL for introducing her to the world of advanced computing and setting the stage for the huge role it plays in her current research.

"I'm working on a paper that I hope to get published soon on micro and nano electromechanical systems," Jana said. "I'm planning for this paper to be part of my thesis on industrial nanolubricants."

With three years down in Nashville and two more to go, Jana loves to call the state capital home.

"I like to do a lot of outdoor activities, including running, and the Nashville area provides many venues to enjoy those activities," Jana said. "I also love the music here. People think of Nashville and they immediately think of country music, but there are a lot of different types of music here, as well."

Staying in Nashville after earning her doctorate is one option, but she is not sure what lies down the road two years hence.

"I've thought about maybe going to California because I have family there, but that's still a ways off," Jana said. "Right now, my goal is to earn my doctorate."—Fred Strohl 🌱

## FORNL participates toward establishing an Alvin Weinberg memorial

The Friends of ORNL (<http://www.fornl.info/>) is part of an ongoing effort to create a memorial to honor former ORNL Director Alvin Weinberg.

The Weinberg Memorial Committee has selected three avenues for honoring Weinberg. They include an hour-long DVD/film of his career, a joint effort with the Baker Center to sponsor an annual lecture series-workshop dealing with the issues germane to Weinberg's career and bronze plaques of his likeness with one of his famous quotations at the Graphite Reactor, Oak Ridge Associated Universities and the American Museum of Science and Energy.

The fundraising goal of about \$120,000 remains about \$35,000 short.

FORNL is offering a matching gifts program to its members as part of the fundraising effort. For details, contact Chuck Coutant at 865-483-5976, [ccoutant3@comcast.net](mailto:ccoutant3@comcast.net).

## CORRE annual meeting scheduled Oct. 20

The Coalition of Oak Ridge Retired Employees (CORRE) will hold its annual meeting at 2 p.m. Monday, Oct. 20 at the Heritage Fellowship Church, located along North Illinois Avenue just north of the intersection with Oak Ridge Turnpike.

There will be a mailing to all retirees regarding this meeting. However, the CORRE Board has decided as a cost saving move to discontinue the mailings for future meetings. The intent is to use email distribution, the CORRE website ([www.corre.info](http://www.corre.info)), facility newsletters and the press to publicize the annual meeting.

Therefore it is of utmost importance that if retirees have not provided their email address or have changed their address recently, they provide CORRE with up-to-date email addresses. Please send additions/corrections to Judy Kibbe at [kandjkibbe@comcast.net](mailto:kandjkibbe@comcast.net). 🌱

## From the Lab Director

ORNL has earned eight R&D 100 award winners for this year, extending ORNL's league-leading streak in these awards for the year's most promising innovations.

The winners are:

- Continuously Variable Series Reactor: A collaboration with ORNL inventors **Aleksandar Dimitrovski** and **Burak Ozpineci**.
- Diagnosis Using the Chaos of Computing Systems: Developed by **Nageswara Rao**.
- High Performance Silicon Carbide based Plug-In Hybrid Electric Vehicle Battery Charger: A joint development that included ORNL team members **Laura Marlino**, **Nance Ericson**, **Shane Frank** and **Chuck Britton**.
- Ionic Liquid Anti-wear Additives for Fuel-efficient Engine Lubricants: Another joint development with ORNL principal investigators **Jun Qu**, **Huimin Luo**, **Sheng Dai**, **Peter Blau**, **Todd Toops**, **Brian West**, and **Bruce Bunting**.
- iSPM: Intelligent Software for Personalized Modeling of Expert Opinions, Decisions and Errors in Visual Examination Tasks: Developed by **Georgia Tourassi**, **Songhua Xu**, **Hong-Jun Yoon** and **Sophie Voisin**.
- Portable Aluminum Deposition System: A partnership that includes ORNL's **Sheng Dai**, **Xiao-Guang Sun** and **Youxing Fan**.
- RF-DPF Diesel Particulate Filter Sensor: Included ORNL collaborators **James Parks II**, **Vitaly Prikhodko** and **John Storey**.
- Super-hydro-tunable HiPAS Membranes: Developed by **Michael Hu**, **Matthew Sturgeon**, **Ramesh Bhawe**, **Brian Bischoff**, **Tolga Aytug** and **Tim Theiss**.

The partner organizations and full descriptions can be found in the news release at <http://www.ornl.gov/ornl/news/news-releases/2014/ornl-wins-eight-rd-100s->

**Mike Simpson**, **Lance Snead** and **Jerry Tuskan** are ORNL's three newest Corporate Fellows. Mike, Lance and Jerry represent the span of research at the Lab with their pacesetter work in nanofabrication, radiation effects on materials, and plant systems genomics, respectively.

We have new fellows of ASM International: **Parans Paranthaman**, **Bruce Pint** and former ORNL researcher **Claudia Rawn**, now at the University of Tennessee. This prestigious honor recognizes distinguished contributions to materials science and engineering. Congratulations also are due to **Olivier Delaire**, whose proposal, "Quasiparticle Couplings in Transport of Heat, Charge, and Spin for Novel Energy Materials," was selected for a DOE Office of Science Early Career Award.

ORNL's new Scientific Advisory Board has begun deliberations to assist us in considering future directions for the Laboratory. Members are drawn from other national labs, universities and industry. With the help of a number of staff who assisted with presentations, tours and a poster session on LDRD projects, we were able to give the board members an excellent introduction to our initiatives and plans and they provided valuable feedback that I plan to use in moving the Lab forward.

This year's United Way campaign is under way, led by chair **Ron Crone** and co-chair **Phil Britt**, who hosted UT basketball coach Donnie Tyndall for the campaign kickoff July 7. Ron and Phil are rebuilding a United Way bank of contributors that has been depleted by staff reductions over the past couple of years. I'm calling on Lab staff members to step up and support the United Way charities that play a critical role in our community and I invite our retirees to participate in our campaign as well.

The call is out for volunteers for the Habitat for Humanity build in the Heiskell area that is honoring **Tim** and **Teresa Myrick**. Tim's most enduring legacy from his days at ORNL is the modernized campus. He has played a valuable role in the Oak Ridge High School renovation and in tireless efforts for a number of community causes. If you can lend a hand, join the Habitat for Humanity effort or contribute monetarily.

Thom Mason



ORNL's Jun Qu displays a flask of the Ionic Liquid Anti-wear Additives for Fuel-efficient Engine Lubricants, one of ORNL's eight R&D 100 Award winners. (Photo by Colby Earles)



Oak Ridge National Laboratory  
**Reporter**  
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## ORNL, Smithsonian partner to advance science education

**ORNL and the Smithsonian Institution announced June 12 a new partnership** to support collaborative research programs and science education efforts. This is the first partnership between ORNL and the Smithsonian. A formal signing ceremony was held at the Smithsonian in Washington, D.C.

Both organizations examine many of the world's most complex and time-sensitive scientific problems and support many research programs that complement and reinforce each other. They also support science education to impact students and teachers from elementary school through post-doctoral studies.

"ORNL and the Smithsonian Institution share a commitment to discovery science, interdisciplinary research, improving the public's understanding of science and educating the next generation of scientists and engineers," said ORNL Director Thom Mason, who attended the Smithsonian ceremony. "Combining the extraordinary resources of the Smithsonian with ORNL's distinctive capabilities creates new opportunity in all of these areas."

The two institutions will focus future collaborations on areas they strongly share, such as climate change, human-environment interactions, genomics, computational sciences, bioinformatics, data analytics and STEM education. 🌿



*Wayne Clough, left, secretary of the Smithsonian Institution, chats with ORNL Director Thom Mason and Jeff Nichols, ORNL's associate lab director for computing and computational sciences, during the June 12 ceremony at the Smithsonian in Washington, D.C.*