

SCIENCE

MAXLAB enhances building technologies work at ORNL



Jeffrey Munk, building technologies researcher, examines a heat pump water heater, which is part of the new appliances and equipment laboratory in ORNL's Maximum Building Energy Efficiency Research Laboratory (MAXLAB). (photo by Jason Richards)

ORNL's 40-plus years of building technologies research leading to greater energy efficiency in homes and buildings has taken another step forward with completion of the Maximum Building Energy Efficiency Research Laboratory (MAXLAB).

Located at the intersection of Bethel Valley Road and 5th Street across from various building technologies facilities that have operated at ORNL for decades, MAXLAB opens new research opportunities for ORNL's Building Technologies program and the DOE-designated national user facility known as the Building Technologies Research and Integration Center (BTRIC).

"MAXLAB is now the flagship building for our program and user facility," said Patrick Hughes, ORNL's Building Technologies Program director. "MAXLAB expands our experimental capabilities and sustains ORNL as one of the

top centers in the world for this research. It will enable us to have new equipment and capabilities here that make this one of the top centers in the world for this research. We can now do work here that has not been done before."

The facility provides almost 18,000 square feet of space to conduct lab studies characterizing energy efficiency performance of highly energy efficient wall assemblies, equipment and appliances. It also has chambers that can aid in developing improved heating, ventilation and air-conditioning (HVAC) systems and wall systems. ORNL uses MAXLAB and the rest of the BTRIC's experimental

facilities to develop innovative technologies in partnership with industry leaders such as GE Appliances, Dow Chemical, 3M, Honeywell and ClimateMaster.

It houses a high-bay area for building and characterizing the heat, air and moisture performance of highly energy efficient wall assemblies, as well as a low-bay area to develop and characterize performance of highly energy efficient equipment and appliances. Across the street are two new light commercial building flexible research platforms, which simulate one-story and two-story real-world building environments to develop and characterize the performance of technologies such as wireless sensor networks, controls, fault detection and diagnostics systems. Funded under the 2009 American Recovery and Reinvestment Act,

'MAXLAB is now the flagship building for our program and user facility'

the MAXLAB project enabled ORNL to establish the building and outfit its laboratories with new research apparatus, establish two light commercial building research platforms for system/building integration research and upgrade existing and add targeted new research apparatus in the pre-existing BTRIC labs. Hughes said the MAXLAB project will increase the pace of new technologies emanating from BTRIC, such as four new CRADA collaborations that have occurred in recent years.

In 2012, GE Appliances began operating its first new appliance production line in 53 years in Louisville to manufacture the

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Bill Henry has enjoyed ‘whittling’ away more than 50 years



Bill Henry whittles items such as this birdhouse. (Photos by Carlos Jones).



Since retiring from ORNL almost 30 years ago, Bill Henry has been “whittling away the time.”

Whittling is not just an expression for the 85-year-old former chemical separations operator. It is a form of carving with very small pieces of wood using an ordinary pocketknife.

“I started whittling seriously more than 50 years ago,” Bill said one afternoon while sitting in his dining room in Oak Ridge. “I started making miniature tools and implements of this and that and it seems as if I’ve been whittling ever since. I’ve made thousands of items.”

The top of Bill’s dining room table has all kinds of small items he has whittled, including a bird house, different types of birds, an axe on top of a chopping block, baseball bats, jack straw games each with 25 tiny pieces and miniature tool boxes.

“I probably do this anywhere from 12 to 15 hours a week,” said Bill, who worked 27 years at ORNL. “The nice thing is I can do it when I want to. If I decide on the spur of the moment to start whittling, it doesn’t take long to get into it as I can quickly pick up the wood, knife and start working at it. When I need a break, I can easily put it down with no trouble and go back to it later when I feel like it.”

A life member of the Southern Highland Craft Guild and Foothills Craft Guild, Bill’s business card identifies him as an “itinerant whittler.” He has appeared at educational demonstrations and workshops for years.

“I used to do the Museum of Appalachia’s Homecoming each October and have been honored to do demonstrations several times over the years at the Smithsonian Institution in Washington when Tennessee was the featured state there,” Bill said. “I still have some pieces on display at the headquarters of the Appalachian Regional Commission in Washington.”

While most of his time is now spent at home, Bill gets together with friends about once a week at the Oak Ridge Senior Center where the group whittles together.

“While we whittle, we solve all the problems of the world,” Bill said with a chuckle.

The most important aspect about his craft is that it gives him peace of mind.

“Whittling is relaxing,” said Bill, a widower with two sons and four grandchildren.

“I’ve lived a long life and worked hard. Whittling gives me great satisfaction.”

While Bill doesn’t get out as much as he used to, he still loves to talk about whittling to groups or anyone interested in learning about the craft. He can be contacted at 865-483-0858.—Fred Strohl 🌿

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

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Guides needed for Oak Ridge Public Tour

Volunteer guides are needed for the DOE Oak Ridge Public Bus Tour that in almost 20 years has attracted more than 30,000 participants.

Former employees of DOE Oak Ridge facilities, as well as others who would be interested in conducting the daily three-hour summer tours, are invited to participate in what has become one of East Tennessee’s more popular tourism activities tied in with the American Museum of Science and Energy.

The tours run from noon until 3 p.m. daily with stops at the Y-12 New Hope Center, the New Bethel Church and the Historic Graphite Reactor. There is a script available for tour guides’ reference, but many of the tour participants enjoy hearing stories about Oak Ridge experiences from many years ago conveyed by individuals who were there.

If you would like more information about being a volunteer tour guide, please contact Barbara Penland at 574-3664 (penlandb@ornl.gov). 🌿

HFIR named Nuclear Historic Landmark

The **High Flux Isotope Reactor (HFIR)** has been designated a Nuclear Historic Landmark by the American Nuclear Society (ANS).

“This designation from the ANS recognizes HFIR’s role in the history of the nuclear age, but it also speaks to the excellence of its design and operation,” ORNL Director Thom Mason said. “HFIR remains one of the world’s most capable reactor-based neutron science, radioisotope production and materials irradiation facilities, and we expect that to continue for many years.”

The designation was proposed by the ANS honors and awards committee and approved on initial ballot by the board of directors.

“The ANS Nuclear Historic Landmark signifies that a nuclear facility has played an important role in nuclear science and engineering,” ANS President Michael C. Brady Raap said. “HFIR, with its preeminent role in isotope production and neutron science, certainly meets that criteria.”

The reactor was conceived in the late 1950s as a production reactor to meet anticipated demand for transuranic isotopes (“heavy” elements such as plutonium and curium). HFIR today is a DOE Office of Science user facility and one of the world’s sole sources of the radioisotope californium-252, used in industry and medicine.

Researchers also use the reactor’s neutron production for neutron scattering analysis, a technique pioneered at its predecessor ORNL reactors, the Graphite Reactor and the Oak Ridge Research Reactor. A major upgrade to HFIR in 2007 provided improved beam lines, new instruments and a cold source that expanded its research capabilities by literally chilling, or removing energy from, the neutrons.—*Bill Cabage* 🌿

(MAXLAB continued from page 1)

GeoSpring™ hybrid electric water heater, creating over 1,000 jobs. GeoSpring reduces energy use by more than 60 percent compared with conventional electric storage water heaters.

In 2013, ClimateMaster began manufacturing the Trilogy™ 45 Q-Mode geothermal heat pump in Oklahoma City. This product heats and cools a home and provides hot water on demand. It reduces space conditioning and water heating energy use by more than 65 percent compared to a conventional air-source heat pump and electric storage water heater.

The European Union and U.S. Environmental Protection Agency are moving to retire the refrigerant used in supermarket and refrigeration systems (R-404A) due to high global warming potential. The problem stems from traditional supermarket systems with large refrigerant inventory and a high annual leakage rate due to long runs of tubing between display cases and plant equipment in the store. ORNL CRADA partners have come up with two solutions to this challenge.

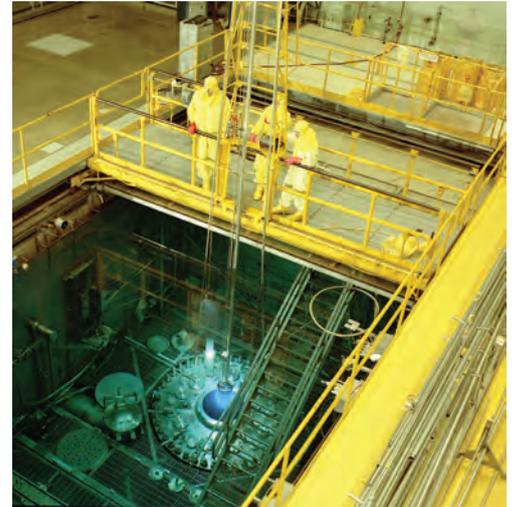
Hillphoenix, one of the largest manufacturers of supermarket equipment, now offers the Advansor System, which uses natural carbon dioxide as the refrigerant, reducing energy use by 25 percent while the environmental impact reduction is 75 percent due to the natural refrigerant.

Honeywell will soon introduce a new hydrofluoroolefin blend refrigerant as a drop-in replacement for R-404A in the nation’s 37,000 existing supermarket and refrigeration systems. The new refrigerant enables existing systems to reduce energy use 10 percent and has a 67 percent lower global warming potential than R-404A.

“Due to the capabilities that we now have thanks to MAXLAB, stay tuned for more innovative product launches,” Hughes said.—*Fred Strohl* 🌿



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HFIR’s vessel resides in a pool of water illuminated by the blue glow of the Cherenkov radiation effect.

Hightower to lead CORRE in 2015

Bob Hightower was elected president of the Coalition for Oak Ridge Retired Employees (CORRE) for 2015 during its annual meeting Oct. 20.

Other officers for 2015 are Pete Peterson, Dave Whitehead and Garry Whitley, vice presidents; Steve Stow, secretary; Mary Jane White, treasurer; Judy Kibbe, communications; and Dave Mason, past president.

New members of CORRE’s board of directors are Joy and Tony Angelelli, Mike Emery, Dave Rupert and Joe Setaro. Holdover board members are Mike Bradshaw, Shirley Cates, Joe McGrory, Ken Moore, Dwight Morrow, Dave Reichle, Jim Rogers and Ross Toedte.

CORRE’s board meets at 10 a.m. during the third Wednesday of each month at the Oak Ridge Senior Center, 728 Emory Valley Road, Oak Ridge.

Information about CORRE is available at www.corre.info. Retirees who have not provided their e-mail address or have changed their address recently are asked to contact Judy Kibbe at kandjkibbe@comcast.net.

Service Anniversaries

September 2014

40 years: **Patricia Dreyer Parr**, Facilities & Operations; **David N. White** and **Ernest Lee Henley**, Facilities Management; **Gary T. Mays**, Reactor & Nuclear Systems; **Debra A. Bostick**, Chemical Sciences; **Carl Mike Hammons**, Instrument & Source; **Gregory Wayne Johnson**, Utilities

35 years: **Sharon M. Robinson**, Nuclear Security & Isotope Technology; **Colleen G. Rizy**, Environmental Sciences; **Bruce A. Moyer**, Chemical Sciences; **Martha H. Carpenter**, Office of Integrated Performance Management; **Gene E. Ice**, Materials Science & Technology

30 years: **Larry Wayne Finch**, Logistical & Fabrication Services; **Doyle M. Hembree Jr.**, Nuclear Security & Isotope Technology; **Cliff Eberle**, Materials Science & Technology; **Thomas J. Lewis**, Accounting Services

25 years: **Kelli T Kizer**, Acquisition Management Services; **Ralph Barton Dinwiddie**, Materials Science & Technology; **Barton Smith**, Energy & Transportation Science; **Ricky Clark**, **Thomas R. Giles** and **Michael Jay Richmond**, Facilities Management; **Mark Allen Linn** and **Barry G. Whitson**, Research Reactors; **J.P. Jones Jr.**, Electrical & Electronics Systems Research; **Thomas G. Willoughby**, Human Resources; **Joseph P. Trien**, Computational Sciences & Engineering; **John Allan Mann**, Logistical & Fabrication Services; **Norman M. Turk**, Nuclear Security & Isotope Technology

20 years: **Tamara Jo Kever**, Chemical Sciences; **Joseph Raymond Drewery** and **Gerald Wayne Condon**, Utilities; **Rebecca Ann Efrogmson**, Environmental Sciences

October 2014

40 years: **Judy M. Butler**, Nonreactor Nuclear Facilities; **Philip J. Maziasz**, Materials Science & Technology; **D. L. Thomas**, Integrated Operations Support

35 years: **James Phillip Schubert**, **Steven M. Trotter** and **William Herb Strong**, Research Accelerator; **Cheri Lee Cross**, Logistical & Fabrication Services; **Donna S. Sneed**, Nuclear Security & Isotope Technology; **John G. Smith**, Environmental Sciences; **Lance J. Mezga**, Facilities Development; **Donald Lee Hillis**, Fusion & Materials for Nuclear Systems

30 years: **Jimmy E Stone**, Facilities & Operations; **Gail Calloway**, Business Operations & Strategy Services; **Michael W. Hughes**, Utilities; **Tammy Beaty**, Environmental Sciences; **Allison S. Gray**, Communications

25 years: **Debbie A. May** and **John T. Trotter II**, Integrated Operations Support; **Karen L. McElhaney**, US ITER Nuclear Systems; **Kenneth R. Houbre**, Research Reactors; **Jerry D. Craze** and **Bryan Keith Jackson**, Logistical & Fabrication Services; **Bernie Riemer**, Instrument and Source; **Debbie T. Bain**, Energy & Transportation Science; **Gary J. Van Berkel**, Chemical Sciences; **R. Steven Owens**, Nuclear Security & Isotope Technology; **Cathy L. Cheverton**, Physical Sciences; **George Walter Garner**, Materials Science & Technology; **Tom S. Orr**, Safety Services; **Beverly Kay**, Electrical & Electronics Systems Research

20 years: **Johney Boyd Green Jr.**, Energy & Transportation Science; **Ronald Erwin Latham**, Logistical & Fabrication Services; **Edward Hamilton Smith**, Nonreactor Nuclear Facilities; **James William Klett**, Materials Science & Technology; **Reginald J. Thompson**, Facilities Management

November 2014

40 years: **Charles E. Bruce**, Utilities; **Larry Eugene Seiber**, Electrical & Electronics Systems Research

35 years: **William A. Miller**, Energy & Transportation Science; **Joseph L. Weaver**, Safety Services; **John B. Brock** and **Larry E. Johnson**, Logistical & Fabrication Services; **Joseph F. Birdwell Jr.**, Nuclear Security & Isotope Technology

30 years: **Charles Wayne Glover**, Computer Science & Mathematics; **John D. Budai**, Materials Science & Technology; **Shih-Miao Chin**, Energy & Transportation Science

25 years: **Samuel Arthur Lewis Sr.**, Energy & Transportation Science; **Saed Mirzadeh**, Nuclear Security & Isotope Technology; **James Henry Miller**, Fusion & Materials for Nuclear Systems

20 years: **Michael Stuart Summers**, Computer Science & Mathematics

FORNL dues are \$20 annually

Annual dues for Friends of ORNL (FORNL) membership are \$20 per year. A life membership is \$200. Dues can be paid at the monthly FORNL meetings held during the second Tuesday of each month except December at the University of Tennessee Outreach Center, 1201 Oak Ridge Turnpike. Checks may be sent to Vic Tennery, 113 Newell Lane, Oak Ridge, Tenn. 37830. Checks are payable to "FORNL, Vic Tennery, Treasurer." More information about FORNL can be found at www.fornl.info.

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.

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. 21

OAK RIDGE, TENNESSEE

Friday, December 3, 1954

Research Personnel Saddened by Death Of Enrico Fermi, Noted Atomic Expert

Research personnel at Oak Ridge National Laboratory were saddened this week to learn of the recent death in Chicago of Dr. Enrico Fermi, eminent scientist who supervised the first sustained atomic chain reaction. Dr. Fermi, known and admired by many local scientists, came to Oak Ridge in 1943 to supervise the startup of the graphite reactor at the Laboratory.

Dr. Alvin Weinberg, research director at ORNL and a close associate of Dr. Fermi's for many years, stated that "All of us here in Oak Ridge are deeply sorrowful over the very untimely passing of Dr. Fermi. He was in charge of the startup of the Oak Ridge graphite reactor and thus it is a particular sense of loss that we feel. Oak Ridge scientists were very pleased at the \$25,000 award given Dr. Fermi just recently by the AEC. Few men were more deserving of it than he. Our science and our country have lost one of the great geniuses of our time."

Here in '48

Besides being here in the early days of Oak Ridge, Dr. Fermi's most recent visit was in 1948 for a brief period. He was invited to return this past September for the Nuclear Physics Seminar at ORNL, but he was unable to attend because of his failing health. Dr. Fermi was a victim of cancer. He was 53 years old.

Chairman Lewis L. Strauss of the Atomic Energy Commission said, "It is with deep sorrow that we in the Atomic Energy Commission have learned of the death of our good friend, Dr. Enrico Fermi, one of the world's greatest atomic physicists."

"It was largely as a result of
Continued on Page 3

Metals Group Meets Tuesday

Dr. Gregory J. Comstock, director of the Powder Metallurgy Laboratory at Stevens Institute of Technology, New Jersey, will be the guest speaker at the next meeting of the local chapter of the American Society for Metals. The meeting will be held at the Knights of Columbus Hall on December 8, beginning at 8:00 P.M. The subject of Dr. Comstock's address will be "The History of Powder Metallurgy and New Developments."

Author of Papers

Dr. Comstock is the author of numerous papers and contributor to several text books in his field. He has investigated the nature of the bond in sintered metal compacts, the production of iron powders of unique properties, and has pioneered in the field of hot pressing. He is also the holder of several patents.

Dr. Comstock will discuss the development of powder metallurgy from an art to a science. All members of the local group and interested persons are invited to attend the meeting.



DR. FERMI

JONES DISPENSARY CLOSES

The dispensary in the Jones Area, located in Building 7009, will be closed from December 6 through December 12, according to an announcement from the ORNL Health Division. Laboratory personnel in that area who need medical attention during that period are asked to come to the dispensary, Building 2013, or the dispensary in Building 4500.

BIOLOGIST LECTURES — Dr. W. A. Arnold, Biology, lectured to the Oak Ridge High School Chemistry Club and the Biology Club recently.



PARTICIPANTS IN THE SIXTH ANNUAL Naval Research Reserve in conjunction with Oak Ridge are shown above as they gathered in front for an official portrait on opening day. The Army Research and Development Unit will meet next week end.

Testing Society Meets Monday In High School

"New Industrial X-Ray Units for Radiography" will be the topic of discussion at the December meeting of the Oak Ridge Chapter of the Society for Nondestructive Testing. The meeting will be held Monday, December 6, at 8:00 P.M., in Room A-130 of the Oak Ridge High School. When entering the high school from Providence Road, A-130 is the first room on the right. Alexander Gobus of the North American Phillips Company, Inc., will be the speaker for the occasion. He will cover the general range of sizes of units available with particular emphasis on the small portable x-ray units.

Mr. Gobus, one of the country's leading experts on nondestructive testing, is manager of the X-Ray Division of the Phillips Company at the Mt. Vernon, New York, plant. His work for the 17 years prior (from 1936 to 1953) was as vice president, chief metallurgist, and director of nondestructive testing for Sam Tour and Company, Inc.

Active in ASTM

Naval Research Reserve Seminar Lists Speakers from ORNL for Second Week

Members of the Naval Research Reserve and the Army Research and Development Unit from Fort Belvoir, Va., who are here for the sixth annual Nuclear Sciences Seminar will have a week-end recess before tackling the second week of intensive lectures on the theme

"Nuclear Reactors." This evening participants in the seminar will be guests at a dinner at the Oak Ridge Golf and Country Club.

The schedule for next week's activities lists a number of speakers from Oak Ridge National Laboratory, as well as representatives from various other scientific groups. The seminar is being presented by the Naval Research Reserve, in conjunction with ORNL and the Atomic Energy Commission.

On Monday, December 6, F. R. Bruce, associate director of the Chemical Technology Division at ORNL, will open the session at 8:30 AM with an address entitled "Chemical Processing in the Atomic Energy Program." A. F. Rupp, superintendent of the Operations Division at the Laboratory, will speak at 2:45 PM on the "Production of Radioisotopes." Tuesday, December 7, at 8:15 AM, J. A. Lane, director of the Reactor Experimental

Dr. Hafstad Resigns From Commission

General Manager K. D. Nichols of the U. S. Atomic Energy Commission last week announced acceptance of the resignation of Lawrence R. Hafstad as director of the AEC's Division of Reactor Development. Mr. Nichols stated that Dr. Hafstad had requested "long delayed and often postponed" release from his AEC assignment in order to accept a position in private industry.

Dr. Hafstad will join the staff of the Chase National Bank of New York as atomic energy consultant on January 1, 1955. His assignment

Sixty years ago this quarter Taken from ORNL "The News" for Fall 1954

- Enrico Fermi, eminent Nobel Prize recipient scientist and professor of physics at the University of Chicago Institute for Nuclear Studies, died of cancer at age 53. Known for achieving the first self-sustained and controlled atomic chain reaction at the University of Chicago Metallurgy Laboratory on Dec. 2, 1942, he later came to Oak Ridge in 1943 to supervise the startup of the Graphite Reactor.
- A little known service developed by William Sullivan, became an invaluable aid to researchers at ORNL. This aid was the encyclopedia of nuclear data contains more than 15,000 items representing the coverage of nearly 7,200 literature references. The basic scheme categorized by atomic number, mass number, nuclear property and an intricate system of color tabs.
- ORNL expanded the radioisotope "hot chemistry" program with a new pilot plant to separate and purify fission products for industrial, medical and other uses. The plant capacity separated 200,000 curies per year of cesium-137, as well as large quantities of strontium-90.
- The Oak Ridge Institute of Nuclear Studies arranged for a special course in radioisotope techniques for scientists from 53 countries. The program supported President Eisenhower's Atoms for Peace program and allowed participants to gain knowledge in the efficient use of radioisotopes.—prepared by ORNL History Room volunteers

UT-B Scholar Katie Sloop assists energy companies' compliance



Katie Sloop is pictured hiking near Aspen, Colo., in late September.

When Katie Sloop was majoring in biological sciences and Spanish at the University of Tennessee about five years ago, little did she think her career would be focused on working with the oil and gas production industry.

Six years after being named the 2008 UT-Battelle Scholar, Katie works with Ecocion Inc., a suburban Denver-based global provider of environmental solutions and services to clients in governance, risk and compliance issues. Katie utilizes an Ecocion-developed software package to assist her energy industry clients.

"I work with the Asset & Compliance Tracking Systems or ACTS for short, which enables these companies to keep up with all compliance aspects of their business," said Katie during a recent phone interview. "This system not only allows these companies to keep up with all of the details and regulations, but streamlines their work load. At a time when the oil and gas industry has had to increase its efforts to keep up with regulation issues, ACTS makes it much easier to do all of that type of work."

Katie currently has two primary energy industry clients along with others she can provide services to from time to time on an as-needed basis.

"Some of these companies are located right here in the Denver area, but I have one client with offices in Alberta," said Katie, who noted Ecocion has about 35 clients worldwide with most located in the United States and Canada.

While oil and gas may at first sight not appear to relate to biological sciences, Katie said there are a number of connections.

"Keeping up with environmental regulations and maintaining compliance is an important part of our clients' business, and my background in biological sciences provides a unique perspective to provide solutions," said Katie, who as an Oak Ridge High School student once led a Clinch River Environmental Studies Organization (CRESO) team studying the eastern box turtle's response to habitat disturbance."

After earning her UT degree two years ago, Katie and her fiancé headed to the Denver area, where he is a PhD candidate at the University of Colorado in Boulder. Katie taught middle school life science for a time before landing her current job as an environmental consultant.

The daughter of Fred Sloop of ORNL's Chemical Sciences Division, Katie is far from home and her days as a student at Oak Ridge's St. Mary's School and Oak Ridge High. Still, she enjoys living in the Denver area.

"There are a lot of things to do here," Katie said. "I've been to some Rockies (baseball) games, a concert at Red Rocks and there are many outdoor activities year-round. I especially enjoy hiking and exploring the mountains. The abundance of craft breweries is amazing."

Katie credits the UT-Battelle Scholarship with setting her path over the past six years.

"The UT-Battelle Scholarship removed the financial stress that many college students experience," Katie said. "I was able to enjoy my time at UT and to graduate without any student debt. My UT education, facilitated in part by the UT-Battelle Scholarship, has led me to the work I am doing today. Everything that has occurred these past few years may not have happened without the help of the UT-Battelle Scholarship." —Fred Strohl 🌿

Volunteers needed for 2015 Tennessee Science Bowl Feb. 27-28

Volunteers for a number of different positions are needed for the Tennessee Science Bowl scheduled Friday and Saturday, Feb. 27-28 at Pellissippi State's Blount County Campus in Friendsville.

Moderators, rules judges, scorekeepers and timekeepers are needed. Volunteers are also needed to fill various other roles during the event. You can register as a volunteer at <http://www.orau.gov/sciencebowl/volunteers/index.html>.

For more information, contact Science Bowl Coordinator Jennifer Tyrell, 576-3409, Jennifer.Tyrell@orau.org.

From the Lab Director

As you may have seen on national news outlets, ORNL partner Local Motors printed a car in about 44 hours during September's International Manufacturing Technology Show in Chicago.

The Arizona-based company is working with our team at the Manufacturing Demonstration Facility to apply large-scale additive manufacturing technology to motor vehicles, and MDF staff were in Chicago to support the demonstration. The resulting car body was combined with a Renault electric drive train and other components and driven from the exhibit hall. It's now on international tour and recently received the 2014 Popular Mechanics Breakthrough Award.

The MDF's work with Local Motors and machine tool manufacturer CINCINNATI Inc., which is now marketing a big-area additive manufacturing system developed in partnership with ORNL, is a great example of our growing role in the development and deployment of cutting-edge industrial technologies that combine cost savings with energy efficiency.

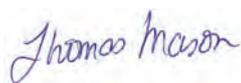
The Smithsonian's educational division, Smithsonian Associates, recently brought 43 visitors on a four-day tour of ORNL and Oak Ridge. Their agenda included the Graphite Reactor and tours by researchers in areas such as 3-D printing, supercomputing and climate modeling. The visit also included the American Museum of Science and Energy and the Y-12 National Security Complex.

All indications are the Associates will be back with another group. Also, National Center for Computational Science Director **Jim Hack** was among the speakers invited to a symposium sponsored by the Smithsonian Institution's 2014 Grand Challenges Consortia held Oct. 9 in the National Museum of Natural History in Washington, D.C. The meeting focused on human-driven climate and environmental change.

Physics Division Director **David Dean** has been invited to chair the Science Advisory Committee for the Facility for Rare Isotope Beams (FRIB). David will work with FRIB Laboratory Director Konrad Gelbke and associates in planning the scientific agenda for the new facility that is being constructed at Michigan State University. David will also be working with MSU's **Witek Nazarewicz** – who served as scientific director of the Holifield Radioactive Ion Beam Facility at ORNL until its shutdown in 2012 – and the Physics Division's **Michael Smith**.

Scott Sluder of the Energy and Transportation Science Division was recently elected a fellow of the Society of Automotive Engineers International. **Larry Baylor** and **Steve Combs** of the Fusion and Materials for Nuclear Systems Division, received the American Nuclear Society's Fusion Energy Division 2014 Technical Accomplishment Award for their years of research in plasma fueling and disruption mitigation.

In August, **Maria Varela** of the Materials Science and Technology Division earned the Burton Medal for early career scientists from the Microscopy Society of America for her work in aberration-corrected scanning transmission electron microscopy and atomic resolution energy loss spectroscopy. **Juan Carlos Idrobo** of the Center for Nanophase Materials Sciences received the 2014 Outstanding Achievement Award from the Hispanic Engineer National Achievement Award Corporation for groundbreaking research in scanning transmission electron microscopy of 2-D materials.



Thom Mason



The 3-D-printed car was produced and displayed during the International Manufacturing Technology Show in Chicago.

AMSE seeking docents

The American Museum of Science and Energy (AMSE) is looking for volunteers to act as docents and it is asking Friends of ORNL to help find those volunteers.

Some of the activities docents could be involved with are welcoming visitors to AMSE, provide information about AMSE's exhibits and programs, communicate general information about Oak Ridge and its history, host live demonstrations and assistance with traveling exhibits along with help at summer camps and special events.

If you are interested in serving as an AMSE docent, please contact Glenda Bingham at 576-3200.



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ORNL welcomes first Liane Russell fellows

ORNL's renowned mammalian geneticist **Liane Russell** recently returned to the Lab to congratulate the first recipients of a new fellowship named in her honor.

ORNL created the Liane Russell Distinguished Early Career Fellowship to attract a diverse and promising work force of early career scientists and engineers whose interests align with DOE missions.

The first three recipients are:

Celia Shiau, whose primary area of research is genomics, computing and neutron scattering to probe host-microbe interface for environmental assessment and clean energy. She comes to ORNL from Stanford University and is sponsored jointly by ORNL's Environmental Science and Bioscience divisions.

Huiyuan Zhu, whose primary area of research is synthetic control of hybrid nanomaterials for catalytic applications. She comes to ORNL from Brown University and is sponsored by the Chemical Sciences Division.

Huina Mao is studying "big data" for human settlement mapping and health informatics. She comes to ORNL from Indiana University and is sponsored by the Computational Science and Engineering Division.

Russell and her husband, the late William L. Russell, led a groundbreaking mammalian genetics and mutagenesis research program at ORNL that included the Mouse House, a colony of mutant mice used in genetics research. Liane Russell's findings on the vulnerability of embryos to radiation led to changes in radiological practices for women of child-bearing age. Mouse House discoveries include the roles of the X and Y chromosomes in mammals, including gender determination. 🌿



Pictured, from left, are Celia Shiau, Huiyuan Zhu, Liane Russell, Huina Mao and ORNL Director Thom Mason. (Photo by Jason Richards)