

**SCIENCE**

## Mars 'Curiosity' has ORNL tech

The Curiosity rover that successfully landed on Mars on Aug. 6 includes a significant contribution from ORNL and the Department of Energy. ORNL developed and fabricated the protective iridium alloy cladding that's central to the generator that powers the rover.


The rover's mobile instrument platform is too large to rely on solar-powered batteries and uses a plutonium oxide-powered generator, as do all of NASA's deep-space probes such as Voyager and Cassini. ORNL's iridium alloy cladding encapsulates the fuel. Radioisotope Power Systems program manager James King explained this chapter in ORNL's longstanding role in NASA's deep-space exploration:

"We produced the iridium alloys clad vent sets for the Pu-238 fuel containment, and the Carbon Bonded Carbon Fiber insulator sets used in the generator," King said. "This is the first launch using a new radioisotope thermoelectric generator, the Multi-Mission Radioisotope Thermoelectric Generator."

ORNL's iridium alloy clad vent sets are resistant to heat and impact and are designed and tested to remain intact even during an unplanned reentry during the spacecraft's launch or subsequent gravitational-assist flybys. The iridium alloy clad vent sets have been used in other deep-space missions (such as Voyager, Galileo and Ulysses) and are present on the Pluto New Horizons mission to explore Pluto and the Kuiper Belt.

"ORNL has been involved with the development of this generator for several years," King said. "In addition to the component production, we conducted several materials characterization and testing studies to support the design and safety analysis activities. The iridium alloy was tested in temperature ranges applicable to this system to insure adequate ductility was available for the safe containment of the fuel during accident conditions. Also, an extensive generator insulation material testing program was performed to insure adequate performance during operation. Materials and fabrication support consultation was provided to program participants as the generator was developed."

DOE's Idaho National Laboratory assembled and extensively tested the power system.

—Bill Cabage 



Key components of the probe's Multi-Mission Radioisotope Thermoelectric Generator were produced at ORNL. (Image courtesy of NASA.)

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"ORNL has been involved with the development of this generator for several years."

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## Former PIO Aebischer moved into minority science, engineering effort



Ed Aebischer and his wife Judy now pursue volunteer activities in the Marietta and Atlanta area.

As a public information officer at ORNL for about 20 years, Ed Aebischer worked with a number of engineers to get their message out to the public.

Following his retirement in 1997, Ed moved to Marietta, Ga., and joined a program at Georgia Tech to encourage minority high school students to pursue careers in science, technology, engineering and mathematics.

“The program was called SECME, which originally stood for the Southeastern Consortium for Minorities in Engineering,” Ed said during a recent phone conversation. “SECME focuses on K-12 teacher professional development with the goal of inspiring students to become interested in math, science and engineering.”

The successful program, now extending well outside the Southeast, has resulted in many thousands of minority students going to college, earning undergraduate and graduate degrees and now working in key positions around the world.

With a former SECME colleague, Brandon Southern Jr., the two recently co-authored a book about the program that

Southern began in 1980 as a teacher in Fulton County’s Paul D. West Middle School in southwestern Atlanta. The book tells the stories of minority students who went from poverty to very successful careers in engineering and many other technical and nontechnical fields.

“There were students who were in trouble with the law and in some cases had dropped out of school for a time,” Ed said. “The SECME program helped these students get inspired to do something productive with their lives. You wouldn’t know these successful engineers once lived troubled lives – many in poverty.”

Ed served for seven years as ORNL’s manager of university and education programs before he retired in 1997. After leaving ORNL, Ed worked in public affairs at the Environmental Protection Agency’s Atlanta Regional Office before joining SECME at Georgia Tech.

“I enjoyed the opportunity of getting back into the education area,” Ed said. “My work at Georgia Tech was very fulfilling.”

Since his retirement from Georgia Tech five years ago, Ed has taken on several volunteer efforts in the Marietta and Atlanta area.

“I tutor in an elementary school, help with an apartment complex after-school program and volunteer with the local Meals on Wheels as well as a homeless shelter,” Ed said. “I say I have officially been retired for five years, but these projects and occasional SECME assignments provide a very welcome and rewarding structure and purpose to each day. I don’t think I will ever be totally retired.”

Ed’s wife of 53 years, Judy, also worked at ORNL in Environmental Sciences at one time. They have three children who live in Clarksville, the Boston area and South Carolina, along with 10 grandchildren.—Fred Strohl 🌱

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“I don’t think I will ever be totally retired.”

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

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## Service Anniversaries

## October

**45 years:** **Lester M. Petrie Jr.**, Reactor & Nuclear Systems

**35 years:** **Ronald L. Taylor**, Fabrication, Hoisting & Rigging; **Jackie Price Nelson**, **Dewey M. Williford**, Logistical Services; **Jerry L. Gray**, Nuclear & Radiological Protection; **Lynn A. Boatner**, Materials Science and Technology; **Terry L. Heatherly**, Energy & Transportation Science; **James Allen Mullens**, Global Nuclear Security Technology

**30 years:** **Lorie J. Hickey**, Financial Management Services; **Marc Livingstone Simpson**, Measurement Science & Systems Engineering; **Dan T. Fehling**, Fusion Energy

**25 years:** **Roberta A. Jones**, International Security & Analysis; **Gwen A. Green**, Fusion Energy; **Linda L. Farr**, Research Accelerator; **Odie Costanzo**, Logistical Services; **Robert A. Tannert Jr.**, **Gregory Carl Hinkel**, Information Technology Services; **Dane Brashear**, Fuel Cycle & Isotopes; **B. Alan Tatum**, Physics; **Paul Newsome Leiby**, Environmental Sciences; **Karen Yvonne Kaldenbach**, Global Nuclear Security Technology; **Rick C. Griffin**, Facilities Development

**20 years:** **Nancy Jo Merrell**, **R. Suzanne Johnson**, Environmental Protection & Waste Svstems; **Betty M. Slaten**, Nuclear & Radiological Protection; **Barbara M. Miller**, Safety Services; **Judith Ann Fitak**, Health Services; **Roberto Lenarduzzi**, Measurement Science & Systems Engineering; **Joe M. Giaquinto**, Chemical Sciences; **Julie G. Ezold**, Fuel Cycle & Isotopes

## November

**45 years:** **Jerry M Beeler**, Fabrication, Hoisting & Rigging

**35 years:** **Buddy Johnson Jr.**, Utilities; **James E. Phillips**, Health Services; **Bradley D. Patton**, Fuel Cycle & Isotopes; **Michael P. Hechler**, US ITER Non-Nuclear Systems

**30 years:** **John C Poole**, Fabrication, Hoisting & Rigging; **Gerard Michael Ludtka**, Materials Science and Technology

**25 years:** **Paul Anthony Russo**, Facilities Management; **J. Steve Hicks**, Research Accelerator; **Donald Ray England**, Logistical Services; **Thomas Rick Powers**, Fabrication, Hoisting & Rigging; **Angela Kay Sexton**, Computational Sciences & Engineering; **Evan Keith Ohriner**, **Dane F. Wilson**, Materials Science & Technology; **Kenneth William Tobin Jr.**, Measurement Science & Systems Engineering; **Glenda M. Sharp**, Information Technology Services

**20 years:** **Gary Daniel West**, Fuel Cycle & Isotopes; **Eliza Joy Oggs-Thompson**, **Roger Vane Franklin**, Logistical Services; **Julia Kaye Hancock**, Safety Services; **Darryl J. Murphy**, Information Technology Services; **Bobby G. Sumpter**, Computer Science & Mathematics; **Fred V. Sloop Jr.**, Chemical Sciences; **Sonja B. Jones**, Computational Sciences & Engineering; **Maria Yancy**, Human Resources Dir.; **Nicole L. Waters**, Internal Audit Dir.; **Charles L. Carnal**, Measurement Science & Systems Engineering



## 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).

- Oct. 9&11** Fall Golf Tournament
- Oct. 2** Rock of Ages at Tennessee Theatre
- Oct. 13-14** Abingdon/Virginia Creeper
- Oct. 25** Fall Festival
- Nov. 3** University of Tennessee Football vs. Troy
- Nov. 10** University of Tennessee vs. Missouri
- Nov. 16** Joseph and the Amazing Technicolor Dreamcoat at Cumberland County Playhouse
- Nov. 22** The Wiz at Oak Ridge Playhouse
- Nov. 24** University of Tennessee Football vs. Kentucky
- Dec. 1** Biltmore Candlelight Tour

## Knapp: ‘Love Kitchen’ needs heavy-duty volunteers

Since his “retirement” at the end of last year, former Nuclear Medicine Program Director Russ Knapp has been offering his time at the Love Kitchen, Knoxville’s volunteer source of hot meals and emergency food assistance for those in need for more than 25 years. Russ has pitched in on Wednesdays since March to help with food preparation, and he’s come away with this observation:

“They need more help,” he says. He means the heavy-duty kind.

In addition to providing hot meals to local residents on Wednesdays and Thursdays, a major effort and outreach is the weekly preparation and distribution of more than 2,000 meals to the Knoxville homebound and needy. The Love Kitchen depends on a cadre of volunteers participating at all levels to accomplish these goals.

Although the kitchen has plenty of volunteers who can offer short periods of time, Russ says they need people who can devote several hours to help with the enormous logistics of preparing the meals.

“Helen and Ellen now have a particular need for volunteers willing to routinely provide a minimum of three or four hours of weekly help for food preparation and packaging,” he says.

Love Kitchen volunteer applications can be accessed at <http://www.thelovekitchen.org/volunteer.php>. Participation in this important community organization represents a unique opportunity to help the Love Kitchen and the important services they provide to the Knoxville community. Give a little and gain a lot.

## Team UT-Battelle, ADFAC dedicate new home

Lab Director Thom Mason joined ORNL volunteers to welcome Carly Gilbert to her new home Thursday, August 30.

“I’m very excited,” Gilbert said. “And I’m really grateful that everyone was willing to put so much time into building it.”

Team UT-Battelle, the community service organization at ORNL, led the construction of the 1,000-square-foot, ENERGY STAR-certified home to help mark the 25th anniversary of Aid to Distressed Families of Appalachian Counties.

“The house build was a great way for us to show ADFAC our support of its mission,” Thom said.



Thom Mason (center) speaks at the dedication of the ADFAC home, joined by (from left) Oak Ridge Mayor Tom Beehan, Brenda Whitaker of the Tennessee Housing Development Agency, homeowner Carly Gilbert and ADFAC Executive Director Annie Cachiero. (Photo: Jason Richards)

ADFAC, an independent non-profit agency, exists to serve the basic needs of primarily low-income residents in Anderson and surrounding Appalachian counties. ADFAC’s goal is to help families become stable and self-sufficient through a variety of direct assistance services provided by its Social Services and Affordable Housing programs. Every year, this agency answers more than 6,000 requests for assistance.

Work on Gilbert’s home began in May, and 78 ORNL volunteers spent more than 950 hours over five Saturdays at the Robertsville Road site, constructing the framing, floors and walls. Volunteers finished landscaping Aug. 18.

“It has been a pleasure to work with everybody at UT-Battelle,” said Cindy Ross, director of the ADFAC Affordable Housing Program. “Their volunteer work has saved us \$50,000 and enabled us to construct a home for Carly at a reduced cost.”

Team UT-Battelle also raised money through employee contributions to furnish a nursery for Gilbert, an expectant mother and a teacher for Early Head Start, complete with a crib, changing table, dresser and a glider rocker.—Jennifer Brouner 🌱



## Reminders for participants in Over 65 health care plans

*(Please note that the following information was mailed to you in mid-September.)*

In July 2012, ORNL replaced the Major Medicare Medical Supplement plan with **new health care coverage**. Participants select a Medicare supplement plan through Extend Health and receive benefit dollars from ORNL through a Health Reimbursement Arrangement (HRA). ORNL provides prescription drug coverage and pays a portion of the premium. Your portion is deducted from your pension check or through direct bill.

### 2013 Prescription Drug Premiums and HRA Contributions

ORNL is pleased to announce that your share of the prescription drug premium for 2013 will be reduced to **\$95 per person** per month, beginning January 1, 2013. In addition, the HRA contribution for 2013 will increase to **\$600 per person**. This amount will be available through your account as of January 2, 2013. Any unused funds remaining in your HRA will carry over each year and continue to be available to you.

### Express Scripts and Medco are now one company

Express Scripts and Medco have come together as one company to manage your prescription benefit. Please continue to refill your prescriptions as you normally would by using your current prescription drug ID card, refill order forms, Medco website, or the toll-free member services telephone number on your ID card.

### New Prescription Drug administration coming in 2013

Effective January 1, 2013, ORNL will implement a new way to administer the prescription drug benefit. Express Scripts / Medco will continue to manage our plan but it will be called Express Scripts Medicare (PDP). **You do not need to do anything.** Your participation in the ORNL plan will continue and your benefits and costs will be similar to what you have today.

### Annual Enrollment for Medicare Supplement plans

Although you just selected a Medicare supplement plan in July through Extend Health, you have the opportunity to change plans each year during the Medicare Annual Enrollment period. You may receive many phone calls and mailings from providers marketing their plans to you. If you wish to change plans, you should call Extend Health at 1-888-592-8348, not the plan provider, to make any changes.

## 2013 Open Enrollment in the Under 65 retiree plans begins Oct. 8

If you or your spouse are enrolled in the under age 65 medical and dental plans offered by CIGNA, MetLife and Delta Dental, Open Enrollment is your once-a-year opportunity to review and change your benefit elections. Watch for your enrollment guide to arrive in the mail. During Open Enrollment you can:

- Change medical plan options: CIGNA Open Access or Point of Service (POS) for medical (including prescription drug and vision) coverage
- Change dental providers – MetLife or Delta Dental
- Add a child dependent up to age 26 if you or your spouse is covered under the plan

You can review and elect your benefits online at <https://ornl.employee.com> or by telephone at **1-800-211-3622**. Benefits Representatives are available 24 hours a day, 7 days a week, during the Open Enrollment period. **Open Enrollment closes Oct. 31.**



## Savings plan info for retiree participants

**You have received information in the mail about changes to the investment options available through the Savings Plan.** Please review this material, and if you have any questions about the investment changes, contact Participant Services at 1-800-777-4015, Monday through Friday, 8 a.m. to 10 p.m., or visit <http://benefits.ornl.gov/2012/Pages/RetirementSavings.aspx>.



# THE NEWS

## OAK RIDGE NATIONAL LABORATORY

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

Vol. 5, No. 16

OAK RIDGE, TENNESSEE

Friday, October 31, 1952

### Community Chest Fund Campaign Goal Topped By ORNL



**NINE YEARS OLD**—Next Tuesday is not only Election Day—it marks the ninth anniversary of the startup of the Oak Ridge National Laboratory graphite reactor. It was on Thursday, November 4, 1943, that the ORNL pile first "went critical" and really embarked on its career as one of the foremost research tools and radioisotope producers in the world. Above is a previously unpublished photograph of the Pile Building as it appears today. The ORNL reactor is virtually a grandmother, nowadays, but there's still a lot of life in the old girl, and The News wishes her many happy returns of the day! (AEC photo by Westcott)

#### Voting Time Off Allowed Eligible ORNL Employees

ORNL employees who are unable to vote after working hours may be excused with pay for a maximum of two hours straight time for the purpose of voting in the election to be held Tuesday, November 4, 1952, it has been announced.

The polls in Oak Ridge, Knoxville, Clinton, Lake City, Norris, Andersonville, and certain other adjoining towns, will be open from 9:00 AM to 7:00 PM. Those inside the polling place when the doors are closed at 7:00 PM will be allowed to vote. It is expected that these conditions will enable most employees to vote without taking time off from work. As in the past, Laboratory policy contains no provision for time off for electioneering.

According to the bulletin released this week, all supervisors should determine employees eligible for time off for voting and schedule such time so there will be no interruption in necessary activities. Such absences will be reported on employees' time tickets.

#### Laboratory Passes \$9000 Mark Tuesday; ORNL People Praised For Cooperation

1952 Oak Ridge Red Feather Campaign Likely To Be Oversubscribed Also, Phil Rueff States

The people of Oak Ridge National Laboratory have done it again! As of Tuesday of this week, ORNL had achieved and passed the Laboratory's share of \$9000 in the 1952 Community Chest campaign, and indications were good that donations would reach the \$9500 mark by today.

The response to this year's Chest fund drive has been one of the best in ORNL history, according to Garrett Tyler, director of the Laboratory campaign. Many departments and sections hit the 100 per cent participation mark. Two groups that racked up a 100 per cent score on the very first day of the drive were the Material Control Department headed by J. M. Young, of the General Office Division, and the Laundry section, under Claude L. Taylor, of the Industrial Relations Division.

"On behalf of the Oak Ridge Community Chest, I wish to extend my warm and sincere thanks to the Oak Ridge National Laboratory people who responded so generously in this campaign," Mr. Tyler stated. "It is a genuine pleasure to be associated with persons who take such an active interest in the welfare of the community."

The \$55,889 goal, \$42,335 had been subscribed by Tuesday evening, and the chances are excellent that the fund would be oversubscribed by this week end, Mr. Rueff stated.

#### ORNL, Union Agree On New Contract

Company representatives and representatives of Local No. 3, International Guards Union of America, bargaining agent for the guard employees at Oak Ridge National Laboratory, last week reached agreement on a new collective-bargaining contract. The new contract, which became effective October 30, 1952,

#### Symphony Presents Opening Concert Wednesday Night

The Oak Ridge Symphony Orchestra will present the opening concert of its ninth season on Wednesday, November 5, at 8:15 PM in the Oak Ridge High School auditorium. The concert, which will be conducted by Waldo Cohn, of the ORNL Biology Division, will feature the entire orchestra rather than a soloist.

The program for this post-election concert will include the Overture to Act II of "Lohengrin" by Wagner; the Vivaldi Concerto in D Minor; Beethoven's Symphony No. 1, and the MacDowell "Indian Suite" No. 2.

Principals of the 65-piece orchestra for this season include several ORNL employees: Herbert Pomerance, who leads the cello section; Harry Bainbridge, in the trombone section; and Paul Arow, in the percussion section.

Other section leaders are Irving Spewak, concertmaster; Mary Cox, principal of second violins; James L. English, French horns; Jacinia Howard, viola section; Harry Robbins, bass violins; Sam Zangri, flutes; Calvin Moore, oboes; Rodney Shaffer, clarinets; and Ray Gustafson, trumpets.

#### Children's Theatre Sets Season Opener

The Children's Theatre opens its 1952-53 season tomorrow and Sunday with the presentation of "Seven League Boots," which is directed by Marshall Lockhart. The play will begin both days at 2:00 PM in the Jefferson Junior High School auditorium.

The cast includes two adults and eight children. Season memberships to the Children's Theatre are on sale in the schools, at Loveman's on Thursday and Friday, and at the box office before each performance.

#### NEW ELECTRONIC STORE

For the convenience of employees, a new store, which will issue electronic, laboratory, and miscellaneous supplies, has been opened in Building 3001, Room 102, telephone number 6321.

#### SAFETY SCOREBOARD

Your Laboratory Has Operated 1,099,800 Labor Hours Since Last Lost-Time Injury Through October 26

### Sixty years ago this month

Taken from *The ORNL News* for October 1952

- Dr. Samuel Lind, acting director of ORNL's Chemistry Division, received the Priestley Medal, the highest honor of the American Chemical Society. Dr. Lind was technical consultant to Union Carbide's atomic energy program at Oak Ridge and Paducah and also served on the board of directors of the Oak Ridge Institute of Nuclear Studies.
- Nov. 4 was not only Election Day; it also marked the ninth anniversary of the startup of ORNL's Graphite Reactor which "went critical" on Nov. 4, 1943. The reactor served as the pilot plant for the Manhattan Project Hanford production reactors and had a lengthy career as one of the foremost research tools and radioisotope producers in the world.
- Oak Ridge has been selected to host the fourth National Science Fair in 1953. Entrants will be accompanied by newsmen to record the young scientists' exhibits for their folks back home. The fair will be staged at the American Museum of Atomic Energy.—prepared by ORNL History Room volunteers

Don't Let Anything Keep



## From the Lab Director

Let me start by going behind the scenes of one of this year's biggest science highlights: the Large Hadron Collider's recent announcement of a new subatomic particle consistent with the Higgs boson. ORNL's graphite foam played a prominent role in the LHC's ATLAS detector, which gathered the data. The lightweight and exceptionally thermally conductive graphite foam, discovered by James Klett in 1997 in his Building 4508 lab, is the only material the detector's developers could find — other than beryllium — with the ability to keep the detectors cool enough to pick up the traces of the particles. Graphite foam came about as the result of a Seed Money project, and is proving to be a revolutionary material in applications from energy-efficient streetlights to breakthrough physics.



Please join me in congratulating our new UT-Battelle Corporate Fellows, Paul Hanson and Brian Sales. Paul's research has focused on climate change and its impacts on the physiology, growth, and biogeochemical cycles of North American forest ecosystems. Brian is a leader in the field of new materials for advanced energy technologies and is internationally recognized for his research on thermoelectric materials that can convert heat directly into electricity, as well as phosphate glasses. We welcome Paul and Brian to this group of esteemed ORNL researchers.

Our reputation for applied research and partnerships with other labs, universities and the private sector continues to yield fruit. The recent \$9 million award to Dow Chemical Company, Ford Motor Company, and ORNL in support of the development of low-cost carbon fiber precursors is a sign that the Lab's strategy in carbon fiber research, including the Carbon Fiber Technology Center and growing Carbon Fiber Composites Consortium, is attracting serious notice throughout industry.

We also brought our new biomass-fired steam plant on line. Site Office Manager Johnny Moore and Jeff Smith joined the Federal Energy Management Program's Tim Unruh, DOE Deputy Director for Field Operations Joe McBrearty, Johnson Controls' General Manager Iain Campbell, and Nexterra's Mike Scott in dedicating the steam plant on July 19.

The conversion to biomass is an example of a national lab's ability to "show the way" when it comes to renewable energy and the multiple solutions to our energy challenge. Although the baseline of the Lab's steam demand will be supplied by biomass, we've kept natural gas-fired boilers for high demand, and those are backed up by the ability to burn heating oil.

The project is also a stellar example of ORNL and DOE's ability to work with industry through the Energy Savings Performance Contract to enhance the sustainability of our operations.

*Thomas Mason*

Thom Mason



Graphite foam, invented by ORNL's James Klett, was key in cooling the Large Hadron Collider's ATLAS detector. (Photo: Jason Richards)



Brian Sales (left) and Paul Hanson were recently named UT-Battelle Corporate Fellows. (Photo: Curtis Boles)



ORNL's new biomass-fired steam plant demonstrates the lab's commitment to renewable energy. (Photo: Jason Richards)



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## Carnival capers support United Way campaign

A dunking booth and golf-putting contest were the main attractions at the United Way Carnival hosted Aug. 9 by the Facilities Development Division. Nonreactor Nuclear Facilities Division Director Tim Powers (right) arrived prepared for his turn in the dunking booth, Facilities Management Division Director Ann Bryant Weaver a little less so, but both helped this year's campaign collect more than \$900.



(Photo: Jason Richards)



(Photo: Jason Richards)