

SCIENCE

Neutrons 'go viral' at ORNL

ORNL neutron scattering study yields new insights into virus life-cycle

ORNL researcher Flora Meilleur is part of a research team from ORNL and North Carolina State University that is studying how viruses change their structure when they move between different host species.

Without a host, a virus is a dormant package of proteins, genetic material and occasional lipids. Once inside a living cell, however, a virus can latch onto cell parts and spring into action – mutating, replicating and spreading into new cells.

“There’s this thought that a virus has one structure, whether it’s in a mosquito or in a human cell,” says Meilleur. “But a mosquito cell and a human cell are very different, which means that a virus may have to reorganize itself.” Understanding how a virus reorganizes itself when it goes from a mosquito to a human is critical for the development of medicines that can block the spread of viruses.

The team’s most recent study, published in the *Journal of Virology*, focuses on the *Sindbis* virus, a member of the arbovirus family that causes infectious diseases such as yellow fever, dengue fever and West Nile fever.

Scientists have previously observed host-specific differences in the *Sindbis* virus, but Meilleur says the team’s study is the first time that subtle structural variations in *Sindbis* have been observed and characterized.

“This is the first structural comparison of *Sindbis* viruses grown in different host cells,” Meilleur said.

The team, which included Meilleur, Lilin He, Dean Myles and William Heller

from ORNL and Amanda Piper, Raquel Hernandez and Dennis Brown from NCSU, used a technique called small angle neutron scattering to compare virus particles from mammalian and insect cells. Their results revealed that the mammalian-grown viruses exhibited distinct features, including a larger diameter, increased levels of cholesterol, and a different distribution of genetic material in the virus core.

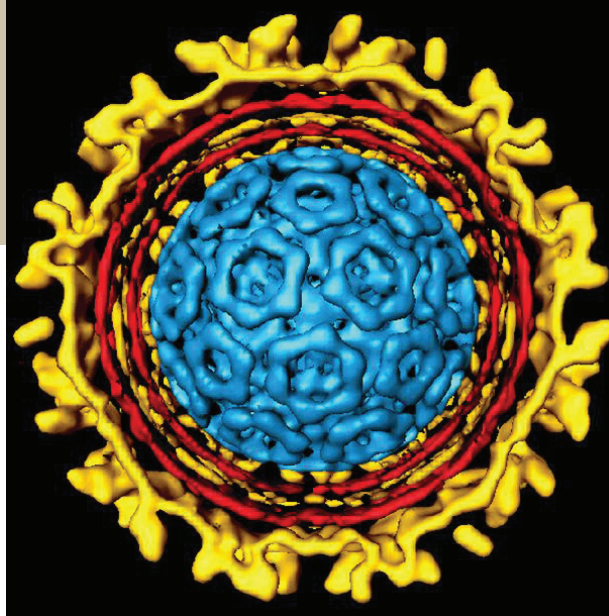
“These results suggest that structural changes are likely to be important in transmission between hosts,” Meilleur said. “The chemical environment of the host cell appears to affect how the virus assembles itself.”

“Understanding how a virus reorganizes itself when it goes from a mosquito to a human is critical for the development of medicines that can block the spread of viruses.”

of complex biological systems. Whereas techniques like X-ray scattering can cause radiation damage in biological samples during analysis, neutron scattering is non-destructive, says Meilleur.

“Neutron scattering allows you to see differences in the composition of the virus without destroying the sample,” Meilleur says.

The ability of neutrons to “see” the composition of biological materials is linked to the particles’ sensitivity to hydrogen, which is a key component in compounds such as proteins and cell membranes.—*Morgan McCorkle*



The mosquito-borne Sindbis virus is a member of the same family that causes West Nile fever and dengue fever. [Image credit: Paredes et al., Virology. 324, 373 (2004)]

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ORNL History room volunteers help keep past alive



History Room volunteers and friends help Charles Cogdon (seated, right) celebrate his 90th birthday.

Thanks to the efforts of several volunteers, items related to the history of Oak Ridge National Laboratory can be found in the ORNL History Room, located in Building 4500 North near the library.

Steve Stow, David McVicker, Charles Congdon, Bill Yee, Dick Riordan and Marilyn McLaughlin are among the volunteers who show up each Wednesday morning to organize old records, papers and other information and artifacts

related to the almost 68-year history of ORNL.

“As one who worked in the old Biology Division for 18 years, I have been able to learn more information about people and the science that has taken place here all of these years,” said Charles Congdon, who generally arrives each Wednesday morning at 7 in spite of his 90 years. “Although I worked in the Biology Division — which was one of the biggest divisions at the Lab when I was here — I’ve gained new insights about people like Alvin Weinberg and Alexander Hollander through working in the History Room.”

Congdon has especially enjoyed studying Hollander’s ORNL role.

“His studies of genes and proteins led to all kinds of discoveries in genetics,” Congdon said. “A lot of people discounted his work years ago, but they have gained an appreciation for it years later. He was definitely a person ahead of his time.”

Stow, who worked at ORNL for 27 years and is an authority on Oak Ridge history, said the room always opens new opportunities for knowledge.

“A day doesn’t go by here that I don’t learn something new,” Stow said. “Going through this information is helpful to me when I prepare for presentations or the summertime public bus tours.”

David McVicker is the one History Room worker without an ORNL work background, but he has made up for it

in retirement as a public tour guide and worker at the American Museum of Science and Energy.

“I worked at the Department of Defense, so I approach this from a different perspective,” McVicker said. “What I’ve learned in the History Room has helped me immeasurably.”

Yee, who first came to ORNL in 1952 in the old Chemistry Division, says the History Room has enabled him to rekindle old memories about ORNL research from almost 60 years ago.

“Looking at how the old Chemistry Division became the Chemical Technology Division and seeing how research has progressed over the years is fascinating,” Yee said. “Going over this material brings back many memories.”

Debbie Dickerson of ORNL’s Communications and External Relations Directorate oversees the History Room and praises the volunteers for their organizational skills.

“Everything was sitting in stacks when we first brought this material in here years ago,” Dickerson said. “Our volunteers have done a tremendous job in not only organizing the material but also in knowing exactly where to go if someone needs something of a historical nature.”

Stow says new material for the History Room is always welcome.

“We’d like to encourage a lot of our retirees to donate their papers to the History Room,” Stow said. “Ellison Taylor (former Chemistry Division Director) donated his papers, and that information has been most helpful in learning more about how research was conducted here.”

Dickerson adds her own invitation to anyone who finds the prospect of working with these historical materials interesting. Says Dickerson, “The ORNL History Room is staffed on Wednesday mornings from 8 to 11, and we are always looking for new volunteers. If Wednesdays don’t work for you, we’ll let you choose a day that works better for your schedule.”

If you would like more information about the History Room, or if you would like to volunteer, please call Debbie Dickerson, 241-0709, for information.

—Fred Strobl 🌱

“A day doesn't go by here that I don't learn something new.”

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

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Tons of Manhattan Project documents stored near Atlanta

Nearly 5,000 cubic feet of records dealing with the old Atomic Energy Commission – much of it dealing with Manhattan Project activities during World War II in Oak Ridge, can be found at the National Archives regional center in Morrow, Ga., located about 16 miles south of Atlanta.

Joel Walker, educational specialist at the Atlanta center, said his search of those documents emphasizes the crucial role Oak Ridge played in the Manhattan Project and the ultimate Allied victory over Japan, ending the war.

“You look through all of these documents – and I’ve just looked at a very small number compared with what we have – and you find the story of Oak Ridge is so complex,” Walker said recently following a presentation before the Oak Ridge Heritage & Preservation Association. “You have the stories about the many different activities taking place at Y-12, K-25 and X-10. Atomic Energy Commission records are a priority at our center, and I am usually able to learn something new each time I go through new documents.”

One of the more fascinating pieces of information Walker has been able to nail down is the U.S. government’s concern for air quality over the United States in the aftermath of the two atomic bombs dropped on Japan in August 1945.

“On the exact day of the bombing of Hiroshima, there is a document urging the air over Japan be followed as it makes its way to the West Coast,” Walker said. “A separate document indicates the air was actually tracked all the way to Lake Michigan.”

Among some of the findings Walker has uncovered

- The British Supply Council communications with Princeton University in 1941 and ’42 to accelerate research on the possibility of developing a new type of powerful weapon.
- A request from some Russian officials to visit Oak Ridge to study housing construction. The request was denied two months later.
- The terms “Fat Man” and “Little Boy,” referring to the bombs, are found as early as July 1944.
- Correspondence to Col. Paul Tibbetts, the commander of the Enola Gay, who led both missions over Japan, as early as December 1944 – seven months before the actual mission was carried out.
- Transaction records related to the U.S. Treasury Department’s shipping silver to the Y-12 Plant for construction of machinery as part of the calutron system to perform uranium separations.
- A letter from (General) Groves to Oak Ridge workers dated Aug. 12, 1945, – three days after the second bomb was dropped on Nagasaki – thanking them for their efforts.

Walker notes that public interest in these records is growing.

“As more and more people find out about what we have, we get more inquiries all the time,” Walker said. “We’re glad to help, and I encourage people in Oak Ridge to make the 200-mile trip to spend a day in our facility, looking at what we have.”

The center is located at 5780 Jonesboro Road, Morrow, Ga. Hours of operation are 8:30 a.m. to 5 p.m., Tuesday through Saturday. Walker suggests calling ahead and preparing in advance to determine the type of information being sought.

Walker can be contacted at 770-968-2530 (Joel.Walker@nara.gov).—Fred Strohl 🌿



Educational specialist Joel Walker shares revelations from historical records that show the crucial role Oak Ridge played in the Manhattan Project at a meeting of the Oak Ridge Heritage and Preservation Association.

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 576-3753 or jamesla@ornl.gov.

- Feb. 5** UT Men vs. Alabama
- Feb. 10** Lady Vols vs. Florida
- Feb. 12** ORCMA Date Night Concert
- Feb. 16** UT Men vs. South Carolina
- Feb. 19** UT Men vs. Georgia
- Feb. 21** Lady Vols vs. Georgia
- Feb. 24** The Importance of Being Earnest (OR Playhouse)
- Feb. 27** Lady Vols vs. LSU

Virtual handshake joins ORNL women chemists with young scientists



ORNL women chemists who participated in the "virtual handshake" videoconference included (from left): ALD Michelle Buchanan, Florencia Calaza, Michelle Kidder, and Ariana Beste.

Women chemists from ORNL virtually "shook hands" in a videoconference with a group of aspiring female scientists as part of a worldwide event associated with the 2011 International Year of Chemistry celebration.

The Jan. 18 breakfast event brought together some dozen women at ORNL from diverse areas of chemistry to chat with a group of undergraduate and graduate students in chemistry, high school teachers and post-doc associates. The event was hosted by the Chemical Heritage Foundation in Philadelphia.

Similar networking breakfasts were held in 37 countries to celebrate the pivotal role of pioneering radiochemist Marie Curie and to reflect on the current landscape for women chemists.

The ORNL roundtable discussion began with questions about the challenge of balancing a career with life outside the workplace. Michelle Buchanan, ORNL's associate lab director of physical sciences, shared her perspective on juggling a successful career and personal pursuits.

"When you have a career and a family, and you want to have a private life, as well, you have to balance things. I think you can do it successfully," said Buchanan.

"It depends on what you want to make out of having a career and a family. I did have a child; I've been married forever; I have had hobbies on the outside. So, it's possible, and I think having a family keeps you grounded, keeps you involved, and helps make sure that your life is in perspective," Buchanan said.

Deanna Pickel, a polymer chemist at ORNL's Center for Nanophase Materials Sciences, noted that her experience has taught her that a healthy balance begins with a sympathetic work environment.

"One of the most important things is having a supportive boss. I've been really fortunate that I've had bosses who have been very understanding about obligations to family. A boss can make all the difference in learning how to balance," Pickel said.

Flora Meilleur, an ORNL researcher in neutron sciences, shared her thoughts on how the work-life equilibrium goes through periods of fluctuation:

"I would say that your balance changes during your career. When you are a grad or a post-doc, you have a lot of time for your science. I have two young children now, and it took me a little time to adjust. But I think in a few years, the balance will change again. If you keep adapting to whatever comes, I think it's okay," Meilleur said.—*Morgan McCorkle* 🌱

"When you have a career and a family, and you want to have a private life, as well, you have to balance things."

Make 2011 your best year yet

Dr. "Bob" Overholt shares wellness tips

Entering Wigner Auditorium, Dr. Robert "Bob" Overholt is welcomed with a burst of applause. Best known for "The Dr. Bob Show," which airs Thursdays and Saturdays on Knoxville's PBS station, this small-town Tennessee doctor has over the years become a local celebrity. His vast medical knowledge and ability to translate complex medical details into understandable terms has earned him the highest respect among his peers and patients within the communities he serves. During a recent visit to ORNL, he shared thoughts and anecdotes on life, laughter and health, focusing his talk on four keys to overall health – all intended to work in tandem. "If you're going to be productive, you're going to have to stay healthy and happy," Dr. Bob told the audience.

Sleep is crucial. While different bodies have different needs, eight hours is the recommendation for most adults, says Dr. Bob. A University of California study found a 70 percent increase in the mortality rate over a ten year period among those who get less than six hours of sleep per night. With today's busy lifestyles and errands from dawn until dusk, getting more sleep is easier said than done.

"Go to bed at the same time each night and make the room as quiet as possible," suggests Dr. Bob. "Then, turn lights on immediately after you awaken, as light makes your brain happy," he says. "Pay close attention to regular medications – some may be keeping you too alert at bedtime. Stop caffeine intake by 3 p.m. each day and limit yourself to one cup of coffee per day. Try these techniques and you might sleep better, perform better and be happier."

Next is laughter. According to Dr. Bob, laughter could indeed be the best medicine. "Studies show a 'good laugh' releases endorphins, relaxes the body and offers cardio-protective benefits. Laughter creates social improvement as it draws people near, and it improves productivity," says Dr. Bob.


"Nothing is better and more conducive to healthy relationships, either at home or work, than laughter," he says. "If you're feeling down, create laughter: Spend time with fun people; tell good, clean jokes; and never take yourself too seriously."

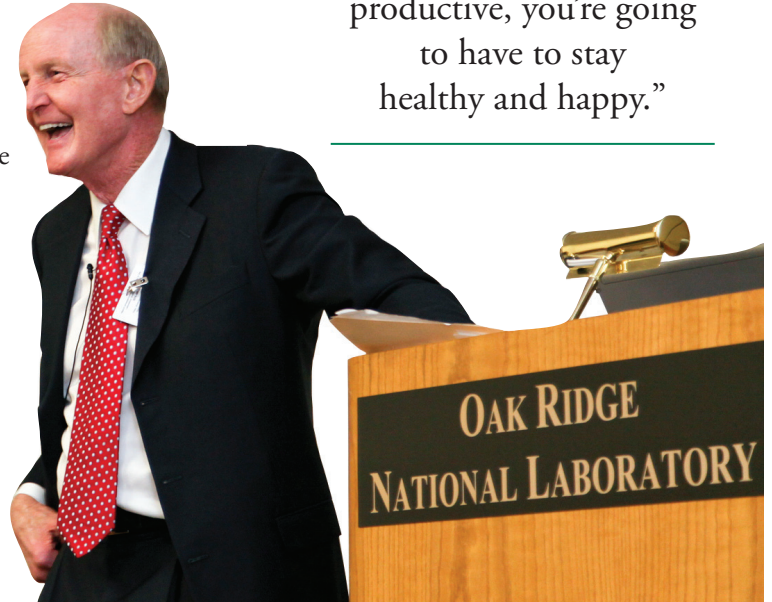
Watch your diet. No laughing matter, Dr. Bob gets serious when he talks about caloric intake and proper diet. "We need to eat less and exercise more," he says. He suggests the Pritikin or Mediterranean diet — both being heart-healthy, high-carbohydrate, low-fat, and moderate-exercise lifestyle plans.

Confessing his occasional trip to local burger joints, Dr. Bob warns against living on "bad food." High-fat, high-cholesterol diets cause a plethora of damaging physical ailments long term, including blockages, abdominal aortic aneurysms, strokes and peripheral vascular disease. By focusing on meals including such foods as baked chicken and fresh spinach (see recipe inset), there's room for a splurge every now and then, Dr. Bob suggests.

Last, but not least, set goals. Start small. "Within three months, ask yourself, 'What do I want to accomplish in my current job?' In three years ask, 'What do I want to accomplish in my life?' Long term, consider where you see yourself in five years. Whether it's taking the family on a trip or planning to buy a new car, never underestimate the positive power of goal setting," he says.

Dr. Bob ends his talk with yet another bit of sound advice: "Share stories, share love, share laughter, re-establish your life and re-establish your goals." Sounds easy enough.

Dr. Bob maintains an active role in medical research and has seen his practice grow to include more than 25 providers in Tennessee and Kentucky. The recipient of the Tennessee Medical Association's Distinguished Service Award, he discusses current medical topics twice a week on Knoxville NBC affiliate WBIR's "Live at 5" and Sunday morning's, "10 News Weekend." —Stephanie Ritchie 



"If you're going to be productive, you're going to have to stay healthy and happy."

Basic Microwave Kale or Spinach

Prep: 5 min.

Cook: 5 min.

8 cups kale or spinach, rinsed and coarsely chopped

Place kale or spinach in microwave-safe dish and add a pat or two of Smart Balance spread. Cover with cellophane wrap and cook on high for about 2 minutes per 2 cups, or until cooked.



THE NEWS

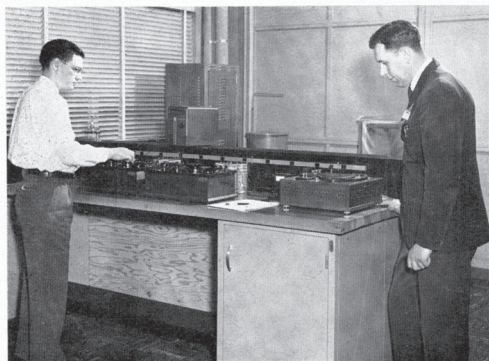
OAK RIDGE NATIONAL LABORATORY

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OAK RIDGE, TENNESSEE

Friday, February 23, 1951



MUCH-NEEDED STANDARDS ROOM NOW INSTALLED IN INSTRUMENT LABORATORY—George Ritscher, left, development engineer, and Warren Brand, supervising engineer of Applications Section, inspecting two newly received Rubicon Type B potentiometers for acceptance from the manufacturers. The Weston Precision Volt Meter in front of Mr. Brand is being used as a check on the operation.

High Accuracy Standardization of Lab Instruments Now Accomplished at ORNL

When the decision was made to build an Instrument Laboratory of modern design, it was found possible then to plan for the inclusion of a Standards facility and the necessary utilities for its operation. Hitherto, limitation of space prevented the inclusion of such a facility as a Standards room and, as a result, during the past few years research personnel was forced to use an elaborate set-ups of equipment to properly calibrate their instruments.

Technical Meetings

BIOLOGY SEMINAR at 3:30 p. m., Thursday, March 1, in the Conference room, third floor, Building 9207. "Problems in Enzymatic Histochemistry." Dr. Jonas S. Friedenwald, Department of Ophthalmology, Johns Hopkins University.

CHEMISTRY SEMINAR at 3:15 p. m., Wednesday, February 28, in the Chemistry lunchroom, Building 706-A. "Radiation Decomposition of Aromatic Hydrocarbons." Dr. T. J. Sworski.

OAK RIDGE PHYSICS SEMINAR at 4 p. m., Friday, February 23 (today) in the east lounge of Ridge Hall. "High-Fidelity Reproductions of Music." J. D. Tillman, U-T.

OAK RIDGE PHYSICS SEMINAR at 4 p. m., Friday, March 2, in the east lounge of Ridge Hall "Special Methods in Neutron Diffusion." Professor George Jaffe, Louisiana State University.

STATISTICS SEMINAR at 7:30 p. m., Tuesday, February 27, room 324, Perkins Hall, University of Tennessee. "Some Unsolved Statistical Problems." Professor E. E. Cureton, U-T. Note: (1) U-T campus may be obtained in Oak Ridge by calling ORNL Mathematics Panel, phone 6177; (2) No Statistics Seminar will be scheduled for March because of the joint regional meetings of the Biometric Society and the Institute of Mathematical Statistics being held in Oak Ridge, March 15-17.

Soon after a Standards room was included in the planning sessions, various research groups held to determine the apparatus, personnel. These discussions led to the formulation of a plan for equipping the room. Planning of building necessary for the apparatus manufacturers as well as W. Northrup, and fairly long process some items required a year. Instruments for measuring temperature and components to be assembled. In addition, standard cell potentiometers, precision current and power meters, calibrated wattmeters must be compared and checked quickly and easily. The evaluation used to measure the equipment as well as resistance thermocouples in conjunction with Mueller Bridge or This is done by inserting the element in a high quality

Industrial Health Orientation Talks At ORNL Tomorrow

An Orientation Program in Industrial Health Practices will be presented by Carbide at the Oak Ridge National Laboratory for the Council on Industrial Health of the American Medical Association tomorrow in the Conference room of Building 2517 beginning with a 9 o'clock "Welcome to Oak Ridge" talk by Clark E. Center, General Superintendent of Carbide at Oak Ridge.

The Carbide organization is holding this program in orientation, first of its kind to be held in Oak Ridge, in order to familiarize members of the Council on Industrial Health, with activities in industrial health and health protection of the worker in the local Carbide plants. The council is the policy making group of A. M. A. in the specialized field of industrial health.

Some of the most distinguished physicians in the field of industrial medicine will attend the ORNL meeting. They include Dr. Edward H. Carleton, president of the American Association of In-

ORNL Campaign for Red Cross Funds Begins Next Wednesday

The Laboratory's quota of a national goal of \$85,000,000 for the 1951 American Red Cross Fund campaign has been set at \$3,000, it has been announced by W. N. Woodward, Employee Relations Department, who will serve as chairman of the campaign at ORNL which begins at 8 a. m., Wednesday, February 28. Information of the quota figure was received from Logan B. Emlert, ORNL Executive Director, who is general chairman of the Oak Ridge 1951 Fund raising campaign for Red Cross. The quota for Oak Ridge is \$22,731.00.



KOREA, 1950—Alexander Bolden, an American Red Cross field director, making an emergency call over a telephone near the

Assisting Mr. Woodward in coordinating the campaign at the Laboratory are Harry Maggart, who will have charge of the solicitation among the research groups at the Lab, and Ward Foster, who will assume similar responsibility with the ORNL research and development divisions at Y-12. A whirlwind campaign has been planned, the three ORNL co-chairmen say, in order that the Laboratory may be the first plant in Oak Ridge to meet its quota. They ask that ORNLers again contribute generously as they did last year in going "over the top."

Names of ORNL departments coming in with 100 percent participations will be published

Sixty years ago this month

Taken from *The ORNL News* for February 1951

- S.R. Sapirie, named head of AEC, Oak Ridge Operations. Sapirie came to Oak Ridge with the Manhattan Engineering District (MED) in 1946 as assistant director of operations.
- The end of year 1950 balance sheet of the ORNL Employees Federal Credit Union showed total assets of \$135,864 and a membership of approximately 900.
- Laboratory departments cooperated in the design, fabrication, and instrumentation for the creation of a scientific device for the Physics of Solids Institute. This device, called a "Profile Recorder," will facilitate the study of surface and overall distortions of irradiated samples.
- The Oak Ridge Symphony Orchestra, under the direction of Conductor Waldo Cohn, highlights the 7th season with a cello concerto and selections by Wagner, Grainger and Vivaldi.
- The ORNL garage, one of the first wartime wooden structures, is torn down and relocated to an expanded garage facility on east Bethel Valley Road.
- A breathtaking moment took place at the Valentine's Dance at Oak Terrace with the crowning of Patricia Ravage "Miss ORNL of 1951." Miss Ravage is a member of the ORNL Isotope Research and Production Division at Y-12.
- High accuracy standardization of lab instruments accomplished at ORNL. The Aircraft Nuclear Propulsion (ANP) Program, Physics of Solids Institute, has a need to use the standards room for the measurement of physical properties of materials used in an airborne reactor.—prepared by ORNL History Room volunteers

From the Lab Director

ORNL is happy to have received four of the first Gordon Battelle Prizes from Battelle, the nonprofit, independent research and development organization and joint manager of ORNL. The awards recognize achievements in scientific discovery and technology impact from the labs where Battelle plays a significant management role. The recognition comes with \$5,000 donations to schools of the winners' choice. Congratulations to the following winners and to the schools they've chosen.

Discovery of element 117. A U.S.-Russian team, including scientists and engineers from ORNL, announced the discovery of a new chemical element with atomic number Z=117, the most recent addition to the periodic table. The team selected Meigs County Middle School in Decatur, Tenn., to receive the school donation.

Studies of iron-based high-temperature superconductors. ORNL has applied its distinctive capabilities in neutron scattering, chemistry, physics and computation to detailed studies of the magnetic excitations of new iron-based superconductors, yielding new insights into the relationship between magnetism and superconductivity. The team chose Vine Middle Performing Arts and Science Magnet School in Knoxville, Tenn., as its school donation recipient.

Low-cost carbon fiber and composites. ORNL's planned Carbon Fiber and Composites Technology Center will be used to demonstrate and evaluate new low-cost carbon fiber manufacturing processes and technologies at the pilot scale. Roane State



Representatives of ORNL's winners of the inaugural Gordon Battelle Prizes received their certificates from Battelle President and CEO Jeff Wadsworth on January 28. From left, Cliff Eberle, Mark Lumsden, Thom Mason, John Hunn, Wadsworth, Julie Ezold and Krzysztof Rykaczewski.

Laboratory, Babcock & Wilcox and General Atomics, re-established coated-particle fuel fabrication technology, after a decade-long hiatus. By applying modern scientific techniques to fabricate and test high-quality coated particle fuel in cylindrical compacts, the team set a new world record for high temperature gas reactor fuel performance. They selected Maynard Elementary School of Knoxville, Tenn., to receive the donation.

Thomas Mason

Thom Mason



FLC awards



Two ORNL teams have won Federal Laboratory Consortium excellence

in technology transfer awards.

These awards recognize laboratory employees who have accomplished outstanding work in the process of transferring a technology developed by a federal laboratory to the commercial marketplace.

Flexible Thin-Film Solar Photovoltaics on RABiTS was developed in conjunction with the National Renewable Energy Laboratory. Rolling Assisted Biaxially Textured Substrate, or RABiTS, is a flexible metal foil that provides a platform for an entire generation of high-temperature superconducting materials and products. ORNL and NREL teamed to license their technologies to Ampulse Corporation, a venture-backed startup in Golden, Colo.

The ORNL team includes Parans Paranthaman, Lee Heatherly, Sung-Hun Wee, Claudia Cantoni, Daniela Bogorin, Kyunghoon Kim, Fred List, Tolga Aytug, Amit Goyal, Dominic Lee, Frank Damiano and Mark Reeves.

The Laser-Induced Fluorescence Fiber-Optic Measurement of Fuel in Oil technology enables real-time measurements of the amount of fuel contamination in oil in an operating engine. Fuel contamination can thin the oil, lower its lubricating ability, and can lead to higher engine wear, increased oil consumption, and in extreme cases, engine failure.

The Fuel in Oil technology was developed under a collaborative R&D agreement project with Cummins Inc. and later licensed to Da Vinci Emissions Services. The ORNL team includes James Parks, Bill Partridge and David Sims.

Community College's Advanced Materials Training and Education Center in Harriman, Tenn., will receive the team's school donation.

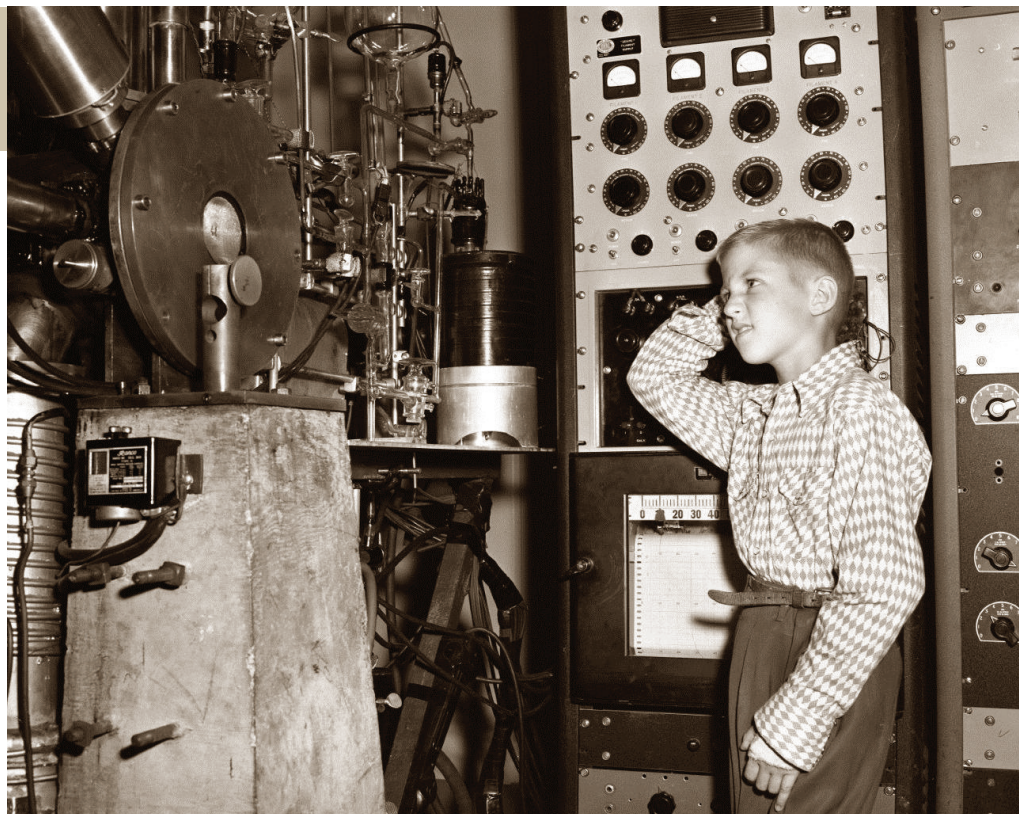
The Advanced Gas Reactor Fuel Program, made up of a team of researchers from ORNL, Idaho National



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"What the heck...?"



This curious young man (possibly a budding physicist) checks out a custom-made ion accelerator target station during the "Invitational Open House," an ORNL Community Day event, in July 1956.