

SCIENCE

Researchers mine information from next-generation subsurface flow simulations

Ask a geoscientist how he or she feels about the phrase, “out of sight, out of mind,” and you likely will meet some serious resistance.

The scientist likely would explain that learning how different materials interact with one another below the Earth’s surface is of the utmost importance. Indeed, a robust research community of theoreticians, experimentalists and computational scientists has been collaborating to gain greater insight into how different states, or phases, of matter interact with one another when they are below ground.

“These fluid flows affect society because of our desire to mitigate climate change using carbon sequestration, to extract energy resources from the subsurface and to remediate the effects of environmental contamination,” said James McClure, a computational scientist at Virginia Tech, who has been studying the issue at the Oak Ridge Leadership Computing Facility.

Oil production, subsurface contamination and carbon sequestration, among other research fields, share a common thread—they deal with multiphase flows, or situations where materials are flowing close together in different phases (solids, liquids or gases). They also pertain to when the flow is composed of materials that have a common phase with a different chemical makeup that prevents mixing (such as oil and water).

McClure and his research team are seeking to improve understanding of transport phenomena in multiphase systems.

“To better understand the processes influencing multiphase flow, we rely on the synergistic application of theory, experiment and computation,” McClure said. “We’re interested in the fundamental mechanisms that influence multiphase systems and how we can best represent these mechanisms, both mathematically and computationally, within a multiscale framework.”

Through the Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program, the team has created detailed models for simulating two-phase flow systems and has produced

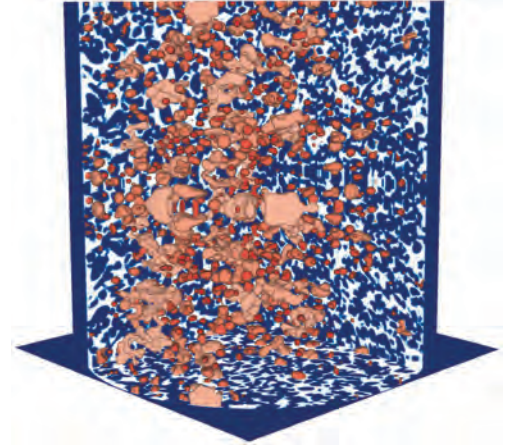
“It is an exciting time to be studying multiphase problems.”

a roadmap to efficiently simulate increasingly complex multiphase flows. Between increased computing power and advances in experimental instruments, the team is gaining unprecedented insight into how materials interact in porous media such as soil.

“It is an exciting time to be studying multiphase problems,” McClure said. “New data acquisition technologies are transforming our understanding of geological materials. Recent theoretical breakthroughs can resolve problems that have existed for decades, and a massively parallel supercomputer like Titan allows us to simulate highly resolved systems at a scale that would have been far out of reach only a few years ago.”

McClure noted that experimental advances such as microcomputed tomography (micro-CT) have allowed researchers to observe the structure of geologic materials with micron-scale

(continued on page 4)



Simulations performed on Titan enable detailed tracking of two fluid phase systems during flow through porous media. In this case, the behavior of oil ganglia (yellow) can be observed as they are mobilized in an experimentally-imaged sandstone (the solid part of the sandstone is shown in blue). (Image by James McClure)

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HTML pioneer Vic Tennery still pedals his way around Oak Ridge, surrounding area



Vic Tennery stands outside his West Oak Ridge home just before Veterans Day. Vic served in the U.S. Army and later the U.S. Army Reserve. (Photo by Carlos Jones)

Vic Tennery is known by many longtime ORNL employees as the man who started the High Temperature Materials Laboratory (HTML) more than 30 years ago.

However, what people may not know about Vic is that at age 83, he still enjoys bicycling even though an accident almost a year ago unrelated to bicycling has slowed him down for a time.

“Until I broke my hip, I was going up to 30 miles a week,” Vic said. “My daughters aren’t sure I should be doing this at my age, but riding a bicycle keeps me active and it has been hard not being able to do it recently.”

Riding a bicycle seems appropriate to define Vic. Much of the research work conducted at the HTML focused on materials tied in with transportation. Vic started and managed the facility 15 years until his retirement in 1994.

“We were successful to obtain \$25 million to design, construct and start staffing the facility in 1981,” Vic said. “It consolidated a lot of the work and people who were involved in materials research for advanced engines and involved a major participation by U.S. industry, universities and ORNL. We had many industrial researchers conduct work with us and had many graduate students from universities all over the nation conduct their thesis research in our facility.”

Vic remembers teamwork being a key component starting the HTML.

“It took a lot of effort to get everyone together such as resolving major legal issues and including major state-of-the-art instrumentation for advanced high temperature materials,” Vic said.

One of Vic’s fondest memories occurred in February 1992 when then-President George H.W. Bush participated in a cooperative research and development agreement (CRADA) signing ceremony in front of the HTML that involved ORNL and Coors. The CRADA would lead to Coors building a new ceramic manufacturing plant in Oak Ridge’s Commerce Park.

“We had the secretary of energy, Tennessee’s congressional people and all of the major media there for the ceremony,” Vic remembered. “In part of the ceremony, I stood next to the Naval officers who carried the nuclear launch codes in a small satchel. He was very serious and didn’t want to chat. There was a lot of excitement. I had the opportunity to show the president around the HTML.”

Before Vic’s arrival in Oak Ridge in 1968, he was a professor of materials engineering at the University of Illinois – his alma mater. His first four years at ORNL were spent as a ceramist. He moved away in 1972, but returned two years later as a research ceramist. His ORNL career found him serving in a number of technical capacities including research on advanced breeder and gas cooled reactor fuels, the carbon thermal insulation used in all U.S. isotopic powered satellites, writing the plan for a \$100 million DOE program on structural ceramic materials for heat engines and conducting the first industrial energy conservation program at ORNL.

Vic was later appointed by DOE to oversee an international effort on the application of structural ceramics in advanced engines.

Retired more than 21 years, Vic is involved in an assortment of activities. He is an emeritus member and fellow of the American Ceramic Society, a recipient of the Greaves Walker Award of the National Institute of Ceramic Engineers and served as a member of the Board of the Technology Accreditation Commission of the Accreditation Board.

Vic and his wife, Marlene, have been married 12 years. His first wife, Joyce, passed away in 2002. Vic’s daughter, Regina, lives in Brownsburg, Ind. Regina has two sons. One is a senior at Rose Hullman Institute of Technology in Terre Haute, Ind., and the other is a freshman at Butler University in Indianapolis. Daughter Carol lives in Fairfax, Va. Carol’s daughter attends Christopher Newport University in Norfolk, Va., while her son attends Virginia Tech in Blacksburg, Va. —Fred Strobl 🌿

“My daughters aren’t sure I should be doing this at my age, but riding a bicycle keeps me active and it has been hard not being able to do it recently.”

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.



Want to receive Reporter electronically? Send your name, address as it appears on this issue and email address to strohlhf@ornl.gov if you would like to receive the newsletter as an email. You can also access the Reporter online at <http://www.ornl.gov/info/reporter/>.

John Sheffield authors second novel

Twelve years after retiring from ORNL, John Sheffield has authored six books.

His second novel, "Roseland's Secret," became available in June on Amazon.com.

John is the former director of the Lab's Fusion Division and later director for the Joint Institute for Energy and Environment at the University of Tennessee. He was chairman of DOE's Fusion Energy Sciences Advisory Committee from 1996 through 2000.

"In writing 'Roseland's Secret,' I must have made 50 major changes," John said during a phone interview from his home near Atlanta. "I was helped enormously by an editor (Ann Kempner Fisher) who has read scripts for Jack Nicholson and edited for Mel Brooks and Bob Newhart among others. I also benefited from the advice of many fellow authors."

"Roseland's Secret" is a mystery set on the fictitious South Atlantic island of Roseland. The main character, Andrew Ferguson, researches why an unusual bird known as the Roseland auk has many more males than females. His professor warned Andrew before he left the United States the island's society is matriarchal, retaining pagan customs. Women are off limits to outsiders.

Andrew ignores the advice and falls in love with a beautiful islander, who is promised to the son of the Penseythan, head of the island. Through his research, Andy uncovers the island's dark secret. When he ignores the Penseythan's warnings

to stop meddling, he puts his life in danger.

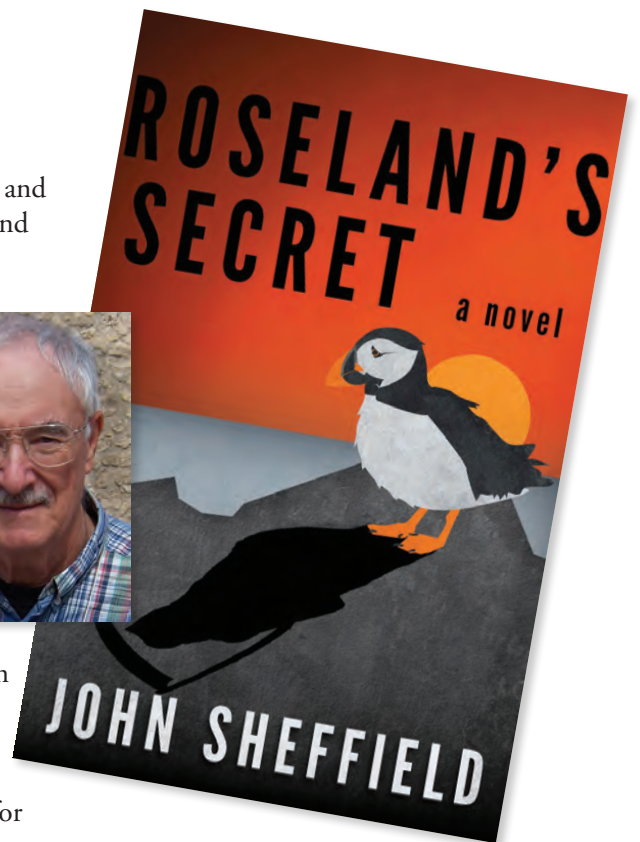
The characteristics of the island and its inhabitants are based on Roseland in Cornwall, where John spent his childhood.

His recent writing career has resulted in four books published and two self-published. Most of them are science-oriented, including a textbook, "Plasma Scattering of Electron Magnetic Radiation," written in 2010 and a humorous memoir, "Fun In Fusion Research," written in 2013.

John recently won the Edna Sampson Award of the Southeastern Writers Association for a novel. He is a member of the Atlanta Writers Club and has helped organize and participated in author panels at the annual Decatur Book Club Festival. He has been a presenter at Dragon Con in Atlanta – a convention during Labor Day Weekend focused on science fiction, fantasy, comic books and other elements of fan culture. He has also recently had book signings in Roswell, Asheville and Decatur.

A sequel to "Roseland's Secret" is already in the works. John has also begun promoting a science fiction trilogy.

Signed copies of "Roseland's Secret" may be obtained at <http://deedspublishing.goodsie.com/roselands-secret>.—Fred Strohl 🌱



Friends of ORNL collecting dues for 2016

If you want to gamble that you can live 10 years or more, consider a life membership at \$200 for the future and forget about whether you have paid. An up-to-date list of members and their dues status will be available for viewing at the monthly FORNL meeting. Dues can be paid at a meeting or sent to the FORNL Treasurer (payable to FORNL, Vinod Sikka, Treasurer); or sent to: Vinod Sikka, 115 Dansworth Lane, Oak Ridge, Tenn. 37830).

FORNL is also accepting requests for ORNL visitors' badges from those who have paid their 2016 dues (or who are life members). To request a visitors' badge, e-mail Bob Hightower at hightowerjr@comcast.net with your full name (as it appears on your driver license) and a declaration that you are a U.S. citizen.

FORNL is a nonprofit organization of persons interested in fostering the scientific goals of ORNL. FORNL is composed of scientists, engineers and individuals from varied backgrounds who believe in increasing the United States' technological awareness. 🌱

Volunteers sought for Tennessee Science Bowl

Volunteers are needed to work during the DOE sponsored Tennessee Science Bowl scheduled Feb. 26-27 at the Blount County Pellissippi State campus.

Fifty-six teams from across Tennessee are expected to participate. More than 200 volunteers will be needed to help conduct the competition. Information about volunteer opportunities can be accessed at <http://www.ornl.gov/sciencebowl/volunteers/index.html>.

As a volunteer, you will be helping advance STEM education for students from across Tennessee and giving back to your state and local communities. For more information, contact Jennifer Tyrell, Jennifer.Tyrell@ornl.org or go to the Tennessee Science Bowl website at <http://www.ornl.gov/sciencebowl/volunteers/index.html>.

Service Anniversaries

September 2015

40 years: **Randall Lee Linkous**, Energy & Transportation Science

35 years: **Karen N. Gibson**, Environmental Sciences; **Aurelia Carter**, Reimbursable Work; **Terry G. Sanford**, Utilities; **Cliff P. White**, Electrical & Electronics Systems Research; **Barbara J. Frame**, Materials Science & Technology; **Terrence L. Donaldson**, Nuclear Security & Isotope Technology

30 years: **Jacob Barhen**, Computer Science & Mathematics; **Gerald Smith**, Business Management Services

25 years: **Anita N. Greenlee**, Information Technology Services; **Jeffrey Leyden Taylor** and **Ronald E. Inman**, Facilities Management; **Tom Geer**, Materials Science & Technology; **Marcia R. Freels**, US ITER Project Support; **Anthony Q. Armstrong**, Environmental Sciences

20 years: **Cassandra Y. Anthony**, Acquisition Management Services; **Randy Scott Fishman**, Materials Science & Technology; **Jennifer M. Walden**, Health Services

October 2015

35 years: **Lisa G. Loden** and **Chris A. Pickett**, Nuclear Security & Isotope Technology; **Jackie L. Brewster**, Accounting Services; **Roger Dale McBee**, Research Reactors; **Michael Medley**, Facilities Management; **Judy M. Wyrick**, Biosciences

30 years: **Charles C. Havener**, PSD Integrated Research Operations; **Richard J. Norby**, Environmental Sciences

25 years: **Peter Gregory Knox**, Facilities Management; **Tracy W. Strader**, PSD Integrated Research Operations; **Guillermo Daniel DelCul**, Nuclear Security & Isotope Technology; **Kofi Korsah**, Electrical & Electronics Systems Research; **Mark Edward Burnette**, Logistical Services; **Janice S. Ishee**, Information Technology Services

20 years: **William A. Hamilton**, Instrument & Source; **Kimberly Johnson**, Nuclear & Radiological Protection; **Kevin Andrew Rasch**, Computational Sciences & Engineering; **Steven Craig Colburn**, Logistical Services; **Jack C. Malone** and **Keith M. Phillips**, Utilities; **Jaigne C. Christman**, Nuclear Security & Isotope Technology

November 2015

40 years: **Steven Ray Tallent**, Facilities Management

35 years: **Kyle O. Rutherford Jr.**, Environmental Protection Services

30 years: **Dwayne G Kilpatrick**, Research Reactors

25 years: **Carolyn Ann Ward** and **Carol F. Johnson**, Human Resources; **Robert J. Chambers** and **Daryl Cox**, Energy & Transportation Science; **Karen E. Vance**, Technology Transfer; **Penny Moore Humphreys**, Electrical & Electronics Systems Research; **Cynthia L. Nageotte**, Laboratory Protection; **Krystee Paige Ervin**, Nuclear Security & Isotope Technology; **Randy Welch**, Research Reactors

20 years: **Debbie Ann Moore**, Facilities Management; **Michael Z. Hu**, Energy & Transportation Science; **Robert C. Morton**, Research Accelerator

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(Next-generation subsurface flow simulations continued from page 1)

resolution. Simulations are essential to connect the experimentally generated data sets to models that describe flow processes at length scales of kilometers, as they are needed to make predictions for a wide range of systems that impact society.

“The most exciting problems across the sciences involve systems in which a process with a distinct length scale affects the behavior of the system when viewed on a much different scale,” McClure said. “Such so-called multiscale problems are extraordinarily difficult to solve because one must represent the effects of all smaller scale processes on the largest length scale of concern. Our research team has developed theory to help us better understand this multiscale problem for multiphase systems.”

The team’s current focus is to use experimental observations to evaluate, validate and guide the refinement of models, such that the underlying processes are adequately resolved from the micrometer to the kilometer scale.

“That’s what we are really interested in doing,” McClure said. “We are not interested in one specific geologic system, but rather the basic theoretical approach that can be applied to a wide variety of applications. This sort of model development is essential to answer questions that arise when evaluating the efficacy of carbon sequestration at a given location or assessing the environmental risk resulting from hydraulic fracturing of porous medium systems.”—*Eric Gedenk* 🌱

THE NEWS

OAK RIDGE NATIONAL LABORATORY

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Vol. 8 — No. 20

OAK RIDGE, TENNESSEE

Friday, Nov. 25, 1955

Laboratory to Hold "Family Day" Next Week End



Oak Ridge National Laboratory "Family Day" tour will include the Central Research Building shown above.

Families Will Visit December 3 and 4; Must Be Accompanied by ORNL Member

'Geneva Reactor' Prototype Will Be Seen; Also Graphite Reactor, Research Projects

Oak Ridge National Laboratory has designated December 3 and 4 as "Family Days." On these days, between the hours of 9 AM and 3 PM, the Laboratory will open the doors of some of its facilities for a visit by families of ORNL members.

Not all of the ORNL facilities will be made available to the "guests," since some of the installation's projects are still classified.

Cards will be distributed to all personnel of ORNL by their division administrators. Employees will be asked to list members of their families that they intend to accompany to the "Family Day." The employee will be asked to list the relationship and citizenship status of his guests on these cards, and present them upon entering the Laboratory.

There will be no age restriction; however, it is recommended by the Laboratory that employees do not bring small children, since the tour route will be long and no intra-laboratory transportation will be provided. No facilities will be provided for the

ORNL Jointly Sponsors Navy Seminar On Nuclear Reactors, Nov. 28-Dec. 10

The Seventh Annual Nuclear Sciences Seminar of the Oak Ridge Naval Reserve Research Company will be held at the Oak Ridge Institute of Nuclear Studies Special Training Building from November 28 through December 10. Jointly sponsored by the Office of Naval Research, Oak Ridge National Laboratory, and the Atomic Energy Commission, the program will include 17 speakers from the Laboratory as well as a one-day tour of ORNL for the reservists.

Three Train from ORNL

Chairman of the seminar will be Commander Richard B. Martin of the AEC Oak Ridge Operations Office. Opening remarks on Monday will be made by Lieutenant Commander R. R. Rickard, ORNL Analytical Chemistry Division, commanding officer of the local reserve unit. Commander Rickard, Lieutenant J. C. Breese, and Lieutenant J. N. Robinson, all of ORNL, will take reserve training at the seminar from the Oak Ridge unit.

There will be approximately 100 research reservists attending this year's seminar, including Naval Reserve officers, Army Reserve officers, and Air Force Reserve officers.

Weinberg to Speak

Monday's program will include an address on "Nuclear Energy in 1955" by Alvin M. Weinberg, Laboratory director. R. K. Osborn of the Oak Ridge School of Reactor Technology at ORNL will open the afternoon program on November 29 with a talk on "Reactor Theory I." Speakers from Oak Ridge National Laboratory during the third morning will be L. G. Alexander, Reactor Experimental Engineering Division, speaking on "Reactor En-

Continued on Page 3

SAFETY SCOREBOARD

Your Laboratory
Has Operated
661,649 Labor Hours
Since
Last Lost-Time Injury
Through
November 20

Members to Deliver Traveling Lectures

The Traveling Lecture Program, sponsored jointly by Oak Ridge National Laboratory and the Oak Ridge Institute of Nuclear Studies, will send five ORNL members to six colleges and universities to deliver talks next week.

Ralph Livingston, Chemistry Division, will talk at the University of Texas on November 28 and at Texas A&M College on November 29. The subject of Dr. Livingston's lecture will be "Paramagnetic Resonance Studies of Free Radicals Produced by Radiation."

S. A. Reynolds, Assistant

Testing Society Hears Norris

The betatron—a high energy x-raying machine—was explained on November 15 to the Oak Ridge Section, Society for Non-Destructive Testing, at Oak Ridge by Bruce Norris of Milwaukee, Wisconsin, who is in charge of



Bruce Norris

McIntyre to Head CAP Anniversary

Glenn T. McIntyre has been named to head the committee for the Oak Ridge Squadron's celebration of the 14th anniversary of the Civil Air Patrol. The CAP, the official auxiliary of the United States Air Force, celebrates its 14th anniversary the week of November 25 through December 3.

Major McIntyre is chief of the Oak Ridge National Laboratory Guard Department. One of his main duties as head of the local committee will be to coordinate the plans for a banquet to be held on December 3 in the Starlight Room of the Oak Terrace.

Public Is Invited

The public is invited to attend the anniversary dinner, and tickets may be obtained by calling G. H. Hudson or Eve Hudson at Oak Ridge 5-7410. The deadline for obtaining tickets will be Friday night, December 2. The banquet will be at 6:30 PM Saturday.

Robert Block Joins Laboratory Division

Robert C. Block has joined the Physics Division of Oak Ridge National Laboratory from Duke University, Durham, North Carolina, where he received his Ph. D. degree this year. Dr. Block received his B. S. degree in electrical engineering from Newark College of Engineering in 1950 and his M. A. degree in physics from Columbia University in 1952.

Sixty years ago this quarter

Taken from ORNL "The News" for Fall 1955

- ORNL held Family Day, allowing visitation of the laboratory and some of its facilities. Over 5,000 visited the famous "swimming pool" and "graphite" reactors along with the ORNL Automatic Computer (ORACLE).
- Dr. Edwin McMillan, a 1954 co-recipient of the Nobel Prize for the 1941 discovery of plutonium visited ORNL. He delivered an unclassified talk on "Anti-Protons and Other Recent Work at University of California, Berkeley."
- Dr. Liane B. Russell of the ORNL Biology Division received national recognition for being one of *Mademoiselle* magazine's 1955 Merit Award Winners. This award was based on her contribution to the Atoms for Peace Conference at Geneva, Switzerland. She was the only official woman delegate from the United States to attend the famed meeting.
- Dr. Alvin M. Weinberg delivered the "State of the Laboratory 1955" address. He noted one of primary jobs of the national laboratory is to help establish a bona fide nuclear energy industry.—prepared by ORNL History Room volunteers



“I knew from the time I entered UT that I wanted to major in math.”

Mentors needed for TN Promise college students

TN Promise is a program allowing high school seniors to attend community colleges without paying tuition or standard fees. Students will still be required to pay all other fees and costs for books, etc.

As part of the program, students will need to comply with TNAchieves protocol – one of which is to work with an adult mentor. Additional mentors are needed at Oak Ridge, Clinton and Anderson County high schools.

If you are interested in mentoring a student, please contact Graham Thomas at 615-604-1306 graham@tnachieves.org. This is an excellent program that takes very little time and provides many rewards for both students and mentors.

More information about the program is available at graham@tnachieves.org. An online application form for mentors is available at <https://tnachieves.org/mentor-application>.

UT-Battelle Scholar Adam LaClair continues love of math entering into his senior year

As a youth growing up in Oak Ridge, Adam LaClair loved to do math – whether it be in school or just passing time.

His love of math followed him through school and into the University of Tennessee, where he entered in the fall of 2012 as the UT-Battelle Scholar. Adam started his senior year in August as he was finishing his course load majoring in math and minoring in computer science.

“I knew from the time I entered UT that I wanted to major in math,” Adam said in early September. “I also had interest in pursuing medicine. Quickly, though, I determined math was indeed my love and that has been where my focus has been ever since.”

One of the influences solidifying Adam’s love of math has been Ramus Nicoara, associate professor of math and director of UT’s Math Honors program.

“Dr. Nicoara is not only my advisor, but has become a very good friend,” Adam said. “He has helped me make some decisions along the way as far as classes I need and more recently has given me plenty of guidance regarding selecting a graduate school.”

Adam was part of a group of UT students during the summer working on a special project centered on Hadamard matrices. Using results from number theory and the aid of computers, the group is trying to discover whether there exists a Hadamard matrix of dimension ten whose entries are all powers of the eleventh root of unity. From here, the group plans on expanding their search for Hadamard matrices of larger dimensions whose entries are likewise all powers of a prime root of unity. Because only a few non-trivial families of Hadamard matrices of dimension 10 are known, this project has the potential to further our knowledge of the general structure of Hadamard matrices.

However, Adam’s entire summer was not spent on campus. He traveled to Peru where he was involved in a program studying community development. It also gave him an opportunity to use the Spanish he has learned.

“After I finish graduate school and earn my PhD., I’d like to teach math in another country,” Adam said. “Although I have a lot of Spanish to learn, I can speak it on a conversational level and I think it would be interesting to teach in another country.”

Adam still has some matters to finish as an undergraduate. He was still contemplating where to attend graduate school as the fall semester started. He is also on a committee to help UT freshman honor students find volunteer opportunities.

Further down the line, Adam would like to do more traveling.

“I’ve always had an interest in traveling to Nepal,” Adam said. “I’ve been studying the language and hope sometime in the future I can go there.”

Adam is the son of Tim and Sabina LaClair. Tim works in ORNL’s Energy and Transportation Science Division.—Fred Strohl 🌱

Volunteers are always needed at AMSE

Volunteers are always needed at the American Museum of Science and Energy in Oak Ridge.

From serving at the information desk to helping with presentations to assisting visitors around the museum to talking about Oak Ridge history to helping with tours, volunteers are a useful resource for the tens of thousands of visitors who come to the museum each year. You don’t have to have a science background.

While a number of volunteers are already serving at AMSE, more are always welcome.

If you are interested, please contact Glenda Bingham at 865-576-3200, gbingham@amse.org. 🌱

From the Lab Director

Although I haven't emphasized my travels much in a while, I've attended some particularly interesting gatherings this fall that provided good opportunities to talk about ORNL with global thought leaders in science and policy. Before I update you on other lab activities, let me give you a brief travelogue:

Kyoto, Japan: The fourth global Summit of Research Institute Leaders in early October included leaders of 18 institutes from 13 countries. We discussed common challenges and ways to collaborate through shared facilities, personnel exchanges and programs that encourage early career researchers.

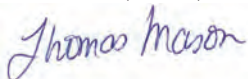
Abu Dhabi, UAE: In late October, I attended the World Economic Forum Summit on the Global Agenda 2015 — a lead-up to the World Economic Forum in Davos, Switzerland. I'm a member of the Global Agenda Council on the Future of Chemistry, Advanced Materials and Biotechnology, where we discussed, among other topics, how these industries can aid society's adaptation to climate change and also contribute to carbon emissions reductions. I also participated in a discussion on the impacts of disruptive technologies such as the Internet of things and drones.

The White House: I attended two White House events in one week. First was the White House Forum on Connecting Regional Innovation Ecosystems to Federal and National Labs, where I described the work ORNL is doing with the business community to generate economic growth. The Manufacturing Demonstration Facility (MDF) and educational programs with the University of Tennessee are examples, and we've seen successes already with several industries citing ORNL as a reason they are coming to East Tennessee. MDF's Craig Blue and UT President Joe DiPietro and several UT officials attended, as well. Later that same week a White House Summit on Nuclear Energy convened to discuss ways to keep the U.S. in the forefront of nuclear energy technology and encourage early career researchers into the field. Alan Icenhour joined me. David Pointer gave a presentation on CASL along with Leslie Dewan, founder and CEO of Transatomic, a startup focused on the ORNL-developed molten salt reactor technology.

I also spent some time in Washington, D.C., at the National Security Laboratory Day on the Hill.

R&D 100s: Congratulations to the ORNL staff involved in six of this year's R&D 100 Awards: **Pavel Shamis** was ORNL team leader on CORE-Direct (Collectives Offload Resource Engine), developed with Mellanox Technologies. **Kirk Sayre** was team lead for Hyperion: Automated Behavior Computation for Compiled Software. **Sheng Dai** and **Shannon Mahurin** were lead developers of the Porous Graphene Desalination Membrane. **Chad Duty** led the BAAM-CI (Big Area Additive Manufacturing — Cincinnati Incorporated) project submitted by Cincinnati Inc. and ORNL and supported by the lab's Manufacturing Demonstration Facility. **Tolga Aytug** was lead ORNL developer of the Multifunctional Superhydrophobic Transparent Glass Coating submitted with United Protective Technologies. **Vlastimil Kunc** led ORNL support for the Genoa 3D Printing Simulation Software submitted by AlphaStar Corp. BAAM-CI also received Editor's Choice in the Process/Prototype category, and the Infrared Nondestructive Weld Examination System, with ORNL staff **Jian Chen** and Zhili **Feng** and partners ArcelorMittal USA and Eagle Bend Manufacturing Inc., was a finalist in the Analytical/Test and Market Disruptor — Service categories, receiving a silver award recognition.

More kudos. Congratulations to our four newest Fellows of the American Physical Society — **Jaime Fernandez-Baca**, **Sergei Kalinin**, **Mark Lumsden**, and **Thomas Maier**. Congratulations also to **Thomas Zachariah**, ORNL's deputy for science and technology, and **Parans Paranthaman**, distinguished research staff member and leader of the Materials Chemistry group, for being named American Association for the Advancement of Science (AAAS) fellows.



Thom Mason



CORRE now gathering monthly at ATLC Meeting Hall in Oak Ridge

The Coalition of Oak Ridge Retired Employees (CORRE) has a new monthly meeting home at the ATLC meeting hall, 109 Viking Road, Oak Ridge.

CORRE's meetings continue to be held at 10 a.m. during the third Wednesday of each month. CORRE is a tax-exempt 501c 5 organization that represents more than 13,000 retirees of the managing contractors of DOE's facilities in Oak Ridge. It is populated entirely by retirees and surviving spouses, run by volunteers and managed by a board of directors.

CORRE's vision is: To be an organization that improves the welfare of its members. CORRE's mission is: To protect, preserve and enhance the retirement benefits of its members and their surviving spouses. CORRE's approach is: To work with contractors, DOE, local and state officials, congressional representatives and other related organizations to secure fair, just and equitable retirement benefits for all eligible retirees.

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.




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Commerce Secretary Pritzker praises ORNL's IACMI manufacturing facility

Secretary of Commerce Penny Pritzker visited the new Institute for Advanced Composites Manufacturing Innovation (IACMI) at ORNL's Manufacturing Demonstration Facility in the Hardin Valley section of West Knox County Aug. 27, praising the advances in manufacturing technology taking place in East Tennessee. "What impresses me most about this facility is the collaboration that is going on and the enthusiasm that you see from scientists working side by side," Pritzker said during a news conference. "Researchers are working with the private sector to create new products or to reinvent the existing products that we have today whether it is cars or whether it is how we build wind turbines." Pictured with Pritzker is Craig Blue of ORNL's Advanced Manufacturing Program and IACMI's chief executive officer.

More information about IACMI is available at <http://iacmi.org/>. 



ORNL media highlights available online at <http://fornl.info>

A weekly listing of ORNL's mentions in the media is now available on the web at <http://fornl.info>.

Compiled by ORNL's Office of Communications from information provided by several media monitoring resources, the media highlights list all of the stories related to ORNL that appear in local and national media during a given week, along with a link to the stories when the links are available. The highlights are available along the left-hand side of the web site.

For more information, contact Fred Strohl, 865-544-4165, strohlhf@ornl.gov.