

2024 Annual Report

Friends of Oak Ridge National Laboratory

The officers and board of directors of the Friends of Oak Ridge National Laboratory (FORNL) are pleased to report on the activities of FORNL for 2024.

FORNL is a nonprofit organization of persons interested in fostering the scientific goals of Oak Ridge National Laboratory (ORNL). We are scientists and engineers, as well as individuals from varied backgrounds, who believe we can increase awareness of the nation's advances in science and technology by providing information to teachers, students, and the general public.

In support of our mission goals, we provide:

- Monthly meetings, featuring invited lecturers, during which co-workers, retirees, and other interested persons can network with one another and learn about current ORNL activities.
- Periodic community-wide presentations and events for the public that showcase ORNL's outstanding scientific and technological achievements and awards or educate the community about special scientific and technological topics of national interest.
- Online and printed newspaper articles about the content of monthly FORNL programs and community lectures.
- Knowledgeable volunteers for DOE-sponsored bus tours and related activities at the American Museum of Science and Energy, K-25 Atomic History Center, and Manhattan Project National Historical Park (located at the Children's Museum of Oak Ridge), and
- STEM outreach, advice, and financial support to area students, a regional science fair, and the DOE-sponsored Tennessee Science Bowl.

Luncheon Lectures

FORNL's primary activity of hosting monthly Luncheon Lecture meetings at noon on the second Tuesday of each month (except in December) continued in 2024. These meetings are free and open to the public and are conducted as hybrid meetings. Lectures are typically presented in person in the UT Resources Center in downtown Oak Ridge and made available on the Internet via Zoom. The option of virtual attendance enables participation by individuals (including former ORNL staff) who live outside the local area, are not physically able to travel, or cannot leave their workplaces long enough to travel to our meetings. Our hybrid meetings frequently attracted up to about 100 attendees, a total participation level greater than our typical attendance before the COVID lockdown, when we met only in person.

FORNL had outstanding Luncheon Lecture speakers this year. We hosted monthly public science and technology lectures in the months of January through November (we normally skip December). This year eight of these lectures were presented by distinguished speakers on ORNL's current staff, two were by former ORNL staff researchers, and one was by a former chairman of the U.S. Nuclear Regulatory Commission. The lecture topics spanned a wide variety of ORNL research areas. The speakers represented a range of personal circumstances and career situations, including several scientists or engineers who originally came from outside the U.S., two women, and individuals ranging from mid-career to many years

past normal retirement age. Speakers were recruited by FORNL board members, led by a committee consisting of Carolyn Krause, Steven Overbury, and Ellen Smith, but with contributions from all board members. Below is a list of speakers and their topics, with hyperlinks to webpages containing announcements of their talks and links to their videos or presentation materials. Newspaper coverage of the talks is listed on page 7.

FORNL Luncheon Lectures for 2024

January 9, 2024 – Mahalingam (Mali) Balasubramanian, Emerging and Solid-state Batteries Group, Electrification and Energy Infrastructure Division, ORNL. “Electrochemical Energy Storage: From Animal Electricity to Electric Vehicles and Beyond”, <https://fornl.org/node/605>

February 13, 2024 – Madhavi Martin, Biosciences Division, ORNL. “Leveraging High-Resolution Laser Spectroscopy for Solutions to Bioengineering, Biomass, and Environmental Characterization”, <https://fornl.org/node/619>

March 12, 2024 – Dr. Jerry M. Parks, Biosciences Division, ORNL. “Structure-based Antiviral Drug Discovery”, <https://fornl.org/node/634>

April 9, 2024 – Bob Bolton, Deputy of Operations for the Next-Generation Ecosystem Experiments in the Arctic (NGEE Arctic) Project, Oak Ridge National Laboratory, “Uneven Ground: What Happens When Permafrost Thaws?” <https://fornl.org/node/659>

May 14, 2024 – Anthony (Tony) Mezzacappa, Department of Physics and Astronomy at the University of Tennessee, Knoxville, “Gravitational Waves from Core Collapse Supernovae”, <https://fornl.org/node/661>

June 11, 2024 - Tomonori Saito, Distinguished R&D Staff, Chemical Sciences Division, ORNL, and Joint Faculty Associate Professor, The Bredesen Center, University of Tennessee Knoxville, “Toward Closed-loop Circularity of Plastics by Chemical Upcycling”, <https://fornl.org/node/686>

July 9, 2024 – Mark Champion, Project Director, Proton Power Upgrade, Neutron Sciences Directorate, ORNL, <https://fornl.org/node/697>

August 13, 2024 – Lee Riedinger, Emeritus Professor of Physics at the University of Tennessee and Emeritus Director of the Bredesen Center, “Evolution of the UT–Oak Ridge partnership”, <https://fornl.org/node/714>

September 17, 2024 – Zili Wu, Chemical Sciences Division and Center for Nanophase Materials Sciences, ORNL, Catalysis for Closing the Carbon Cycle and Decarbonizing Chemical Reactions, <https://fornl.org/node/733>

October 8, 2024 – Ivan (Ike) Selin, former chairman of the U.S. Nuclear Regulatory Commission, “Nuclear Regulatory Commission Past and Present”, <https://fornl.org/node/756>

November 12, 2024 – Dr. Lætitia H. Delmau, Radioisotope Science and Technology Division, ORNL, “Actinide Separations Tailored for Californium-252, Plutonium-238, and Promethium-147 Campaigns”, <https://fornl.org/node/771>

The UT Resource Center (combined rooms 173 A and B), our meeting venue for decades, is an ideal location for holding hybrid meetings. We are fortunate that the University of Tennessee and the East Tennessee Economic Council allow us to use this facility at no cost. To record and share video and sound of a FORNL lecture at high quality, we use a Logitech Brio Stream HDR 4K webcam directed at the speaker that is connected to a MacIntosh Pro laptop logged into a Zoom Pro account on the internet. The lecturer’s PowerPoint presentation can be executed from this computer or from the speaker’s laptop logged in at the

podium or a remote location. The high-quality Epson projector installed in the room projects the speaker and PowerPoint images seen by Zoom attendees onto a 10-foot-wide screen for the live audience. In-room amplification helps in-person attendees hear the presentations. The setup was described fully in our 2022 Annual Report. The hybrid arrangement does increase our requirements for volunteer management of the technical arrangements for the presentations. Herb Krause has led the technical efforts, supported by a volunteer tech team that in 2024 frequently included Steve Overbury and David Fields.

In 2024 we resumed an arrangement that gives in-person luncheon lecture attendees an opportunity to purchase lunch. This had been suspended during the COVID pandemic, and new arrangements had to be established. In 2024 we started serving a light lunch of half-sandwiches from Panera Bread, augmented by a variety of bagged chips, cookies, and canned and bottled beverages purchased from a local supermarket. Attendees are asked to donate \$10 for lunch, which covers the cost of the food and drink. Ellen Smith has been the primary volunteer for food arrangements. In 2024 we also started presenting FORNL coffee mugs to our speakers as a token of appreciation, thanks to the initiative of Steve Overbury, who acquired a supply of mugs, stored them, and brought them to the meetings.



Attendees at a FORNL Luncheon Lecture in the UT Resource Center.

Dick Smyser Community Lectures

This year FORNL also arranged two evening events for the general public in the Dick Smyser Community Lecture Series. This occasional series, which is in its 26th year, offers free lectures on a wide range of topics of interest to the local community. Its name honors the late Dick Smyser, who was founding editor of *The Oak Ridger* newspaper, president of the Associated Press Managing Editors Association from 1973 to 1974, president of the American Society of Newspaper Editors from 1984 to 1985, and a community leader for many years. He also had a strong love of science and news about ORNL research. Judy Dodd Catering

provided hors d'oeuvres and non-alcoholic beverages at receptions held in the lobby of each venue before the community lectures. Annual financial assistance from UT-Battelle has enabled this lecture series to continue.

The first of this year's Dick Smyser Community Lectures was on June 27, 2024, featuring Dr. Peter Fuhr of ORNL, with ORNL co-presenters Dr. Erica Grant, Elizabeth Piersall, and Emma Foley, on the topic of "Drones: Making Sense of the World Below." Their presentation was in the City Room on the Oak Ridge campus of Roane State Community College. Information about the program and some of the presentation materials can be found at <https://fornl.org/node/696>.

The second community lecture was the resumption (after a hiatus of several years) of a longstanding tradition of "State of the Laboratory" lectures by Oak Ridge National Laboratory directors. On November 14, 2024, ORNL Director Stephen Streiffer treated the community to "State of the Laboratory, 2024," presented in the auditorium of the American Museum of Science and Energy (AMSE) in Oak Ridge. FORNL hopes these lectures will continue as an annual event, which had been frequently requested by FORNL members.

Both of this year's community lecture venues were provided to FORNL without cost. We are indebted to Roane State and AMSE for their generosity.

FORNL Interactions With ORNL

In 2024 ORNL continued its practice of providing a community liaison for FORNL. The liaison participates in our board meetings (when available) and helps us communicate with ORNL's management and learn their needs. This arrangement is a great asset to FORNL. In 2024 Annette Brun was assigned as our new liaison, giving Katy Brown well-deserved relief from some of the duties she had taken on when multiple positions were consolidated. We much appreciated Annette's attention to FORNL as our liaison, including her pleasant demeanor and her persistence in pursuing answers to our questions.

As we had done previously, FORNL participated in the annual ORNL Benefits and Wellness Fair in October 2024. Herb Krause, Kathy Gant, and Syd Ball electronically displayed information and discussed the missions of FORNL with employees and several on-site DOE employees. We also demonstrated use of the fornl.org website and showed visitors how to view our past online lectures. We learned that some ORNL employees already visit fornl.org to view our past lecture talks. The fair allows us to interact personally with ORNL employees and attract new FORNL members, particularly those considering retirement.

Before the pandemic, ORNL issued year-long guest badges to paid members of FORNL who had retired from ORNL, allowing opportunities to visit ORNL to attend lectures, meet with former colleagues, or use the library. Many FORNL members have hoped that ORNL would resume issuing guest badges to our members, so we have been disappointed to learn that there are no plans to reinstate this practice. Members have had a particular interest in using visitor badges to attend lectures in the *Eugene P. Wigner Distinguished Lecture Series in Science, Technology, and Policy*, which promotes dialogue between Oak Ridge researchers and managers and renowned leaders in science, industry, and government. FORNL appreciates that one such lecture was held on July 1, 2024, when National Academy of Sciences Director Marcia McNutt spoke, and that arrangements were made through Annette Brun for FORNL members to obtain single-event visitor badges so they could attend the excellent lecture. We observed that several of the questions asked at the lecture came from FORNL attendees. FORNL continues to hope for increased ORNL site access for our members in the future.

After FORNL became aware that the retirement packets that the Human Resources Division issued to retirees no longer included information about Friends of ORNL and other community activities for ORNL retirees, we sought to have a FORNL information sheet added to the packet. We greatly appreciate that arrangements were made through Annette Brun to add such a sheet to the packet, so a FORNL information sheet (illustrated) was included in these packets beginning in late 2024. We thank Fred Peretz for drafting the sheet and ORNL for refining the graphics. The FORNL board believes that these packets were beneficial to retirees and FORNL in the past, and we look forward to meeting new retirees who learn about FORNL from these information sheets.

JOIN

Friends of ORNL



SUPPORT SCIENCE EDUCATION

- Monthly lunch lectures on topics related to ORNL science and engineering
- Evening Community Lectures on topics of interest to the wider community
- Volunteer connections with Oak Ridge museums and tours, including the Manhattan Project National Historical Park and the American Museum of Science and Energy
- Support and volunteer opportunities with local schools and science fairs
- Opportunities for ORNL retirees to interact with active research staff and other retirees
- Opportunities for the general public to get an inside view of ORNL research and engineering activities

Learn more at www.fornl.org, or come to one of our monthly lunch lectures held the second Tuesday of each month (except December) at noon at 1201 Oak Ridge Turnpike, Oak Ridge, TN. (Or check out our website for instructions to log in via Zoom)

All talks open to the public (but membership is appreciated)

www.fornl.org





August 2024

Volunteer Engagement and STEM Education Support

Several FORNL members continued to volunteer their time as docents at the American Museum of Science and Energy (AMSE) and K-25 Atomic History Center, guides for the very popular DOE bus tours that originate at AMSE, or greeters for the Manhattan Project National Historic Park visitor center at the Children's Museum of Oak Ridge. By greeting visitors and talking with them about Oak Ridge science and history, their presence enhances museum guest experiences. In 2024 the three-hour DOE bus tours started at

AMSE and made stops at the K-25 Atomic History Center, ORNL Visitor Center history mural and supercomputer viewing area, and Y-12 New Hope Center. Volunteer bus-tour guides receive training and may serve as lead guides or tour assistants. Board members Fred Peretz and Alan Lowe (executive director of AMSE and the K-25 Atomic History Center), together with our ORNL liaison, kept the FORNL board informed about ORNL and DOE bus tours, volunteer needs, and other museum activities and encouraged FORNL members and lecture attendees to become volunteers.

The FORNL board explored opportunities for FORNL volunteers to support STEM education activities in area schools and alerted members regarding opportunities to mentor prospective college students through tnAchieves (www.tnachieves.org) and related programs such as Tennessee Promise.

FORNL continued its practice of providing financial support to major STEM student activities in our area by making donations of \$1000 each to support the annual Tennessee Science Bowl (TSB) managed by the Oak Ridge Institute for Science and Education (ORISE) and the annual Southern Appalachian Science and Engineering Fair (SASEF) hosted by the University of Tennessee.

News Media Outreach

FORNL extends the reach of its public lecture programs through high-quality news media reports published in print and online by *The Oak Ridger*, Oak Ridge's daily newspaper. Board member Carolyn Krause, a professional journalist and science writer, continued to provide announcements of all FORNL lectures and later wrote and contributed one or more feature articles about each lecture. This year she also provided a feature article about the Wigner Lecture presented by Marcia McNutt. Her feature articles summarizing outstanding research at ORNL and other institutions, which were checked by the speakers or the sponsoring institutions before publication, and typically appeared on the front page of the print newspaper, create additional public visibility for Oak Ridge science and for FORNL's activities.

The next page lists hyperlinks to the extensive newspaper coverage that appeared in 2024 as a result of Carolyn's efforts.

Newspaper Coverage Generated by FORNL Efforts in 2024

Wigner Lecture, July 1, 2024 – Marcia McNutt, National Academy of Sciences Director

<https://www.oakridger.com/story/news/local/2024/08/20/natl-academy-of-sciences-director-us-science-losing-its-lead-in-world/74843830007/>

FORNL Luncheon Lectures

January	https://www.oakridger.com/story/news/local/2024/01/05/ornl-battery-research-topic-of-jan-9-fornl-talk/72093963007/ https://www.oakridger.com/story/news/local/2024/02/01/ornl-researchers-target-better-cheaper-batteries/72399872007/
February	https://www.oakridger.com/story/news/local/2024/02/10/fornl-talk-feb-13-lasers-biofuels-and-climate-impact/72526655007/ https://www.oakridger.com/story/news/local/2024/03/04/ornl-laser-technique-tests-for-grassoline-use-weather-history/72792446007/
March	https://www.oakridger.com/story/news/local/2024/03/07/drug-discovery-research-targeting-covid-to-be-topic-of-oak-ridge-talk/72883095007/ https://www.oakridger.com/story/news/local/2024/04/14/how-ornl-researchers-aid-in-the-discovery-of-new-drugs/73286643007/ https://www.oakridger.com/story/news/local/2024/04/12/an-ornl-discovery-could-guide-mercury-remediation/73241907007/
April	https://www.oakridger.com/story/news/local/2024/04/05/alaskan-engineer-now-at-ornl-to-speak-on-permafrost-thawing-april-9/73205997007/ https://www.oakridger.com/story/news/local/2024/05/08/arctic-soil-thawing-poses-risks-to-alaskan-life-and-climate/73543155007/
May	https://www.oakridger.com/story/news/local/2024/05/09/exploding-stars-and-gravitational-waves-topic-or-may-14-fornl-talk/73629173007/ https://www.oakridger.com/story/news/local/2024/09/06/ornl-ut-scientists-aim-to-better-understand-how-massive-stars-explode/74858623007/
June	https://www.oakridger.com/story/news/local/2024/06/07/ornl-inventor-of-the-year-to-speak-on-cutting-plastic-pollution/74001504007/ https://www.oakridger.com/story/news/local/2024/07/02/recycling-plastic-waste-success-of-ornl-technologies-recognized/74158971007/
July	https://www.oakridger.com/story/news/local/2024/07/05/july-9-talk-on-proton-power-upgrade-as-sns-returns-to-operation/74306897007/ https://www.oakridger.com/story/news/local/2024/08/28/planned-doubling-of-sns-power-expected-to-spur-scientific-discoveries/74772374007/
August	https://www.oakridger.com/story/lifestyle/things-to-do/2024/08/09/new-book-on-ut-oak-ridge-lab-partnership-history-topic-of-aug-13-talk/74635512007/ https://www.oakridger.com/story/lifestyle/2024/09/25/evolution-of-ut-ornl-partnership-saving-of-the-lab-described-in-new-book/75362167007/ https://www.oakridger.com/story/lifestyle/2024/10/01/evolution-of-utoak-ridge-partnership-described-in-new-book-part-2/75468118007/ https://www.oakridger.com/story/lifestyle/2024/10/08/evolution-of-ut-oak-ridge-partnership-described-in-new-book-part-3/75558267007/
September	https://www.oakridger.com/story/news/local/2024/09/13/catalyzing-the-conversion-of-co2-emissions-to-fuel-topic-of-fornl-talk/75203201007/ https://www.oakridger.com/story/news/local/2024/12/24/can-climate-change-be-curbed-through-chemistry/77050868007/
October	https://www.oakridger.com/story/news/local/2024/10/04/former-nuclear-regulatory-commission-chair-to-address-oak-ridge-audience-oct-8/75494908007/ https://www.oakridger.com/story/news/local/2024/12/06/will-regulatory-reform-lead-to-advanced-nuclear-power-reactors/76622763007/
November	https://www.oakridger.com/story/news/local/2024/11/06/radioisotope-separation-methods-at-ornl-are-topic-of-nov-12-talk/76068658007/ https://www.oakridger.com/story/news/local/2024/12/05/seaborg-award-winner-tells-how-ornl-makes-useful-isotopes/76802034007/

Dick Smyser Community Lectures

On Drones, June 2024

<https://www.oakridger.com/story/news/local/2024/06/21/find-out-how-drones-help-oak-ridge-lab-researchers/74125729007/>

<https://www.oakridger.com/story/news/local/2024/08/06/how-ornls-smart-drones-help-fight-fires-protect-the-power-grid/74636880007/>

State of the Lab, November 2024

<https://www.oakridger.com/story/news/local/2024/11/11/ornl-director-to-give-his-1st-state-of-the-lab-address-thursday/76197959007/>

<https://www.oakridger.com/story/news/local/2024/11/26/ornl-director-provides-update-on-fast-growing-lab/76569064007/>

Organization Business

Friends of ORNL is a membership organization and is registered with both the State of Tennessee and the IRS as a 501(c)(3) nonprofit, charitable organization. FORNL membership is open to anyone, including retirees from ORNL and the interested public. Member dues are \$20 per year or \$200 for lifetime membership. As of the end of 2024 FORNL had 107 paid members in total (up from 103), including 56 life members and 51 annual members. More than 350 people, including FORNL members and others who are interested in FORNL or ORNL, have registered to receive our email announcements, and an average of 48% opened our email messages this year. The Friends of ORNL page on Facebook now has 419 followers. Community members also attend the Luncheon Lecture series, and some participate in our brief pre-lecture social time and business meetings that promote important community outreach activities.

The organization is led by a ten-member board of directors whose members are elected to two-year terms and may serve no more than three consecutive terms. The organization's four officers are board members appointed to their officer positions by the board. The board meets once a month to plan and prepare for FORNL activities. The ORNL liaison and FORNL volunteers identified as "Adjunct" board members are also invited to participate in board meetings. In 2024 most board meetings were conducted via Zoom. Al Ekkebus and Herb Krause concluded their terms on the board in early 2024 and the seats they vacated were filled by Alan Lowe and Kathy Gant.

FORNL Board and Officers for 2024 (March 2024 to March 2025)

FORNL Officers

President	Ellen Smith
Vice President	Steve Overbury
Secretary	Fred Peretz
Treasurer	David Mullins

Board of Directors

Syd Ball	Alan Lowe
David Fields	David Mullins
Kathy Gant	Steve Overbury
Ray Garrett	Fred Peretz
Carolyn Krause	Ellen Smith

Adjunct Board Members

Herb Krause	James Rushton
Connor Matthews	Kent Williams
James Rome	

ORNL Liaison	Annette Brun
---------------------	--------------

Webmaster	James Rome
------------------	------------

FORNL is financed by community grant donations from UT-Battelle, member dues, and other charitable gifts, in that order. Gifts include small matched donations from corporations (such as Apple Computer) that use Benevity Causes or the American Online Giving Foundation as a platform for employee giving. We also receive and are grateful for in-kind assistance from the East Tennessee Economic Council (ETEC), which continues to give us no-cost space to hold our monthly lunch lectures at the University of Tennessee Resource Center at 1201 Oak Ridge Turnpike, and from the American Museum of Science and Energy and Roane State Community College, which provided venues at no cost for our Community Lectures in 2024. We further appreciate the in-kind contributions of *The Oak Ridger* in publishing Carolyn Krause's announcements and articles covering FORNL lectures.

FORNL's finances are overseen by treasurer David Mullins, who keeps close watch over our accounts, takes care of annual financial reporting to the state and federal governments, and also maintains our membership records as volunteer membership chair. The diligent efforts of Treasurer and Membership Committee Chair David Mullins, Secretary Fred Peretz, and board adjunct Kent Williams kept all FORNL business records and annually required legal documents up to date. Kent Williams is appreciated for maintaining our annual corporate registration with the state of Tennessee.

The Friends of ORNL website at www.fornl.org (home page illustrated) is a key element in our internal and external communications. It provides general organization information, hosts announcements of upcoming events and Zoom links for virtual attendees at our lectures, and provides access to scientific and technical news released by ORNL. Jim Rome designed the site and maintains it, with particular attention to internet security. The design enables board members to easily update the site's information contents.

Announcements of FORNL monthly meetings and other activities are sent to interested persons via email, using MailChimp software and an email list maintained on the FORNL website. FORNL members and others can sign up for email using a utility on the website. FORNL's paid MailChimp account allows up to three named board members to originate messages.

A popular selection on the website is the "Past Talks" section that gives access to recordings of FORNL's past lectures dating back to May 2021. Site visitors can read the talk abstract and the speaker's biographical sketch by clicking on the talk title and/or be linked to the talk that was uploaded to the "Friends of ORNL" YouTube channel. The "ORNL News" section of the [FORNL](http://www.fornl.org) website is regularly updated by Carolyn Krause with a condensed version of and links to the latest news releases in the "News" section of the www.ornl.gov public website. Website visitors can also find convenient links to *Treasures from the Archives* (ORNL historical articles) and expanded information about FORNL and its operations.

FORNL also maintains a page on Facebook at www.facebook.com/FriendsofORNL/ to enhance awareness of our organization and its activities, particularly the monthly luncheon lectures and community lectures. Ellen Smith posted announcements and managed the page.

FORNL has access to two paid Zoom accounts to support its activities, including Herb Krause's personal account that he provides for FORNL events and an additional account acquired by FORNL in 2024 that is used for board business.

In annual business, we thank the 2024 Nominating Committee, convened by Alan Lowe and also including board members Kathy Gant and Fred Peretz and non-board members Kent Williams and Ronnie Bogard. The committee's recommendations were for re-election of board members Syd Ball and Carolyn Krause for their third consecutive two-year terms; re-election of Steve Overbury for his second consecutive two-year term; and election of Gloria Caton, a past three-term member, and Roger Macklin to serve their first two-year terms, filling board seats vacated by David Fields and Fred Peretz. The new board was to begin its service in March 2025. We thank David Fields and Fred Peretz for their service up to that date.

As a recipient of a 2024 community grant from UT-Battelle, FORNL's activities in 2024 continued to contribute strongly to UT-Battelle's stated Corporate Giving areas in the categories of Public Awareness and STEM Education. FORNL members greatly appreciate the continued financial support from UT-Battelle which enabled our community lectures and support for STEM activities. During the year we acknowledge UT-Battelle as the sponsor of the Community Lecture Series in programs, on our website, and in announcements. We believe FORNL's efforts recompense UT-Battelle bountifully!

For the FORNL Board
Ellen D. Smith, President, Friends of ORNL
July 2025

Remembering FORNL Members (Current and Past) We Lost in 2024

Bob Compton 2/27/2024
Woody Gove 11/25/2024
Margarete Ohnesorge 1/9/2024
Bob Olson 4/28/2024