



JUNE 24, 2025

1-3:30 p.m. • Wigner Auditorium



Welcome!

Today's Lightning Talks competition is the final stage of ORNL's annual Your Science in a Nutshell contest, waged by postdoctoral and early career staff members. Sixteen finalists will vie today for the title of best 3-minute research presentation, and lunch with Laboratory Director Stephen Streiffer and Deputy for Science and Technology Susan Hubbard. All finalists will receive a professional-cut video of their Lightning Talk. Planning for the third annual National Laboratory Research SLAM! is underway. Finalists from today's competition will have the chance to be selected to compete against winners in local competitions across the national laboratory complex.

Finalists were chosen from among 42 entrants, and they represent 7 research directorates and a wide range of fascinating research topics. They took science communication and slide design training and worked with mentors from across the lab to hone the 3-minute research talks they will present today.

The competition is hosted by the Office of Research Education in collaboration with the Laboratory Director's Office and the Communications and Community Engagement Directorate.

Help us VOTE!

After all presentations are complete, a slide with a QR code will be displayed. Use the QR code to access the People's Choice voting form. You'll have 15 minutes to vote. Please take time to let us know your People's Choice winner!

A G E N D A

1:00 PM	Welcome
1:05 PM	Introductions and Competition Overview
1:15 PM	Presentations
	Ashish Gautam
	Alexandra Moy
	Julian Cosner
	Anna Vlot
	Clinton Stipek
	Maria Mahbub
	Jacob Mohar
	Aline Banboukian
	Luis Caicedo Torres
	Viktoriia Baibakova
	Daanish Tyrewala
	Spenser Cox
	Nirjhar Sarkar
	Zechariah Kitzhaber
	Bhagya Prabhune
	Bryan Conry
3:00 PM	Break
3:15 PM	Winners Announced

Many Thanks!

Your Science in a Nutshell organizers wish to thank the ORNL staff members who served as mentors:

Daniel Adams, Valentino Cooper, Scott Curran, Prasanna Date, Mitch Doktycz, Dianne Ezell, Julie Ezold, Yashika Ghai, Sumner Gibbs, Nick Gregorich, Rinkle Juneja, Anuj Kapadia, Lucas Lindsay, Thomas Proffen, Sara Shoemaker, Sarah Walters

The organizers also wish to thank today's judges:

Susan Hubbard, ORNL Deputy Director for Science and Technology
David Keim, ORNL Chief Communications Officer
Jamie Weaver, DOE Oak Ridge Site Office Business Division Director
John Zomchick, University of Tennessee–Knoxville Provost
Deb Crawford, University of Tennessee–Knoxville Chancellor for Research

Special thanks to Delphia Howze for helping us kick off the People's Choice voting.

Finally, we wish to thank Clarice Phelps (ISED), William Jenks (ORE), Lisa Scott (Accentuate Communication), and Laurie Varma (ORE) for their assistance selecting this year's finalists.

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**VIKTORIA BAIBAKOVA***Electrification and Energy Infrastructure Division***Piece by Piece: AI Agents for Materials Discovery****MARIA MAHBUB***Cyber Resilience and Intelligence Division***The DNA Whisper Catcher: A Story About Predicting Lung Cancer Before It Strikes**

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**ALINE BANBOUKIAN***Manufacturing Science Division***A Better Cup of Steam: Decarbonizing Food Manufacturing****JACOB MOHAR***Manufacturing Science Division***The Future of Ceramic 3D Printing**

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**LUIS CAICEDO TORRES***Nuclear Energy and Fuel Cycle Division***Looking for Trouble****ALEXANDRA MOY***Chemical Sciences Division***Plasma Rain for the Batteries of Tomorrow**

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**BRYAN CONRY***Nuclear Energy and Fuel Cycle Division***Fueling the Future, One Poppyseed at a Time****BHAGYA PRABHUNE***Computational Sciences and Engineering Division***The Secret Life of 3D-Printed Metal**

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**JULIAN COSNER***Biosciences Division***Crafting the Poplar Microbiome****NIRJHAR SARKAR***Materials Science and Technology Division***Single Photon Detection – A Game of Quantum Tennis**

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**SPENSER COX***Biosciences Division***In-Home Pathogen Defense Systems****CLINTON STIPEK***Geospatial Science and Human Security Division***A Symphony of the Built Environment**

N

**ASHISH GAUTAM***Computer Science and Mathematics Division***NeuroCoreX: A Tiny Brain in the Palm of Your Hand****DAANISH TYREWALA***Buildings and Transportation Science Division***Raise the Anchor, Fuel the Shift – Ammonia can Provide a Global Lift**

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**ZECHARIAH KITZHABER***Radioisotope Science and Technology Division***Laser Monitoring for Next-Gen Nuclear Reactors: Lessons of the Past Lead to Solutions of the Future****ANNA VLOT***Biosciences Division***A “Wildfire” in a Petri Dish**

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 OAK RIDGE
National Laboratory