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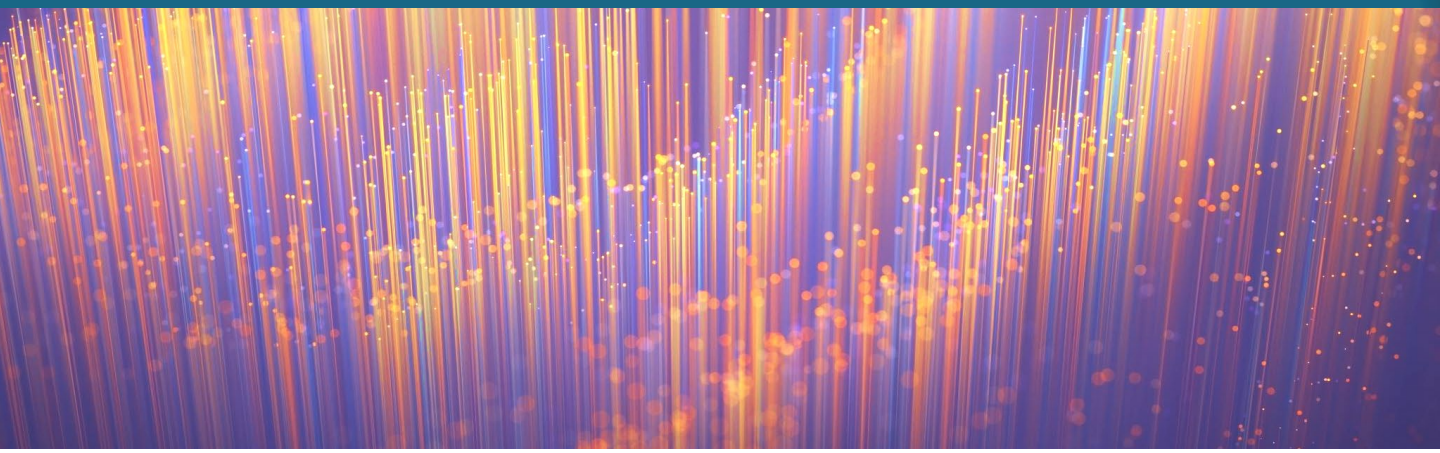

Volume 1 | Issue 3
Summer 2025

SANDIA SYNERGY

A Newsletter Empowering Postdoctoral Associates to Advance Science & Technology at Sandia National Labs

Connecting Science to Society

Dear Readers,

Welcome to the summer issue of *Sandia Synergy* in which we provide tangible examples for "Connecting Science to Society" highlighting three workshops in our science communication series with strategies for **technical writing at Sandia and holding informal conversations in science.**

We also spotlight postdoctoral achievements, including the new **Hruby Fellows** and **top cited Sandia postdoc research articles** published in 2025.

Finally, we introduce two esteemed organizations dedicated to advancing scientific knowledge and promoting its application for the benefit of society, the **National Academies of Sciences, Engineering, and Medicine (NASEM)** and the **American Association for the Advancement of Science (AAAS).** Both organizations share a commitment to enhancing the understanding of science and its role in addressing global challenges.

Happy Reading!

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Spotlight on 2025 Sandia Postdoctoral Appointee Publications

The highest cited 2025 publications with **Sandia Postdocs** as a co-author are listed below, along with their research clusters. (left panel). Click on the links to learn more and log into your SNL subscription of SciVal for additional analyses.

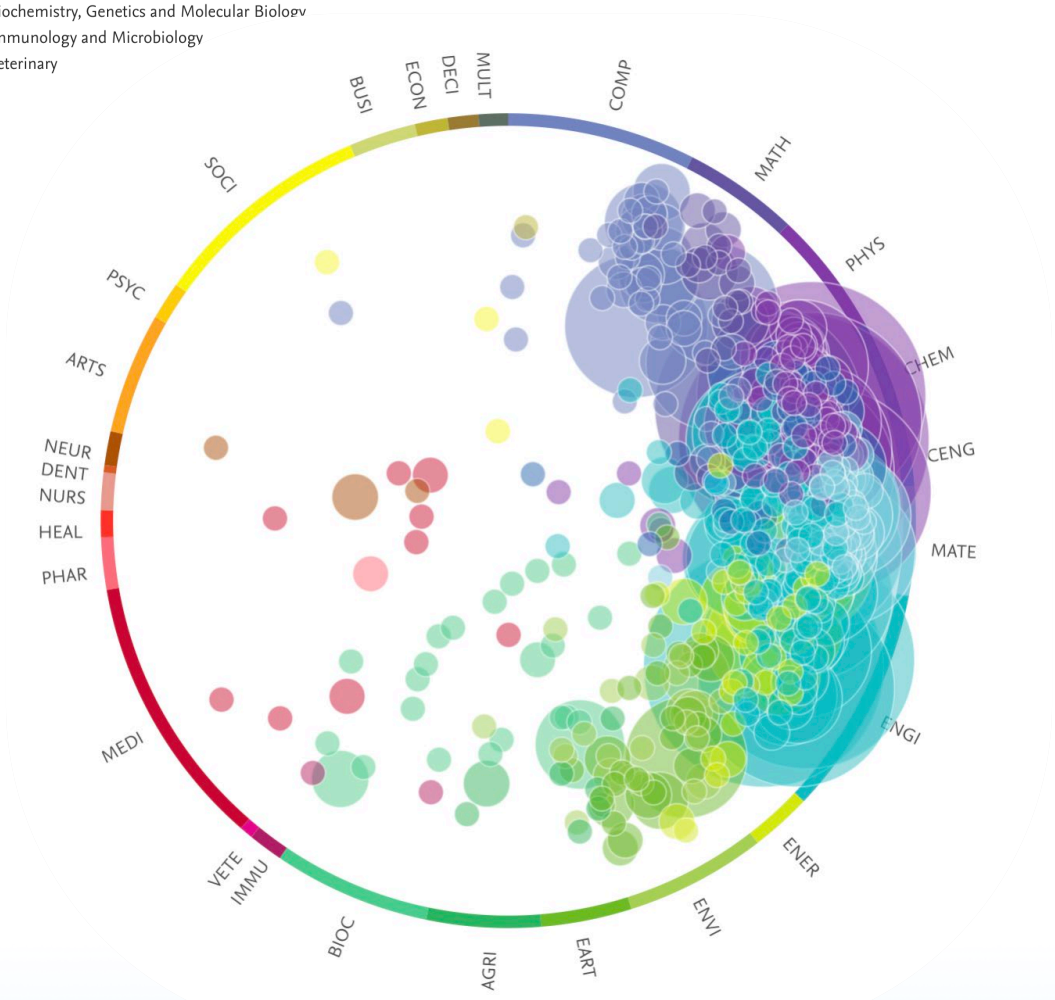
Adsorption; Metal Organic Framework; Organic Polymer	**Song, B.,** Sikma, R.E., Meyerson, M.L., et al. (2025). The selective adsorption of Ni2+ over Co2+ from aqueous solutions in surface functionalized metal–organic frameworks. Separation and Purification Technology, 355.
Nitride; Electron Mobility; Transistor	Klein, B., Allerman, A., Armstrong, A., Rosprim, M., **Tyznik, C.,** et al. (2025). Al-Rich AlGaN Transistors with Regrown p-AlGaN Gate Layers and Ohmic Contacts. Advanced Materials Interfaces,12(2).
Autoencoder; Learning Systems; Artificial Intelligence	Walker, E., Trask, N., Martinez, C., Lee, K., Actor, J.A., Saha, S., Shilt, T., **Vizoso, D.,** et al. (2025). Unsupervised physics-informed disentanglement of multimodal data. Foundations of Data Science,7(1) 418-445.
Neural Network; Deep Learning; Turbulent Flow	Shen, Y., **Needels, J.T.,** Alonso, J.J. (2025). VortexNet: A Graph Neural Network-Based Multi-Fidelity Surrogate Model for Field Predictions. AIAA Science & Technology Forum and Exposition, AIAA SciTech Forum 2025.
Molybdenum Compounds; Layered Semiconductor; Tribology	**Babuska, T.F.,** Mings, A., Larson, S.R. et al. (2025). Microstructural Assessment of Molybdenum Disulfide Coatings Using Nanoindentation Hardness. ACS Applied Materials and Interfaces,17(2) 4210-4217.

Sandia's Publication Trends (2021-2025)

COMP	Computer Science
MATH	Mathematics
PHYS	Physics and Astronomy
CHEM	Chemistry
CENG	Chemical Engineering
MATE	Materials Science
ENGI	Engineering
ENER	Energy
ENVI	Environmental Science
EART	Earth and Planetary Sciences
AGRI	Agricultural and Biological Sciences
BIOC	Biochemistry, Genetics and Molecular Biology
IMMU	Immunology and Microbiology
VETE	Veterinary

Analysis of Sandia's Publication Data Set

- 822 different research topics reported over this 5-year range.
- Highest productivity in **Computer Science, Mathematics, and Physics** research at Sandia National Laboratories.



The chart above shows the distribution of subject areas, which are listed to the left in order of concentration of published works. Bubble size indicates scholarly output of the publication data set. Bubble location indicates research area; the closer to the center of the circle, the more interdisciplinary the publication. Data source: **SciVal,** an Elsevier analytics tool with access to the research performance of over 24,000 research institutions in 200+ countries.

Congratulations to the 2025 Hruby & Truman Fellows!

Olivia Krohn, PhD in Physics, University of Colorado

8353 |Gas Phase Chemical Physics

Ravyn Malatesta, PhD in Physical Chemistry, Georgia Institute of Technology

1881 | Nanostructure Physics

Sam Peana, PhD in Electrical and Electronics Engineering, Purdue University

05219 | MEMS Technologies

Dan Herman, PhD in Atomic/Molecular Physics, University of Colorado

5228 | AO Sensing & EC Engineering

Sandia's Jill Hruby & Harry S. Truman & Fellowships prestigious appointments were designed to attract and support exceptional early-career scientists and engineers. They were also established to honor the legacies of:

- **Jill Hruby,** the first woman to assume the role of director in a large, multidisciplinary national security laboratory. Her unwavering dedication has inspired countless researchers at Sandia and across the nation to pursue technical leadership paths. Notably, Jill was also selected to serve as the DOE's Under Secretary for Nuclear Security during the Biden Administration.
- **Harry S. Truman,** the 33rd President of the United States known for his leadership on atomic energy applications and policies during critical times in our history, which shaped the future of nuclear weapons and defense.

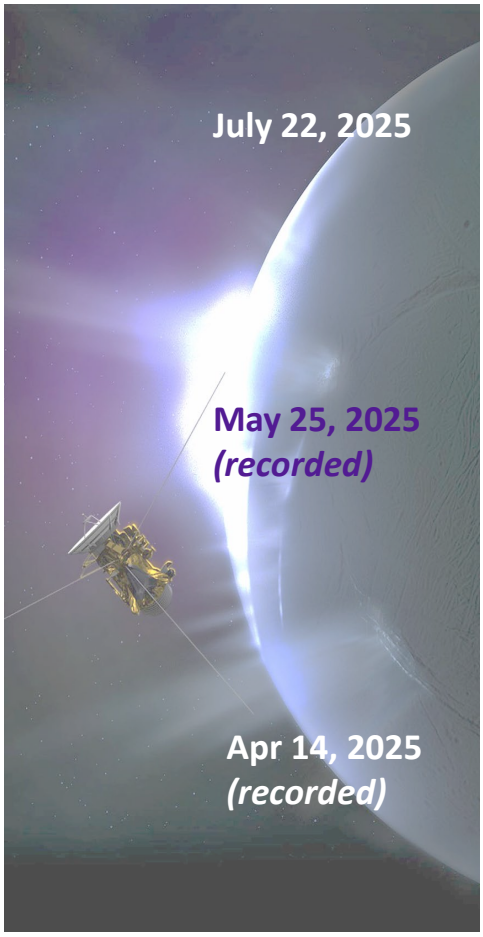
Together, these fellowships both honor the contributions of their namesakes and serve as vital investments in the future of science and technology at Sandia, fostering a culture of innovation and leadership among postdoctoral appointees. Learn more about these distinguished Fellows in the Sandia ***LabNews***.

National Academies of Sciences, Engineering, & Medicine

The National Academies of Sciences, Engineering, and Medicine was created to provide independent, objective advice to inform the Government on science policy, spark progress and innovation, and confront challenging issues for the benefit of society. **Subject matter experts from academia, industry, and the government convene from across the spectrum of the S&T enterprise.** NASEM provides expert advice and insights through rigorous studies and reports, addressing critical issues in science, engineering, and health.

ATTEND A NATIONAL ACADEMIES MEETING VIRTUALLY

Convenings are held in person at the Washington DC location as well as virtually. Click on the events below, which are accessible to online audiences.



Reimagining STEMM Graduate Education and Postdoctoral Career Development: A Summit

Future Trajectories of Human-AI Collaboration and Teaming

Chemistry 2050 | Space

Based on the publication trend data illustrated on page 3, the Division on Engineering and Physical Sciences may be of interest to many Sandia postdocs!

American Association for the Advancement of Science

AAAS is a scientific society and publisher of the Science family of journals. Its mission is to advance science, engineering, and innovation throughout the world for the benefit of all. As such there are a plethora of programs, fellowships, competitions, and informational events hosted by AAAS that might be interesting to postdoctoral researchers. Visit their site to learn more: **AAAS Home Page**

AAAS Programs on Enhancing Science Communication

In serving society through science, AAAS sponsors events to enhance communication between scientists & society. Click on the flagship programs below to learn more.

AAAS/Subaru Prize for Excellence in Science Books

A celebration of outstanding science writing and illustration for children and young adults. Its purpose is to encourage the writing and publishing of high-quality science books for all age groups to enhance the understanding and appreciation of science, technology, engineering, and mathematics.

SciLine

SciLine

Pathways for scientists to interact with journalists who are covering science-related topics. Scientists are equipped with knowledge and insights that can help journalists accurately report the latest evidence in the right context. Our Science Communication Series Speaker, Dr. Tori Espensen is a Media training manager at SciLine. See the highlights of her workshop on page 8, and connect with SciLine if you're interested in this opportunity.

AAAS Kavli Science Journalism Awards

For professional journalists, the awards honor distinguished reporting on science across the world.

Science Communication Series:
Scientific & Technical Report Writing

In our March Science Communication workshop, Carson Bennett provided tips and resources for effective writing, especially in a structured environment like Sandia. A few highlights are listed below, and the recording is linked in case you missed it.

WRITING IS AN OPPORTUNITY

Writing is an opportunity to advertise your work and writing well can enhance your reputation, improve your potential to gain funding, lead to more resources and new research opportunities. In contrast, disorganized writing can give the impression that your work and approach to work is also disorganized; the more clearly you write about the work, the more clear the science.

PLANNING IS FUNDAMENTAL

Identifying the ***rhetorical situation*** of your writing—the purpose, audience, genre, context— can help determine content to include/exclude and ensure the document functions as intended.

Create an outline which can originate from a proposal for the project. Borrow from your previous writing as a scaffold or building block to help outline your product.

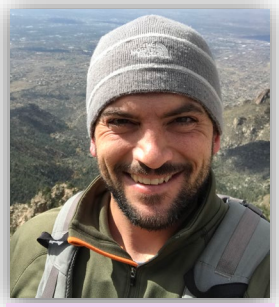
TEMPLATES & FORMATTING

Different templates are required for the various technical documents that we're required to write, e.g. internal memos, SAND reports, ND program products, external journal articles. Seeking assistance from others who are knowledgeable about formatting and style requirements, ***especially when working on SAND reports and LDRD proposals*** can save time and reduce frustration.

SANDIA RESOURCES TO ENHANCE YOUR SCIENCE COMMUNICATION

- Request technical writer help through the **Knowledge Management Office**, which comprises 150+ personnel, where technical writers work on classified and unclassified materials.
- **COMM301** is a good place to start at Sandia for technical reporting, especially for writers for whom English is a second language.
- **COMM302** is a deep dive into the steps of the writing process with examples and interactive work; announced every 6 months in the Sandia Daily News.
- **SAND reports** are approved and released via issuance of a SAND number. They require the appropriate **template available through the Thunderbird Brand Page** and **Information Release/Publications** process to receive a SAND number.

"One of the coolest things about working at Sandia is that not many people in the world do the things that we do, so being able to communicate effectively both internally and to disseminate information to the rest of the world is really important; technical documents must be well-written because you are representing Sandia's quality and integrity. Your documents are your legacy for future generations and future Sandians."



Carson Bennett,
Technical Writer & Editor, Communications & Marketing, Org 3245 Sandia National Laboratories
cabenne@sandia.gov

Science Communication Series: Conversations on Science

In our April Science Communication workshop, Dr. Tori Espensen led an engaging session on articulating your work to the public, specifically on answering **"What do you wish the general public better understood about your area of research?"**

Huge thanks to Nickolas Jordan Gantzler, postdoctoral appointee in Computational Materials Science, for volunteering to demonstrate Tori's strategy for training scientists on distilling a message from meandering around your research topic with technical jargon to clearly articulating how your work connects to the public.

Highlights of the session are listed here, and the recording is available for your viewing below.

Reasons for Public Communication	1) **Transparency to Funders**: Scientists owe it to taxpayers to explain how their research is funded and its implications; 2) **Encourage STEM**: Public communication can inspire future generations to pursue careers in science; **3) Personal Fulfillment**: Engaging with the public allows scientists to see the immediate impact of their work.
Overcoming Barriers	Common fears that prevent scientists from communicating publicly, e.g. feeling unqualified or fearing misrepresentation. She reassured participants that they possess valuable knowledge and that practice is essential for building confidence.
Understanding the Audience	Scientists must adapt their communication style to ensure clarity and engagement. Beware of the "curse of knowledge," where experts may unintentionally use jargon or complex explanations that alienate lay audiences.
Preparation Strategies	1) Identify the "why" behind your research to convey its significance; 2) Practice responses to potential questions and tailor messages to audience's interests; 3) **Approach public communication as a conversation rather than lecture, fostering two-way dialogue.**

"A lot of science worldwide is funded by taxpayers in one way or another, allowing us to do our work, and are owed transparency regarding what they're paying for and what's coming out of it… Decision makers at city or federal levels may not have expertise in most topics they decide on, yet they can have massive impacts on society. So it's really important that they're being informed on issues by the people who are experts in those areas.... The wow factor of scientific discoveries and an understanding of different science careers can potentially inspire others to become scientists."

Tori Espensen, Ph.D.
Media training manager
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2025 Sandia Postdoc Science Communication Seminar Series

March	**Technical Writing**	**Carson Bennett: Technical Writer/Editor, Sandia National Laboratories** An introduction to strategy, format, and tools/resources to improve your writing. This workshop will review the steps in the writing process, explore common elements of strong scientific and technical communication, introduce the SAND Report template, and provide information about where to go for writing help.
April	**Conversations on Science**	**Dr. Tori Espenson: AAAS SciLine, Media Training Manager** Sharing science works best when it's conversational, and conversation with someone who's stiff or rote can be uncomfortable. Walk the line between preparing to answer questions and memorizing potential answers and select which work best in response to a specific question or audience.
May	**Transforming Technical Topics into a Story**	**Kevan MacKay: Youtuber and Documentarian** Grounded in a background in photonics research, and with millions of followers on Youtube, Bobby Broccoli will share his insight and tips on producing engaging science documentaries and video commentaries.
June	**Preparing a Press Release on Published Works**	**Dr. Andrea Stathopoulos: Senior Communications Advisor · Spire Communications** In this workshop, participants will learn strategies for sharing the significance of their published research in press releases prepared for the news media or trade magazines.
July	**Teaching to Learn**	**Dr. Anirban Mazumdar: Assistant Professor of Mechanical Engineering, Georgia Institute of Technology** Interested in a career in academia? Learn tips from a former SNL postdoc and recipient of teaching award when preparing teaching talks, an important aspect of interviewing for academic positions.

What to Expect

- Engage in 60-minute interactive workshops
- Develop skills in written and verbal science communication for different audiences
- Gain insight into career paths that apply science communication skills
- Draft products across a variety of media and formats

OPPORTUNITIES

Searching for full-time permanent positions at Sandia National Laboratories?

Search by the term "Early Career" to find postings that might be more relevant.

https://sandia.jobs/jobs/

Published a paper recently, received a funding award, or have celebratory career news to share?

Send us the details so that we can highlight your success!

A collaboration between Sandia's Postdoctoral Program Office and the Universities Research Association

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