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Summer 2019 Newsletter: Recent Research, Talent Development, and Partnerships Highlights in the Sandia National Laboratories–Purdue University Academic Alliance

Purdue Hosts Inaugural Hypersonics Conference

Continuing its active support for hypersonics research, Purdue University recently hosted a first-of-its-kind Hypersonics Capabilities Conference. Created by the Institute-for Global Security and Defense Innovation (i-GSDI) in partnership with the National Defense Industrial Association (NDIA), the conference included a one-day unclassified event and a two-day classified event at Purdue on July 30 to August 1. The conference fostered strategic dialogue on hypersonics for national security by bringing together knowledge and experience from the military, government, industry, and academia. The conference will help Sandia and Purdue as they advance Sandia's Autonomy for Hypersonics (A4H) Laboratory Directed Research and Development (LDRD) program Mission Campaign (MC) investment area (IA). The A4H MC IA publicized its current research with an interactive display. Sandia Director for Integrated Military Systems David Plummer spoke on the conference's "Developing Advance Capabilities" panel. Sandia's Alex Roesler, senior manager of Pathfinder Technologies Engineering, said after attending the conference that "Purdue and i-GSDI did an excellent job organizing and hosting the



first NDIA hypersonics conference. They had an impressive group of speakers and the connections I made during the conference will help further the work we're doing through the A4H Mission Campaign." Other Sandians in attendance included Hae-Jung Murphy, senior manager, Next Generation Systems and Analysis; Jason Brown, manager, Autonomy for Hypersonics; Hartono Sumali, manager, Autonomous Sensing and Control; Mark Pepple, Systems Engineering; Kyle Williams, Controls Engineering; and Megan Davidson, technical business development specialist.

Alex Roesler describes Sandia's A4H Mission Campaign Investment Area at the NDIA Conference.

Purdue-Sandia Faculty Liaison Completes Year-Long Sabbatical, Renews Sandia Contract

This summer, Purdue Computer Science Professor Eugene "Spaf" Spafford completed his sabbatical at Sandia National Laboratories. During his sabbatical, Spaf engaged with leaders and cybersecurity and cyber-related programs across the labs, leveraging his decades of expertise to help Sandia stay ahead of threats for effective cyber defense. In partnership with the Sandia Academic Alliance program, Spaf is continuing efforts with Sandians Marcus Chang, director of Cyber Security & Mission Computing; Han Lin, manager of Cyber Security Initiatives; and Vince Urias, Cyber Security Initiatives to seek new talent

POC: [Ken Patel](#)

Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International, Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525



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pipeline opportunities. Potential efforts include crafting a Master's degree program tailored to Sandia's program goals, developing new platforms and environments for cyber experimentation by students, and sponsoring cyber competitions on behalf of Sandia at Purdue.

Also, this summer, Spaf hosted a Sandia exchange for Purdue department heads and professors in computer science, electrical engineering, and computer engineering to learn about Sandia's mission and brainstorm new approaches to collaboration work together.

Finally, Spaf's contract with Sandia was extended for FY20, allowing him to continue consulting and developing initiatives for cybersecurity for Sandia.



"Spaf and Sandia's Ken Patel meet with visiting Purdue faculty Saurabh Bagchi and Tom Hacker and others at Sandia's Center for Cyberdefenders suite to discuss improvements to the internship experience."

Sandia Supports Purdue Hiring Event

On September 5-6, 2019, Sandia participated in the Resume Blitz held as part of Purdue's Nuclear Security Enterprise Day event. Sandia invited students to attend booths and panels on the first day, then held interviews on the second day.

Upcoming Events

- Sept. 9-13: Industrial Roundtable Career Fair Recruiting Week at Purdue's Memorial Mall
- Oct. 1: Sandia Day at Purdue
- Oct. 7: National Labs Day at Indiana University–Purdue University Indianapolis

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Sandia-Purdue Visits in June, July, and August

- Alex Roesler, Sandia's senior manager for Pathfinder Technologies, visited Purdue with John Richards from Sandia's A4H MC IA to discuss the effort and strategize on how to respond to a technologically related Air Force Research Laboratory Broad Agency Announcement.
- Yong Chen, director of the Purdue Quantum Center, presented at the Quantum Information Sciences spotlight event in June and later met with Sandia's quantum group in July.
- In June, David Love from Purdue's Electrical and Computer Engineering Department visited the Sandia Radio and Signal Analysis Department.
- In June, Purdue faculty liaison Tim Pourpoint visited Sandia to meet with LDRD principal investigator David Plummer to complete a white paper. Pourpoint also visited Thunder Range and met with Sandians John Zepper from the Science and Technology Advancing Resilience for Contested Space MC IA and Charlie Richardson from the Resilient and Agile Deterrence MC IA.
- Jason Reinhardt from the Sandia System Analysis department met with David Ebert, director of the Center for Education and Research in Information Assurance and Security at Purdue to discuss engagement between the labs and the university.
- In July, Andrew Weiner, Distinguished Professor of Electrical and Computer Engineering at Purdue, visited Sandia to participate in the SIGMA LDRD Grand Challenge External Advisory Board, where he gave a talk on "Photonic Signal Processing: Ultrafast, Broadband, and Quantum." He also discussed the Defense Advanced Research Projects Agency's Atomic-Photonic Integration Trapped Ion Clock using Technology-On-Chip project.

Purdue Announces Leadership Changes

- Rodney Miller, former senior leader executive and chief scientist for Air Force Global Strike Command, Barksdale Air Force Base, was named Purdue's special advisor for national security initiatives.
- Demitri Peroulis was named head of the School of Electrical and Computer Engineering
- Bill Crossley was named head of the School of Aeronautics and Astronautics
- Dongyan Xu was named head of the Department of Computer Science
- Ekard Groll was named head of the School of Mechanical Engineering-
- Theresa Mayer was named Executive Vice President for Research and Partnerships.