www.sandia.gov

ALBUQUERQUE, NM • LIVERMORE, CA
MEDIA RELATIONS DEPARTMENT, MS 1468
ALBUQUERQUE, NEW MEXICO 87185-1468
PHONE: (505) 844-4902

Exceptional service in the national interest

Media Advisory

Dec. 4, 2019

Environmental intelligence to better understand the changing Arctic

Sandia's Arctic research presented at the 2019 American Geophysical Union conference

ALBUQUERQUE, N.M. — As the Arctic ice sheet melts and the permafrost thaws, researchers from Sandia National Laboratories continue to carefully monitor conditions there.

They have been working on the North Slope of Alaska for more than 20 years, managing two facilities as part of the Atmospheric Radiation Measurement program sponsored by the Department of Energy's Office of Science Biological and Environmental Research Program. Researchers collect measurements of atmospheric conditions using drones and unmanned balloons; the data help improve weather forecasts and sharpen climate models to capture the observed changes.

Another focus of Sandia's work in the Arctic aligns with the labs' focus on national security issues. Melting ice sheets in the Arctic reveal new natural gas resources and an unexplored ocean that could be a future military theater. Thawing permafrost crumbles road beds and threatens the physical stability of coastal infrastructure. Basic science to connect the fundamentals of these environmental changes to their social impacts — from refining models of coastal erosion to forecasting conditions on the seafloor — provides environmental intelligence key to Arctic security.

Sandia National Laboratories manages two facilities on the North Slope of Alaska as part of the Atmospheric Radiation Measurement program, a national scientific user facility. (Photo by Fred Helsel)

Finally, Sandia is establishing partnerships to ensure Arctic research continues. Last year, the labs signed cooperative research agreements with University of Alaska campuses in Fairbanks and Anchorage. Sandia researchers are involved with proposing a permanent research center in the High Arctic.

See below for a list of talks and posters presented by some of Sandia's Arctic researchers at the American Geophysical Union annual conference on Monday, Dec. 9.

Presentation	Time	Building	Room	Presenter
Monday December 9, 2019				
A Probabilistic Modeling Framework Utilizing Ocean Drilling Data to Forecast Current and Future Thermodynamic Conditions On and Below the Seafloor				
PP11D-1421	8:00-12:20	Moscone South	Poster Hall	Jennifer Frederick
Development of a Tightly Coupled Multi-Physics Numerical Model for an Event-Based Understanding of Arctic Coastal Erosion				
C12B-04	11:05- 11:20	Moscone West	2006, L2	Diana Bull
Dual-Use and Multiple-Use Applications for Earth Systems Observations on the North Slope of Alaska				
GC13E-1212	13:40-18:00	Moscone South	Poster Hall	Mark Ivey
Strategies to Develop a Year-Round Comprehensive US High Arctic Research Center in Alaska to Serve Broad National Interests				
GC13E-1214	13:40-18:00	Moscone South	Poster Hall	Joe Hardesty
Partnering for a Resilient and Secure Arctic: National Labs and University of Alaska High Arctic Research Center				
GC13E-1215	13:40-18:00	Moscone South	Poster Hall	Lori Parrott
Use of ARM’s Tethered Balloon System to Collect In Situ Atmospheric Measurements				
A13T-2999	13:40-18:00	Moscone South	Poster Hall	Darielle Dexheimer

Sandia National Laboratories is a multimission laboratory 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. Sandia Labs has major research and development responsibilities in nuclear deterrence, global security, defense, energy technologies and economic competitiveness, with main facilities in Albuquerque, New Mexico, and Livermore, California.

Sandia news media contacts: Kristen Meub, klmeub@sandia.gov, 505-239-1671**;** Melissae Fellet, mfellet@sandia.gov, 505-252-3470