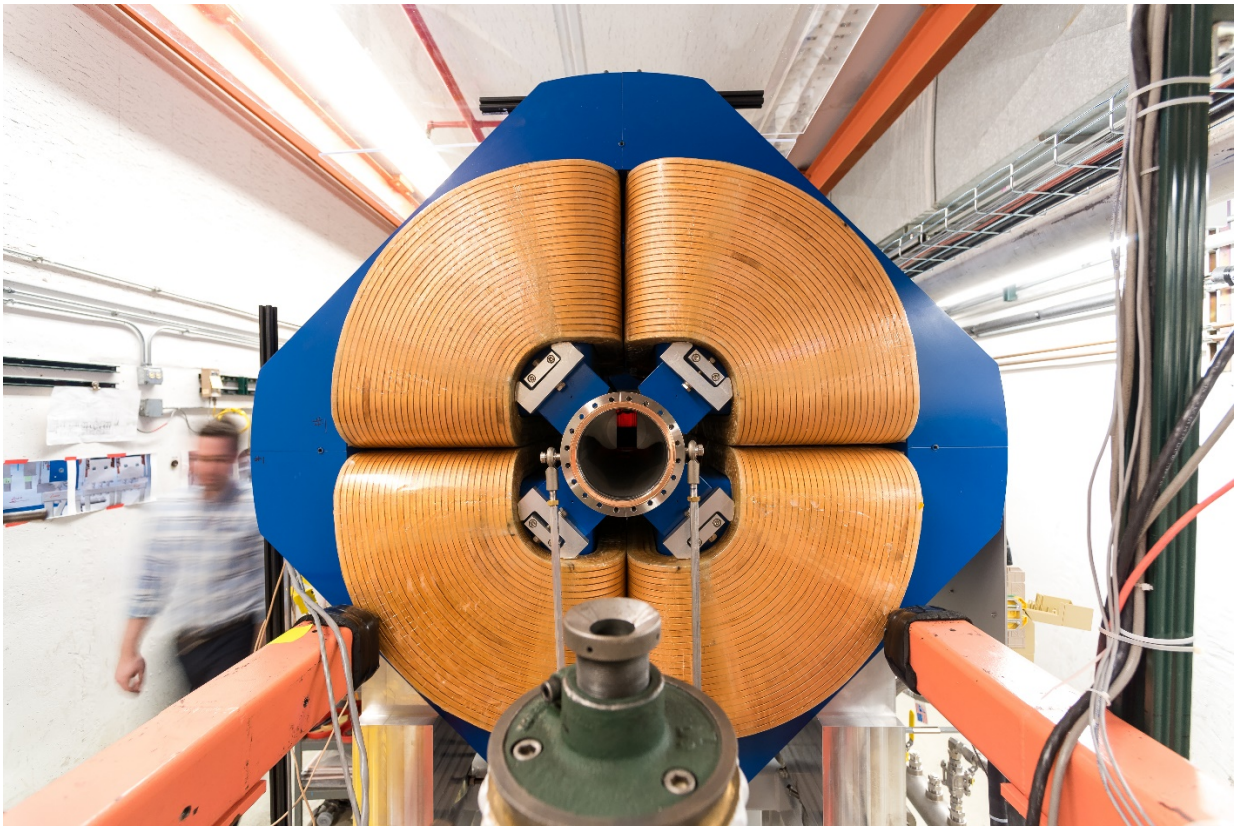
U.S. DEPARTMENT OF ENERGY

Office of Science

COMMUNIQUE

20 April 2020

*Comm*unique provides a biweekly review of recent Office of Science Communications and Public Affairs work, including feature stories, science highlights, social media posts, and more. This is only a sample of our recent work promoting research done at universities, national labs, and user facilities throughout the country. *Please note that some links may expire after time.*



Cosmic Understanding from Miniscule Particles

"It's a unique window into nuclear physics."

The Argonne Tandem Linac Accelerator System (ATLAS) user facility occupies a basement in one of Argonne National Laboratory's many buildings, with particle streams going in and out of funky corners housed by cinder blocks. Navigating the space takes careful attention and a knowing guide. At the end of odd corridors and behind walls that minimize radiation, experiments with lots of detectors of all types pick up particles for the many scientists working in the ATLAS to study.

Click here to read more about how experiments at ATLAS collaborate to find the distinctive signatures of heavy elements.

NEWS CENTER

The Office of Science posted 79 news pieces between 3/30/2020 and 4/19/2020, including 44 university articles and 30 pieces from the labs and user facilities.

Researchers from SLAC National Accelerator Laboratory and the Dark Energy Survey have drawn on observations of galaxies around the Milky Way to reveal a link between dark matter "halos" and galaxy formation. These findings suggest more than 150 additional satellite galaxies around the Milky Way awaiting discovery.

Scientists using the NSLS-II at Brookhaven National Laboratory have demonstrated a new technique for imaging proteins in 3D with nanoscale resolution, opening new doors for studies on health and medicine.

Using novel techniques to study the nature and origin of heavy elements, scientists from Argonne National Laboratory led an experiment at CERN that may provide critical insights into stellar events and the early universe.

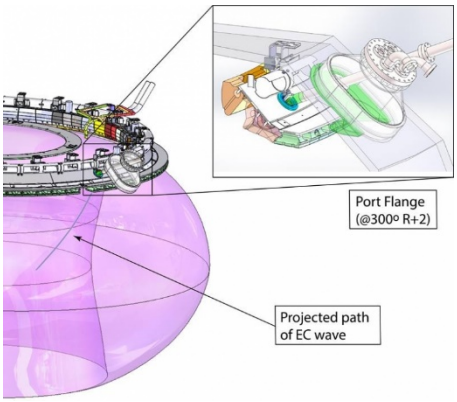
Scientists from UC San Diego and Brookhaven National Laboratory found naturally occurring superconducting materials in meteorites. The presence of superconducting materials could have influenced planet formation and the origin of magnetic fields.

Researchers from the University of Oklahoma's College of Dentistry conducted neutron scattering research at Oak Ridge National Laboratory to create restorative dental biomaterials that are less expensive and last longer than traditional materials.

A new satellite-driven model, created by researchers at the Center for Advanced Bioenergy and Bioproducts Innovation, provides accurate, high-resolution data to forecast crop water use and can be updated on a daily basis to keep forecasts timely.

SCIENCE HIGHLIGHTS

The Office of Science posted new highlights spotlighting FES between 3/30/2020 and 4/19/2020.



Researchers from the DIII-D National Fusion Facility have demonstrated a new approach for injecting microwaves into a tokamak fusion device. This new method, which is twice as efficient as existing techniques, brings practical fusion energy one step closer.

IN THE NEWS

New York Times: Why the Big Bang Produced Something Rather Than Nothing

Researchers from Fermi National Accelerator Laboratory are highlighted in this article about recent results from the TK2 Collaboration's neutrino experiment.

Forbes: The Scientists Taking Atomic-Level Pictures Of The Coronavirus

A Pacific Northwest National Laboratory researcher is part of a group collaborating with scientists at the Seattle Structural Genomics Center for Infectious Disease to look for weaknesses in COVID-19.

Wall Street Journal: Next-Gen Supercomputers Are Fast-Tracking Treatments For The Coronavirus In A Race Against Time

Researchers are using supercomupters, including those at Oak Ridge National Laboratory and Argonne National Laboratory, in the fight against COVID-19.

TOP TWEETS

The Office of Science sent out 108 tweets between 3/30/2020 and 4/19/2020. Here are our two most popular from the past month:

BY THE NUMBERS

The Department of Energy's Office of Scientific and Technical Information (OSTI) collects, preserves, and disseminates information from DOE-funded research and development activities at the national labs, universities, user facilities, and other institutions. This library includes 1.6 million journal articles, 3,735 video and audio clips, and 136,778 patents. To date, OSTI is home to more than 3 million records on everything from artificial intelligence to zygotes and everything in between.

END NOTES

Podcast: The Future of Water and Wildfire

Water is one of the Earth's most precious resources, yet even small environmental changes can have massive consequences. This episode of the Department of Energy's Direct Current podcast explains how the national labs are using their resources—from supercomputers to sifting through the ashes of wildfires—to stay ahead of the shifting water cycle and to help us bounce back from natural disasters.

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