



CommUnique: News from the Office of Science

US Department of Energy Office of Science sent this bulletin at 05/17/2021 04:09 PM EDT



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17 May 2021

Communique 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.*



Wonder Fungi

Michelle O'Malley has long been inspired by gut microbes. Since she began studying the herbivore digestive tract, the UC Santa Barbara chemical engineering professor has guided several students to their doctoral degrees, won early and mid-career awards (including a recognition from President Obama), attained tenure and advanced to the position of full professor. A constant through it all: goat poop.

[Read more about O'Malley's career and how goats are helping us understand how large herbivores unlock energy from plant material.](#)

NEWS CENTER

The Office of Science posted 68 news pieces between 5/3/2021 and 5/17/2021.

Earth's early atmosphere was once very similar to the atmosphere found on Venus and Mars today. Researchers used the Advanced Photon Source, a DOE user facility at Argonne National Laboratory, to [examine a simulation of the Earth's early mantle](#) in gases representing the early atmosphere. They then compared results to the Earth's real mantle.

A [web-based version of a climate modeling tool](#) developed at DOE's Pacific Northwest National Laboratory is now available. It allows non-experts to explore climate models, researchers to easily generate and incorporate new data into their own work, and students to use climate models for research.

The upcoming Beam Dump eXperiment (BDX) at DOE's Thomas Jefferson National Accelerator Facility will work to produce "light" dark matter in the lab. It could surpass the discovery potential of other dark matter experiments. To demonstrate the feasibility of BDX, BDX-MINI – a smaller version of the concept – [just finished collecting data](#).

Researchers at Mississippi State University, DOE's Argonne National Laboratory, and many other collaborators, recently found that [protons have "broken symmetry."](#) This phrase describes an object that seems like it has symmetry but doesn't. This result opposes experimental results obtained in the 1990s.

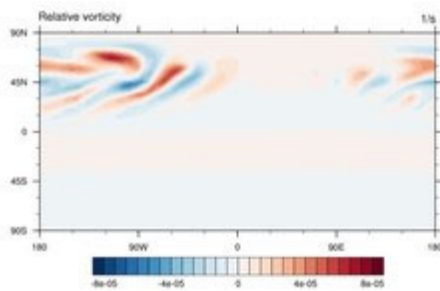
A new finding by Purdue University engineers helps lay the [groundwork for a quantum internet](#). They demonstrated a programmable switch that adjusts how much data goes to each user, making it possible to increase the number of users as the network gets bigger without adding to quantum information loss.

Scientists at the University of Chicago and DOE's Argonne National Laboratory made a major step towards [developing an anti-viral](#) for the virus that causes COVID-19. They found two molecules that slowed how quickly viral cells replicated in the lab. This work is particularly important as more mutations emerge.

SCIENCE HIGHLIGHTS

The Office of Science posted four new highlights between 5/3/2021 and 5/17/2021.

To better understand the impact of expanding biofuel production, scientists must represent biofuel crops in Earth systems models. Researchers at DOE's Pacific Northwest National Laboratory [simulated perennial bioenergy crops in the Community Terrestrial System Model](#) for the first time. The model incorporates energy, water, land, and climate dynamics at local, regional, and global scales.



To make equations that computers can analyze, scientists need to change continuous models and variables into distinct, discrete ones. Scientists at Sandia National Laboratories did this process for equations used by models of Earth's atmosphere. Researchers are now using the new software component that solves these equations in the Energy Exascale Earth System Model. This change should help this model [provide even better forecasts of the Earth's future climate](#).

IN THE NEWS

Popular Science: [Ultra-powerful X-rays are helping physicists understand Chernobyl](#)

This feature examines how scientists are working to understand the highly radioactive hardened sludge left after the Chernobyl disaster. It describes how researchers used the X-ray light source at DOE's Brookhaven National Laboratory and quotes Reid Peterson from DOE's Pacific Northwest National Laboratory.

New Scientist: [Physicists have measured an atom's 'neutron skin' for the first time](#)

This article reports the results of the PREX collaboration at DOE's Thomas Jefferson National Accelerator Facility, which measured the neutrons making up a layer around the edge of the nucleus.

Tech Crunch: [When the Earth is gone, at least the internet will still be working](#)

This piece on how telecommunications companies are creating resilience in their networks mentions how DOE's Argonne National Laboratory partnered with AT&T to create a climate change analysis tool.

TOP TWEETS

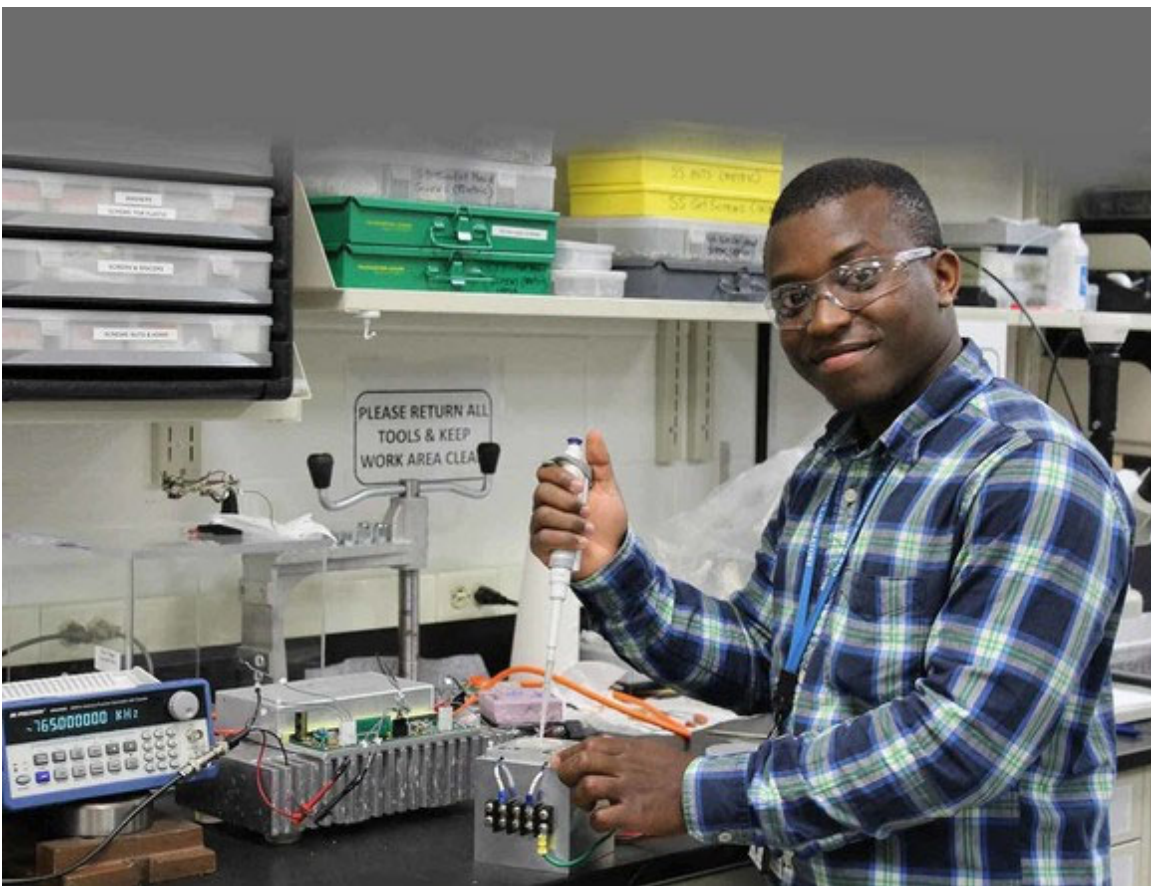
The Office of Science sent out 128 tweets between 5/3/2021 and 5/17/2021.

Here are the two most popular:



BY THE NUMBERS

Office of Science Announces Nearly 1,000 New Student Interns



DOE's Office of Science has selected 804 undergraduate students and 90 community college students to work at national laboratories this summer through our Student Undergraduate Laboratory Internships and Community College Internship programs. Twenty percent of the chosen students are from Minority-Serving Institutions. The students will be working with scientists and engineers on research and technology projects that support DOE's mission. SC also selected 66 college and university faculty members and 30 accompanying students to collaborate with national laboratory research staff through our Visiting Faculty Program. Read more and check out the lists of recipients in the [DOE press release](#).

END NOTES

Communicating the Future Conference Now Open for Registration



Registration is now open for the [Communicating the Future: Engaging the Public in Basic Science conference](#) on July 27-28! The heart of the conference will be a series of discussions based on curated examples of scholarship, training, and practice of public engagement. Organized by the Science Public Engagement Partnership between DOE's Office of Science and The Kavli Foundation, the virtual conference is free for attendees. We hope to see you there!

Please see the [Communique archive](#) on Energy.gov for past issues.

No. 57: 17 May 2021

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