



Lab news: a good start to the new year

Nigel S. Lockyer

Fermilab Community Advisory Board

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Breaking news: we tested our herd...



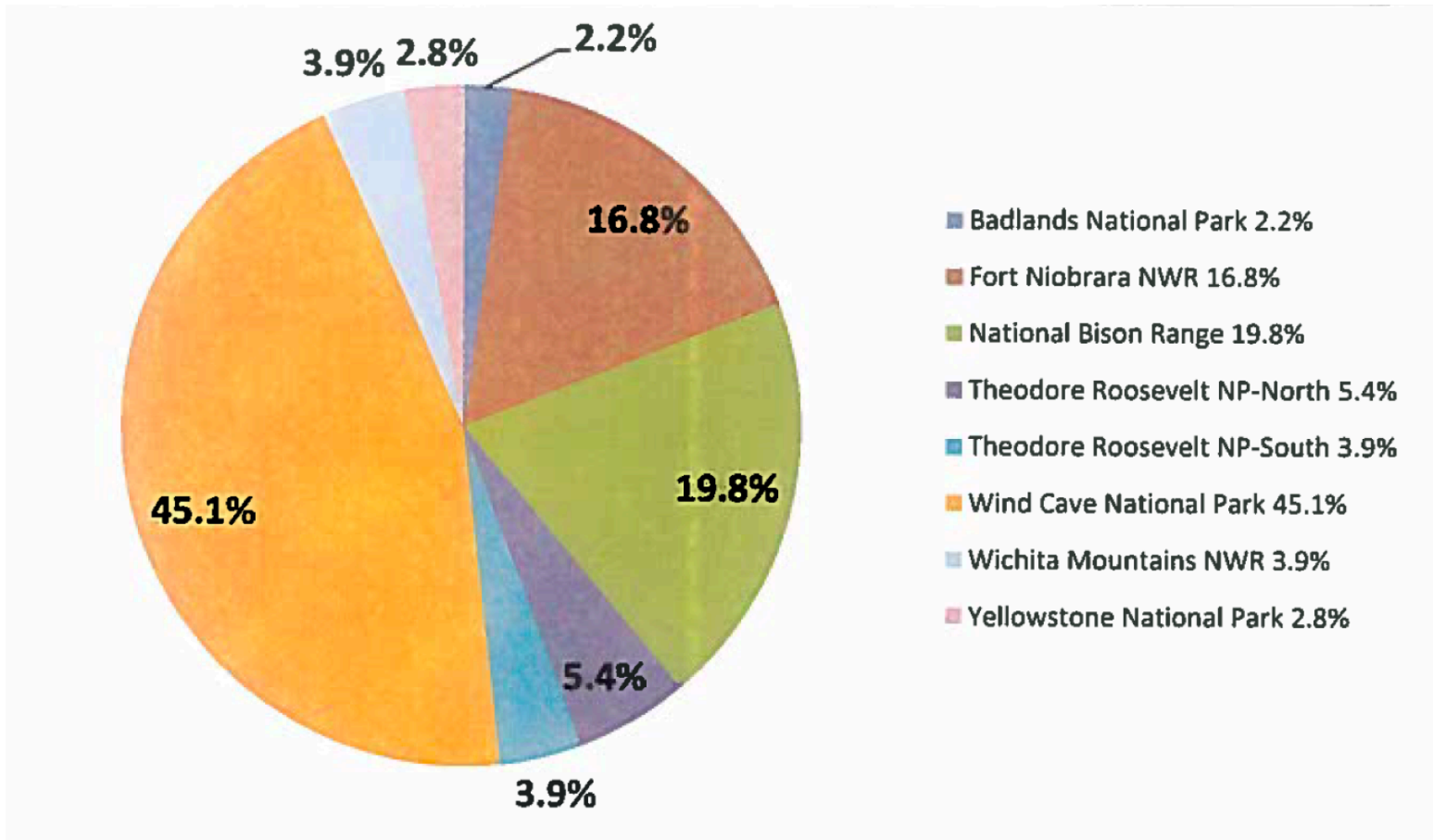
or



?

Result: 100% bison

- DNA can be traced back to eight 100% pure bison herds
- No cattle DNA present!



Breaking news: we checked our scientists too...



Result: From 450 institutions in 44 countries

- - More than 3,500 scientists use our facilities.
- - They are from more institutions and more countries than ever before; and we want to grow even more.



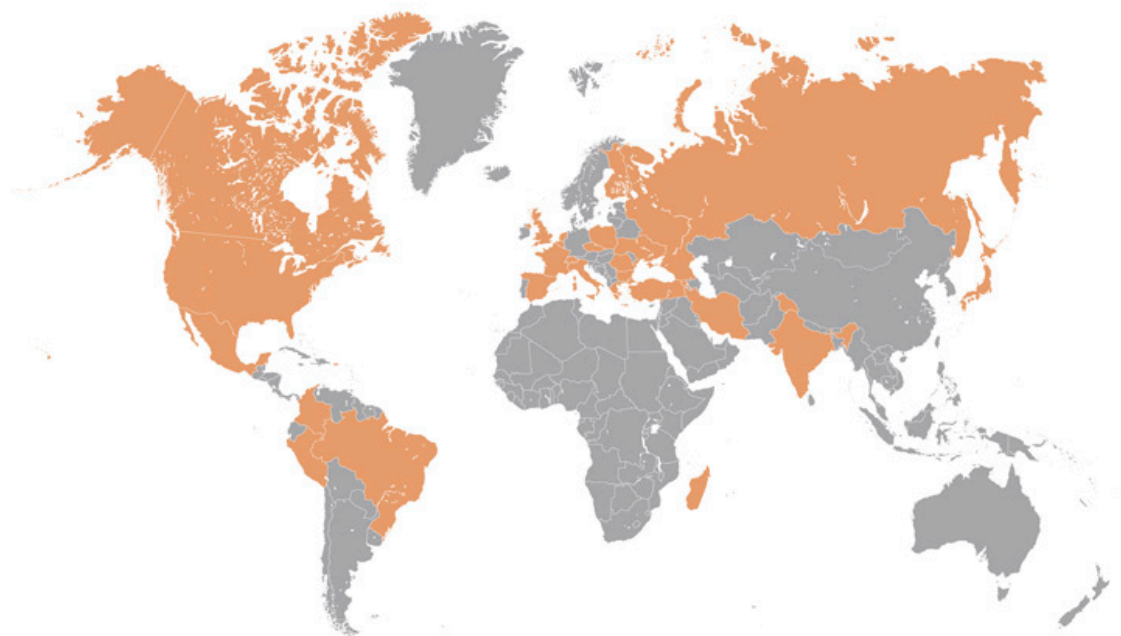
Huge part: The 800+ people working on DUNE

DUNE = Deep Underground Neutrino Experiment



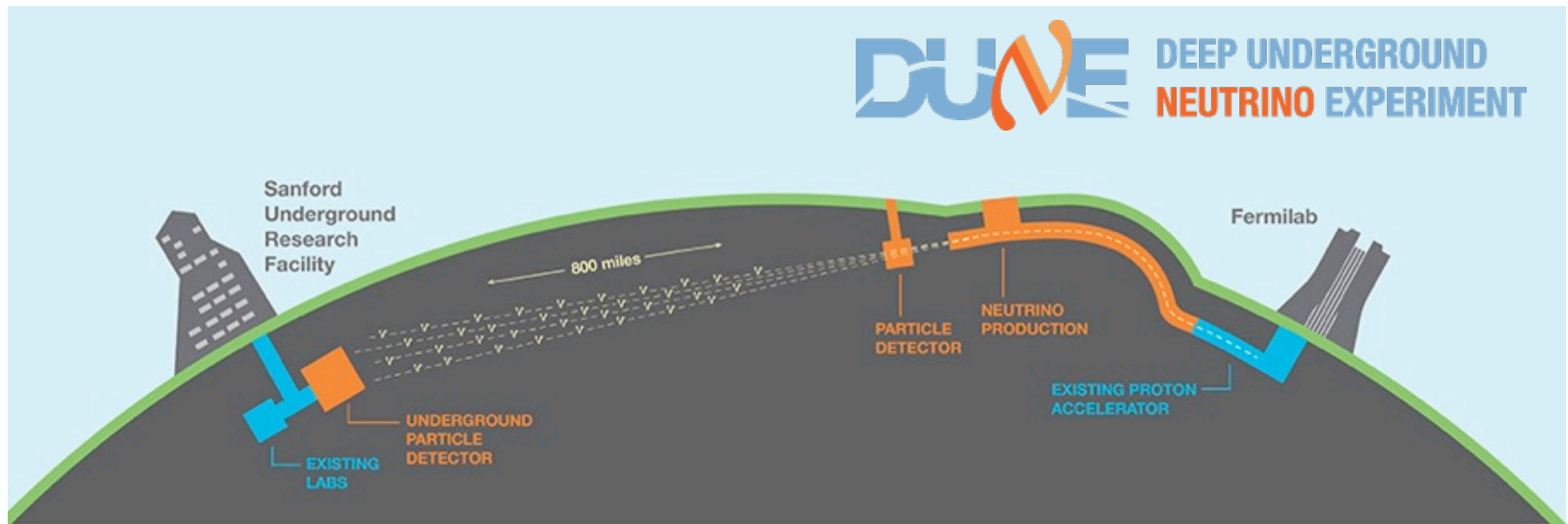
Collaborating Institutions

January 2016



The DUNE collaboration comprises more than 800 scientists from 150 laboratories and universities in 27 countries.

What is DUNE?



Fermilab's proposed flagship experiment will be the "first international mega-science project on U.S. soil," according to Pat Dehmer, deputy director of the DOE Office of Science. It will be the game-changing experiment for neutrino research.

Sneak preview: LBNF / DUNE animation



Goal: Become the neutrino capital of the world



DUNE is the natural culmination of our efforts to build a flagship neutrino research program. The experiment is scheduled to begin operation in 2025. When it does, it will cement Fermilab's place as the premier neutrino research laboratory in the world.

Major news: Signing of US-CERN agreement



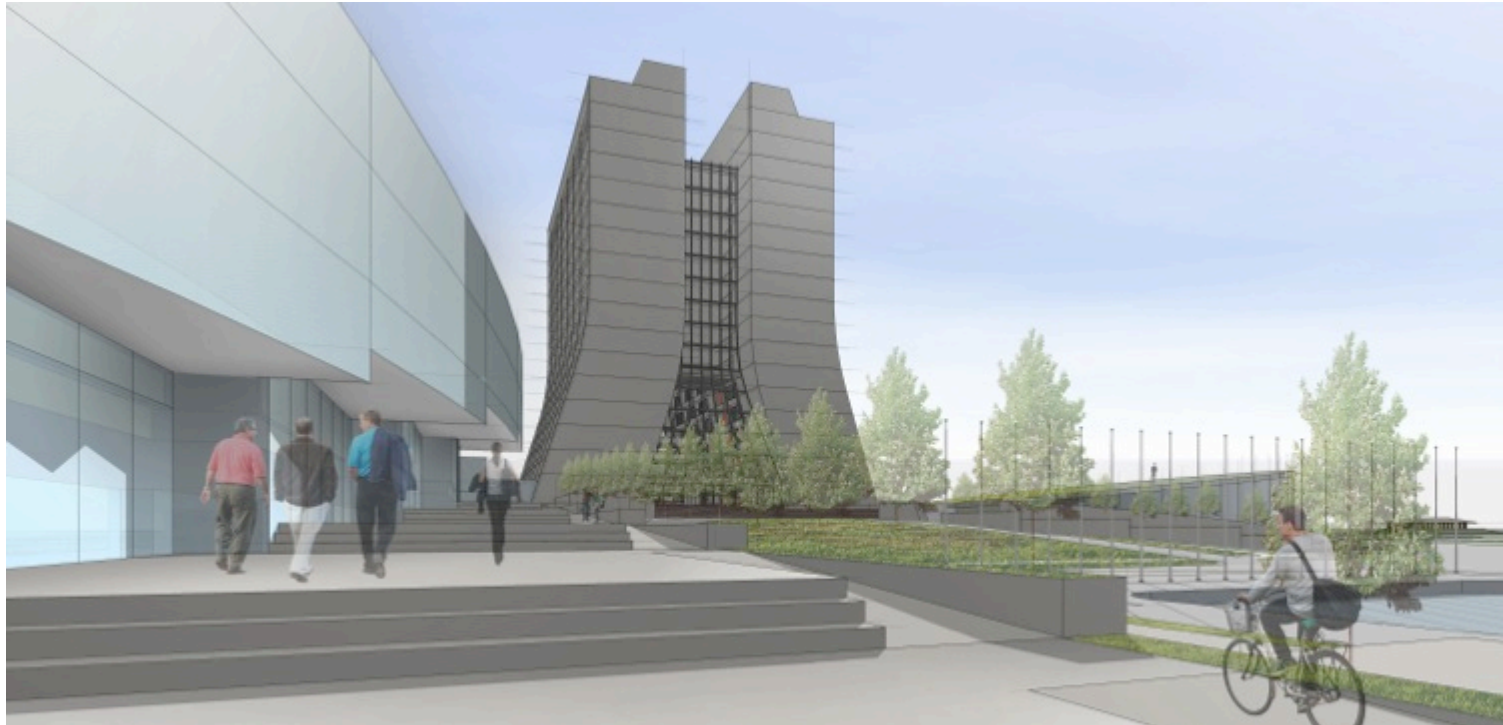
In December, the United States and the European physics laboratory CERN signed an agreement to partner on continued research at the Large Hadron Collider, upcoming neutrino research and a future particle collider.

The path to DUNE... across the ocean and back

CERN is building a huge test facility and prototype detectors for DUNE. At the same time, the world's largest liquid-argon neutrino detector, ICARUS, will come from CERN to Fermilab in 2017. It will become part of our short-baseline neutrino program to study neutrinos here on the Fermilab campus.

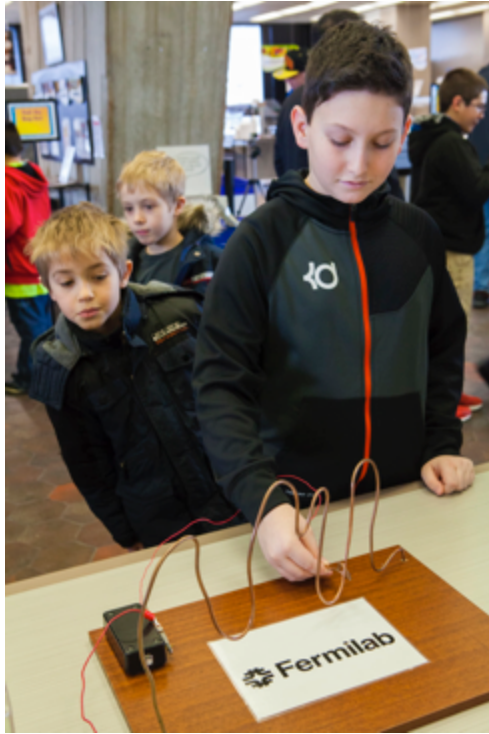


Preparing for DUNE: A new building for a new era



We need robust infrastructure to support our future flagship program. Modernization of utilities is underway, and we have received first-stage approval for the new **Integrated Engineering Research Center**. It will serve as an international campus for scientists from around the world.

Training future DUNE scientists



Fermilab partners with educators and parents to introduce youth to the world of science. Last year 17,000 students came to Fermilab, and we reached 26,000 more in their classrooms. We train 1,000 high school, college and university students every year in high-tech R&D and scientific research.

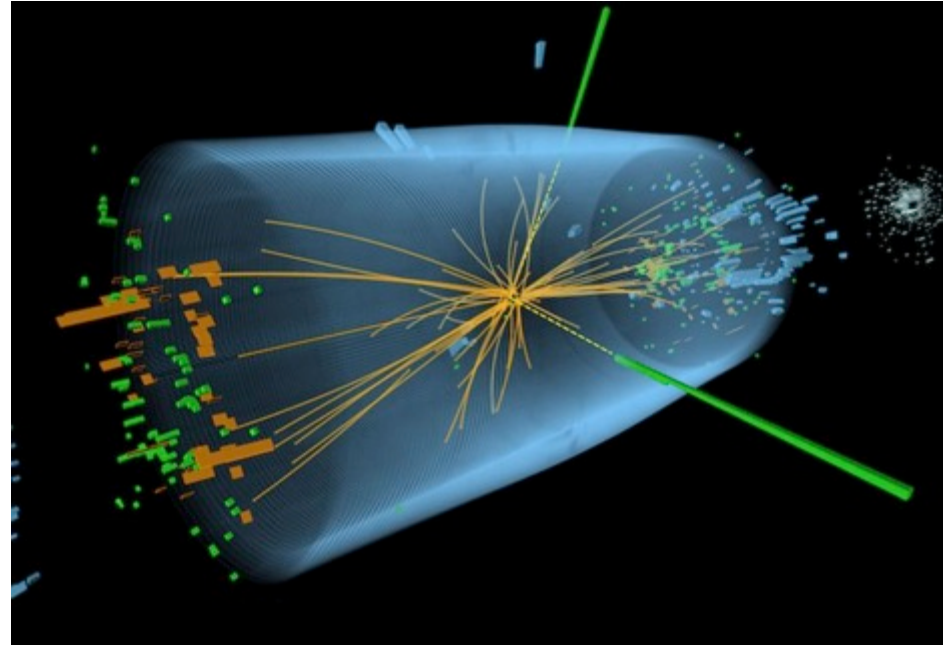
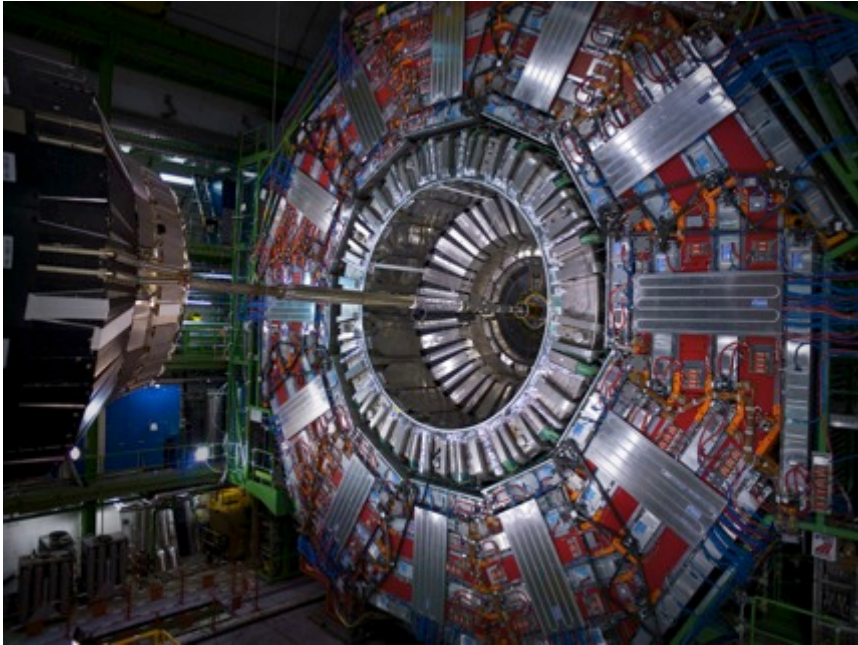
Quote from South Dakota Senator Mike Rounds

From an interview with Senator Rounds in the Black Hills Pioneer, Jan. 12, 2016:

...This [LBNF/DUNE] is a long term project. Here's the neat part. They need lots of kids involved with this stuff. You're going to have kids that are going to learn about neutrinos ... they're going to learn about things like dark matter. They're going to learn what neutrinos are and what the different flavors are, why it's important and what it is about neutrinos that might play a part in discovering what 75 to 80 percent of what the entire universe is made of. This is basic stuff, but included in it is some really important stuff about different forms of energy. This is the place in the United States that they're going to be doing those things. So it's a direct line in to our kids actually competing with and being part of helping some of the greatest minds not just from American universities, but from universities throughout the world. This is our connection with Geneva. This is where the big super-collider's at. They're doing some stuff right now, but we're doing the same stuff over here. We're competing with them. I think we've got 400 people up there working full-time right now. It's good stuff. Kids, would they ever know to anyone in the world if they didn't have that chance? Our kids are sharp, but they have to have an opportunity. This is that gateway in. So, am I high on it? Yeah. We made bipartisan, multistate connections that they go past the party lines to fund it."



We will continue research at the LHC



Fermilab will continue to be one of the main contributors to the CMS experiment on the Large Hadron Collider, one of the two experiments that discovered the Higgs boson in 2012. In 2015, the LHC started its second run, at the highest energies ever harnessed for a scientific experiment.

Fermilab turns 50: A half-century of discovery



Fermilab turns 50 in 2017. We want to celebrate with you and the local community. We are planning a big open house for 2017, and we are looking for your input on how to strengthen old and create new connections.

Any questions?

