As one of 17 Department of Energy national labs, SLAC pushes the frontiers of human knowledge and drives discoveries that benefit humankind. We invent the tools that make those discoveries possible and share them with researchers all over the world.

What is SLAC National Accelerator Laboratory?
The numbers tell the tale.

Founded in 1962 with 200 employees.
Today we have more than 1,800 employees plus over 300 postdocs and grad students.

Thousands of researchers from around the world use our cutting-edge facilities.

4 Nobel prizes awarded to 6 laureates for research at SLAC that discovered 2 fundamental particles, proved protons are made of quarks and showed how DNA directs protein manufacturing in cells.

426-acre site near the main Stanford University campus.

Our linear accelerator structure is 3,073.72 meters (1.9 miles) long – one of the longest modern buildings on Earth.

Electrons zip down the accelerator at 669,600,000 mph – 99.99999999% of the speed of light.

The energy each electron gains is equivalent to 33 billion AA batteries.

Technology we’re developing could make future accelerators up to 1,000 times shorter.

180 universities and research institutes make use of our resources.

20 companies use our X-ray facilities for research aimed at developing medicines and other products.
SLAC works with Stanford in 6 joint research centers and facilities that focus on cosmology and astrophysics, materials and energy science, batteries, cryogenic electron microscopy, catalysis and ultrafast science. Our X-ray laser zaps samples with pulses that are millionths of a second long.

The 3,200-megapixel LSST Camera we designed and built for the world's deepest sky survey will shoot the equivalent of 800,000 8-megapixel digital camera images per night. Over a span of 10 years it will take pictures of more galaxies than there are people on Earth.

Our labs create 36-million-degree-F matter that mimics extreme conditions in the hearts of stars and planets, and pressures equivalent to 5,200 large African elephants stacked on 1 square inch of ground.

SLAC’s highest experiment orbits 300+ miles overhead at 17,400 mph and has discovered 200+ pulsars.

SLAC’s deepest experiment will hunt for dark matter in a Canadian nickel mine 6,800 feet below ground.

Our telescope near the South Pole looks for patterns left by cosmic inflation in the first trillionth of a trillionth of a trillionth of a second after the Big Bang.

Our upgraded LCLS X-ray laser beam will be 10,000x brighter and fire 8,000x faster, up to 1 million pulses per second.

The new beam will operate at 2 degrees Kelvin – colder than outer space.

We hauled 699 tons of equipment out of the SLAC linac to make room for it.

In 1975 the Homebrew Computer Club began meeting in the SLAC auditorium and helped spark the personal computing revolution.

In 1991 we opened the 1st website in North America. It helped physicists share their research results.

SLAC’s 1st scientific discovery was a fossil: Neoparadoxia repenningi, found in 1964 during excavation for the linac. It lived 14 million years ago and resembled a hippo.