Argonne NATIONAL LABORATORY

WHAT IS A **SUPERCOMPUTER?**

A complicated machine helping scientists make huge discoveries.

Imagine one million laptops calculating together in perfect harmony and you're getting close to the power of a supercomputer.

Researchers need all that computing muscle to answer some of the world's biggest questions in human health, climate change, energy and even the origins of the universe!

When you want to study something that's impossible to explore in a lab—like an exploding star or a fast-forming hurricane—your computer has to be super.

Argonne's most super supercomputer is Aurora, a computer that will be able to perform over two billion billion calculations per second. If the entire population of Earth performed one calculation by hand every ten seconds, it would take humans 8 years to solve a problem that Aurora could solve in one second.

HOW & WHY?

Used to enable discoveries across all fields of science, from the nanoscale to the cosmic scale.

Aurora weighs 600 tons. That's about equal to 50 school buses!

REAL-WORLD IMPACT

Solve big problems, like modeling the climate and discovering new drugs to treat serious illnesses.

Aurora is as large as two NBA Basketball Courts.

Aurora is liquid-cooled by 44,000 gallons of water. That's almost an 18' x 40' x 8' deep in-ground swimming pool.

SPECIALISTS

Hundreds of people do everything from designing and building these machines, to writing programming code, to making sure the system stays cool while it's calculating.

RESEARCHERS

Researchers from all around the world use Argonne's supercomputers to solve complex problems.

U.S. DEPARTMENT OF ENERGY Argonne National Laboratory is a U.S. Department of Energy laboratory managed by UChicago Argonne, LLC.

Learn more at **www.anl.gov**.