



# NSF MAJOR RESEARCH INFRASTRUCTURE SPANS THE GLOBE



## NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

The NCAR Mauna Loa Solar Observatory

NCAR Marshall Field Site

NCAR-Wyoming Supercomputing Center

## NCAR RESEARCH AVIATION FACILITY

NSF/NCAR G-V NSF/NCAR C-130



## POLAR PROGRAMS - ARCTIC

Toolik Field Station, Alaska Summit Station, Greenland



## GEODETTIC FACILITY FOR THE ADVANCEMENT OF GEOSCIENCES



## U.S. ACADEMIC RESEARCH FLEET: NSF-OWNED RESEARCH VESSELS

R/V Sikuliaq

R/V Endeavor

Under Construction - RCRV Gilbert R Mason

Under Construction - RCRV Taani

Under Construction - RCRV Narragansett Dawn



## NATIONAL ECOLOGICAL OBSERVATORY NETWORK

## GROUND-BASED ASTRONOMY AND ASTROPHYSICS

## NATIONAL SOLAR OBSERVATORY

Daniel K. Inouye Solar Telescope



## NATIONAL RADIO ASTRONOMY OBSERVATORY

Central Development Laboratory

Atacama Large Millimeter/submillimeter Array

Very Long Baseline Array, Very Large Array

## NSF'S NATIONAL OPTICAL-INFRARED ASTRONOMY RESEARCH LABORATORY

Kitt Peak National Observatory

Gemini North and South Telescopes

Cerro Tololo Inter-American Observatory

Vera C. Rubin Observatory

Community Science and Data Center

Laser Interferometer Gravitational-Wave Observatory

Green Bank Observatory

Arecibo Observatory

IceCube Neutrino Observatory



## POLAR PROGRAMS - ANTARCTIC

RV Nathaniel B. Palmer (icebreaker)

RV Laurence M. Gould (ice-strengthened vessel)

Palmer Station

Amundsen-Scott South Pole Station

McMurdo Station

## INTERNATIONAL OCEAN DISCOVERY PROGRAM

JOIDES Resolution (oceanwide deep sea drilling ship)



## NATIONAL HIGH MAGNETIC FIELD LABORATORY



## LARGE HADRON COLLIDER

A Toroidal LHC Apparatus

Compact Muon Solenoid



## NATIONAL DEEP SUBMERGENCE FACILITY



## OCEAN OBSERVATORIES INITIATIVE

Irminger Sea Array

Station PAPA Array

Pioneer Array

Regional Cabled Array

Endurance Array



## SEISMOLOGICAL FACILITY FOR THE ADVANCEMENT OF GEOSCIENCES



## LEADERSHIP CLASS COMPUTER FACILITY PHASE 1 - FRONTERA





# NSF MAJOR RESEARCH INFRASTRUCTURE SPANS THE GLOBE



## GEODETIC FACILITY FOR THE ADVANCEMENT OF GEOSCIENCES

GAGE is a distributed, multiuser, national facility for the development, deployment and operational support of modern geodetic instrumentation that serve national goals in basic research and education in the Earth sciences.



## GROUND-BASED ASTRONOMY AND ASTROPHYSICS

NSF funds a suite of ground-based telescopes and observatories that use cutting-edge technology to explore the universe and advance astronomical research. This includes many of the world's most renowned observatories – ALMA, Arecibo, DKIST, Gemini, IceCube, LIGO, Rubin, VLA.



## INTERNATIONAL OCEAN DISCOVERY PROGRAM

The JOIDES Resolution, an ocean-drilling research vessel that is part of the IODP, conducts sea-floor drilling to study Earth's oceans and paleoclimate and maintains several ocean drill sites around the world.



## LARGE HADRON COLLIDER

NSF supports two particle physics detectors—ATLAS and CMS—at the LHC in Switzerland, the world's largest, most powerful particle accelerator.



## LEADERSHIP CLASS COMPUTER FACILITY PHASE 1 – FRONTERA

NSF has begun the planning process for a Leadership-Class Computing Facility (LCCF). LCCF will be a distributed computational facility that will provision world-class computational and data analytics capabilities, as well as critical software and services to support all Science & Engineering research in the nation.



## NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

NCAR is a research and development center devoted to understanding and transferring knowledge about the behavior of the atmosphere and related Earth and geospace systems.



## NATIONAL DEEP SUBMERGENCE FACILITY

NSF funds the operation by the Woods Hole Oceanographic Institution of three deep-sea exploration vehicles: Alvin, a human-occupied vehicle; JASON, a remotely-operated vehicle; and SENTRY, an autonomous underwater vehicle.



## NATIONAL ECOLOGICAL OBSERVATORY NETWORK

NEON is a continental-scale ecological observatory that enables fundamental research on biological responses to shifting environmental conditions, land-use changes and invasive species.



## NATIONAL HIGH MAGNETIC FIELD LABORATORY

NSF supports the operation of the National High Magnetic Field Laboratory (NHMFL), the largest and highest-powered magnet laboratory in the world, used by thousands of scientists every year who are probing fundamental questions about materials, energy, environment and life.



## OCEAN OBSERVATORIES INITIATIVE

NSF installed a network of instruments, undersea cables and moorings to span the Western Hemisphere that measures physical, chemical, geological and biological phenomena in key coastal, regional and global areas.



## POLAR PROGRAMS: ANTARCTIC AND ARCTIC

NSF's Office of Polar Programs supports world-class Arctic and Antarctic science through grants to researchers across the U.S. and by providing polar facilities and operational support.



## SEISMOLOGICAL FACILITY FOR THE ADVANCEMENT OF GEOSCIENCES

SAGE is a distributed, multiuser, national facility for the development, deployment and operational support of modern digital seismic and related geophysical instrumentation that serve national goals in basic research and education in the Earth sciences.



## U.S. ACADEMIC RESEARCH FLEET: NSF-OWNED RESEARCH VESSELS

NSF, in partnership with other federal agencies, supports the U.S. Academic Research Fleet, including the NSF-owned vessels.