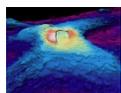


Images Information and Credits

These images are drawn from the NSF highlights reviewed by the Advisory Committee for GPRA Performance Assessment (AC/GPA) during their evaluation of FY 2009 accomplishments.

Cover Images



Axial Volcano, one of the most active volcanoes on the Juan de Fuca Ridge, not far off the coast of the northwestern United States in the Pacific Ocean, which last erupted in 1998. Researchers from Oregon State University and the Lamont Doherty Earth Observatory of Columbia University have been measuring its inflation and deflation through periodic underwater surveys. They have found a steady swelling of about five inches per year and are predicting that the volcano will erupt again by 2020.

Credit: William Chadwick, Oregon State University



Researchers at Michigan State University's Kellogg Biological Station (KBS), which is one of NSF's 26 Long-Term Ecological Research (LTER) Network sites, are at the forefront of studying the benefits people received from ecosystems and how ecosystems can be integrated into agricultural landscapes. Demand for ethanol from corn has caused a decrease in the diversity of agricultural lands as a greater area is devoted to this crop.

Credit: KBS LTER



Danielle Miranda (pictured) has interned at the Fred Hutchinson Cancer Research Center with leading researcher for the Gardisal vaccine, Dr. Denise Galloway. The Gardisal vaccine is used in cervical cancer prevention. Ms. Miranda is pursuing post-baccalaureate research opportunities at NIH.

Credit: New Mexico Louis Stokes Alliance for Minority Participation, New Mexico State University



Scientists at the National Center for Atmospheric Research (NCAR) set up specialized instruments in a walnut grove near Davis, California to monitor plant emissions of certain volatile organic compounds (VOCs), which are important sources of pollution and can affect climate.

Credit: Photo by Carlye Calvin, @UCAR



Ice flows in the Arctic Ocean. A team of U.S. and U.K. researchers believe that ice-sheet formation in the Northern Hemisphere could have occurred 20 million years earlier than currently documented, and could explain a lot of mysterious sea-level variability over the last 25 million years that is difficult to explain with Antarctic ice alone.

Credit: Sue-Ann Watson



Crystal structure of the iron-concentrating protein ferritin. Researchers at the University of Washington have studied the ability of some diatom species to form large blooms in iron-poor regions by using this protein to store iron. This research is focused on diatom species along the coast that are harmful to humans, marine mammals and birds, and other marine life.



Credit: Michaela Parker, Virginia Armbrust, et al., University of Washington

A Tibetan healer with a patient. Researchers at the University of California-San Francisco are exploring the complex ways that scientific biomedical research is being translated in modernizing Tibetan medicine.

Credit: Vincanne Adams, University of California – San Francisco



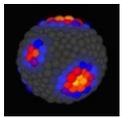
The drilling vessel JOIDES Resolution has been completely refurbished to modernize and vastly improve its capabilities to explore and monitor the sub-seafloor. The ship operates as part of the NSF-funded International Integrated Ocean Drilling Program (IODP).

Credit: Consortium for Ocean Leadership



The self-cleaning property due to nanostructures on the surface of lotus leaves engages young visitors at a NanoDays event at the University of Wisconsin-Madison. NanoDays brings researchers, graduate students, and informal science educators together to raise public awareness, understanding, and engagement with nanoscale science and engineering.

Credit: University of Wisconsin-Madison



In the NSF-funded Computable Plant project, essential mechanisms of computing, microscopy, and molecular biology are combining to provide new insight into fundamental plant biology and could ultimately impact biotechnology and engineering. This is a top view of a computer simulation of pattern formation of floral buds in plant shoot growth. Future buds are indicated by the emergence of regions of high auxin (red and yellow). Cell growth and division displace older auxin peaks outwards, making room for new ones.

Credit: Eric Mjolsness, University of California - Irvine