



March 29, 2018

## 01

### Life savers: Resilient designs to weather hazards

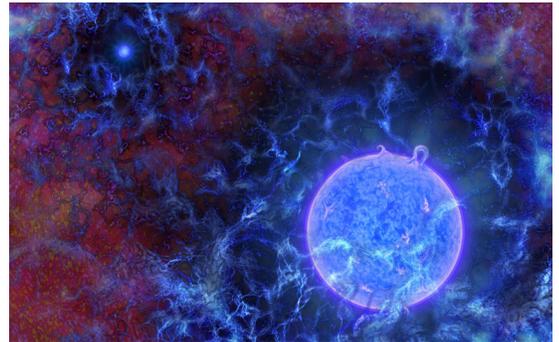
Disasters don't have to be disastrous. Engineering advances enable buildings and infrastructure to better withstand natural, technological and malicious hazards. With resilient new designs, infrastructure can bounce back faster with minimal loss. Achieving resilience is difficult as the country's aging infrastructure grows more interdependent and complex, but new ways of thinking about infrastructure are leading to a more stable, safer future. Find out more in this [Special Report](#).



## 02

### The birth of the first stars

NSF's Peter Kurczynski explains how a tiny, refrigerator-sized antenna was able to make the first detection of the universe's original stars. Find out more in this NSF [video](#).



## 03

### On World Water Day, scientists study spawning salmon through a riverbed lens

Each year on the United Nations-designated World Water Day, people around the world consider the importance of fresh water to ecosystems and to us. On this year's World Water Day, March 22, 2018, NSF looked at Earth's critical zone -- the realm on the planet's surface between the forest canopy and bedrock -- and the role North America's West Coast rivers play in sustaining spawning salmon. Learn more in this NSF [Discovery](#) story.



# 04

## Tapping communities for water research

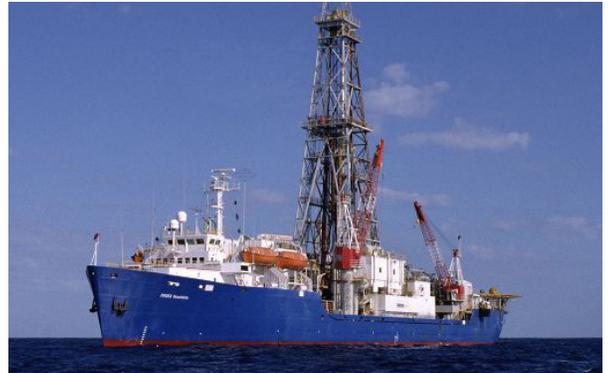
Access to safe drinking water is one of the greatest achievements in human history, largely thanks to science and engineering research. Yet the safety of the United States' drinking water system faces increasing risks from contaminants, drought and other issues, threatening vulnerable populations such as children and the elderly. For the last two years, NSF has provided funding to enable communities across the country to take a closer look at the quality of their own water systems, from Des Moines, Iowa, to Flint, Michigan, and from the Mississippi Water Basin to Maine's estuaries. For World Water Day, NSF asked citizen scientists and engineers to explain what excites them about their projects, what they learned, and in what directions they see solutions to water flowing. Find out their responses in this NSF [Discovery](#) story.



# 05

## Deep-sea observatories to offer new view of seabed earthquakes

A mission to study New Zealand's largest fault by lowering two sub-seafloor observatories into the Hikurangi subduction zone began in early March. The Hikurangi subduction zone, off the east coast of the North Island, is part of the Pacific Ring of Fire, where the Pacific tectonic plate dives beneath the Australian plate. Scientists believe the Hikurangi subduction zone is capable of generating earthquakes greater than magnitude 8. Subduction zone earthquakes can produce major tsunamis because there are large and rapid displacements of the seafloor during these quakes. A major aim of the voyage is installing two borehole observatories into pre-drilled holes 500 meters (1,641 feet) below the seafloor. This will be the first time such observatories have been installed in New Zealand waters. They will bring new monitoring capabilities to New Zealand, which may help pave the way for offshore instrumentation needed for earthquake and tsunami early warning systems. Read more about this NSF-funded research in this NSF [news release](#).



# 06

## 'Understanding Our Ocean Connections': NSF symposium highlights links among people and marine ecosystems

On April 19, scientists from NSF's Long-Term Ecological Research (LTER) Network will take part in the symposium "Understanding Our Ocean Connections." The symposium will take place at NSF's headquarters. The researchers will present findings on the connections among humans and ocean ecosystems such as coral reefs, kelp forests, mangrove forests, salt marshes, sea ice and the continental shelf. Scientists will also discuss how tiny plankton sustain fisheries; whether salt marsh sustainability is a realistic goal; and what a penguin's view of life on ever-shrinking sea ice might be. Find out more about the symposium in this [media advisory](#).



# 07

## American kestrels, most common predatory birds in U.S., can reduce need for pesticide use

Farmers are reducing the environmental impacts of pesticide use by attracting birds of prey to their lands. In some areas, American kestrels -- small falcons -- are replacing chemicals by keeping pests and invasive species away from crops. Learn more in this NSF [Discovery](#) story.



# 08

## How will sea level rise affect infectious diseases? For answers, look to the past

How will sea level rise influence the prevalence of infectious diseases? The best way to answer that question, says NSF-funded paleoecologist John Huntley of the University of Missouri, may be to look to the distant past. Huntley and colleagues found that as sea level rose during the Holocene (the geologic epoch from 11,700 years ago to the present), disease-causing parasites in clams increased dramatically. Higher and warmer waters, the researchers discovered, are the likely culprits. Learn more about the likelihood of rising water levels effecting parasites in this NSF [Discovery](#).



# 09

## NSF support helps advance research in geography and spatial science

NSF awarded more than \$10.2 million in 2017 through its Geography and Spatial Sciences (GSS) program to fund 64 new projects that will advance knowledge about geographic patterns and processes, as well as the complex dynamics of interactions among human, physical and biotic systems on Earth. The GSS program promotes research about the nature, causes and consequences of human activity; natural environmental processes; and human-environmental interactions across a range of scales. The program also promotes education and training opportunities for geographers and spatial scientists and their involvement in interdisciplinary research. Find out more in this NSF [news release](#).



# 10

## First look at Jupiter's poles show strange geometric arrays of storms

With NASA's Juno spacecraft, NSF funded scientists have gotten a good look at the top and bottom of the planet Jupiter for the first time. What they found astounded them: bizarre geometric arrangements of storms, each arrayed around one cyclone over the north and south poles -- unlike any storm formation seen in the universe. Learn more and read the full story in this NSF [News From the Field](#).

