



## A Message from the Director of the National Science Foundation

What an exciting month for science! The amazing NSF [LIGO \(Laser Interferometer Gravitational-Wave Observatory\)-VIRGO discovery](#) revealed a new source of gravitational waves, this time from the collision of two neutron stars located approximately 130 million light-years away, much closer than the prior black hole collisions. Adding to the thrill of this discovery was the detection of light across the entire electromagnetic spectrum, revealed through a coordinated observation network of roughly 70 observatories both ground-based and space-based. This combination of tools and technologies allows us to expand our opportunities to detect new cosmic phenomena and piece together a fresh narrative of the physics of stars in their death throes.



These new findings also demonstrate the crucial need for government-funded, high-risk, high-reward projects and the importance of international collaboration in order to make fundamental discoveries about the nature of our universe. When NSF began funding LIGO in the 1970s, the agency took a big risk. In this project, NSF saw the potential to transform our understanding of the universe and dared to pursue it despite an uncertain outcome. NSF's steadfast commitment to LIGO and its science over the years was complemented by the work of our international collaborators and counterpart agencies and we are grateful for their commitment.

NSF's LIGO made big news in another context this month: Researchers Rainer Weiss, Kip Thorne and Barry Barish, whose vision and perseverance were LIGO's primary drivers, won the 2017 Nobel Prize in Physics. Their selection was part of an NSF "sweep" of Nobel Prizes this year that included NSF-funded scientists Jeffrey Hall, Michael Rosbash and Michael Young in Medicine; Richard Thaler in Economics; and Joachim Frank in Chemistry, who won the prize with Jacques Dubochet and Richard Henderson. NSF congratulates all on their achievements.

The newest LIGO-VIRGO discovery and the Nobel Prize recognition demonstrate NSF's importance and impact across the entire spectrum of scientific research. The unexpected outcomes generated by fundamental science enrich lives and provide a solid foundation for the future.

*Francis A. Cordova*

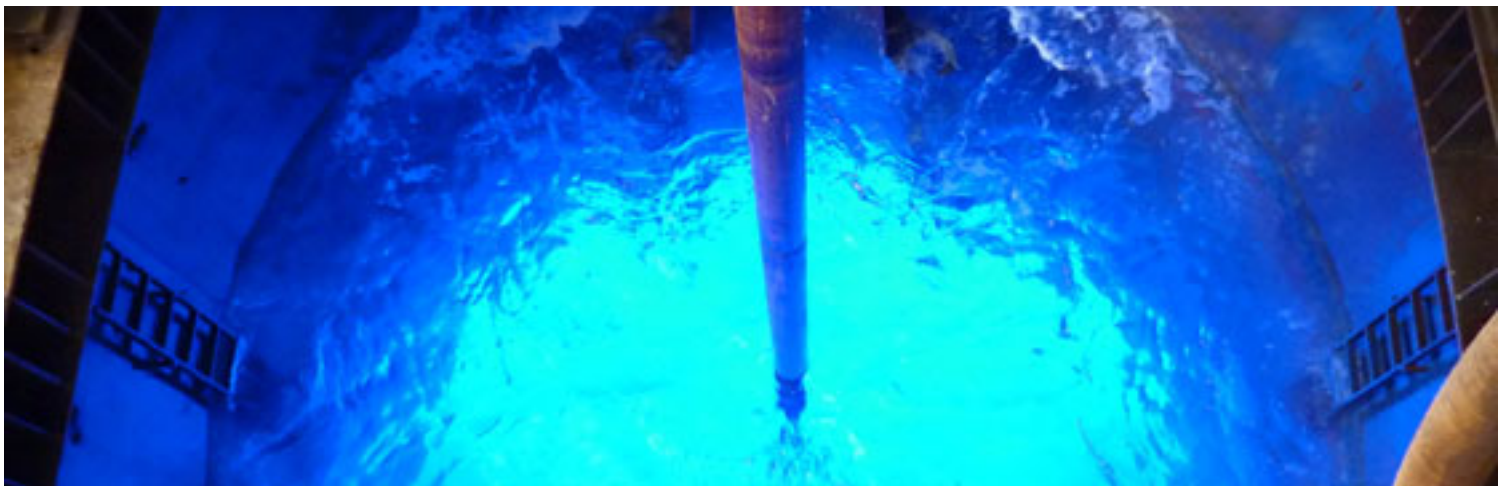
Dr. France A. Córdoba  
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## Where Discoveries Begin...



### [Final seismic station installed in Alaska](#)

Movable array will enhance earthquake, tsunami and volcano observations and warnings.



### [New details on the lost continent of Zealandia](#)

Fossils reveal geography and climate of Earth's seventh continent.



[Self-imposed groundwater fees cut farm use by a third](#)

During droughts, farmers slash use, plant less thirsty crops and use water more efficiently.

## What's Next?

[Generation Nano](#): Superheroes Inspired by Science – this competition challenges middle and high school students to use science to create or empower a unique superhero. Students tell their hero's story in a comic or video. Students win scholarship money and the opportunity to display their superhero at the USA Science & Engineering Festival in Washington, DC.

[Community College Innovation Challenge](#) – this competition challenges community college teams to use science, technology, engineering and mathematics (STEM) to innovate solutions to real world problems, compete for cash awards and earn travel support to attend an Innovation Boot Camp in Washington, DC.

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