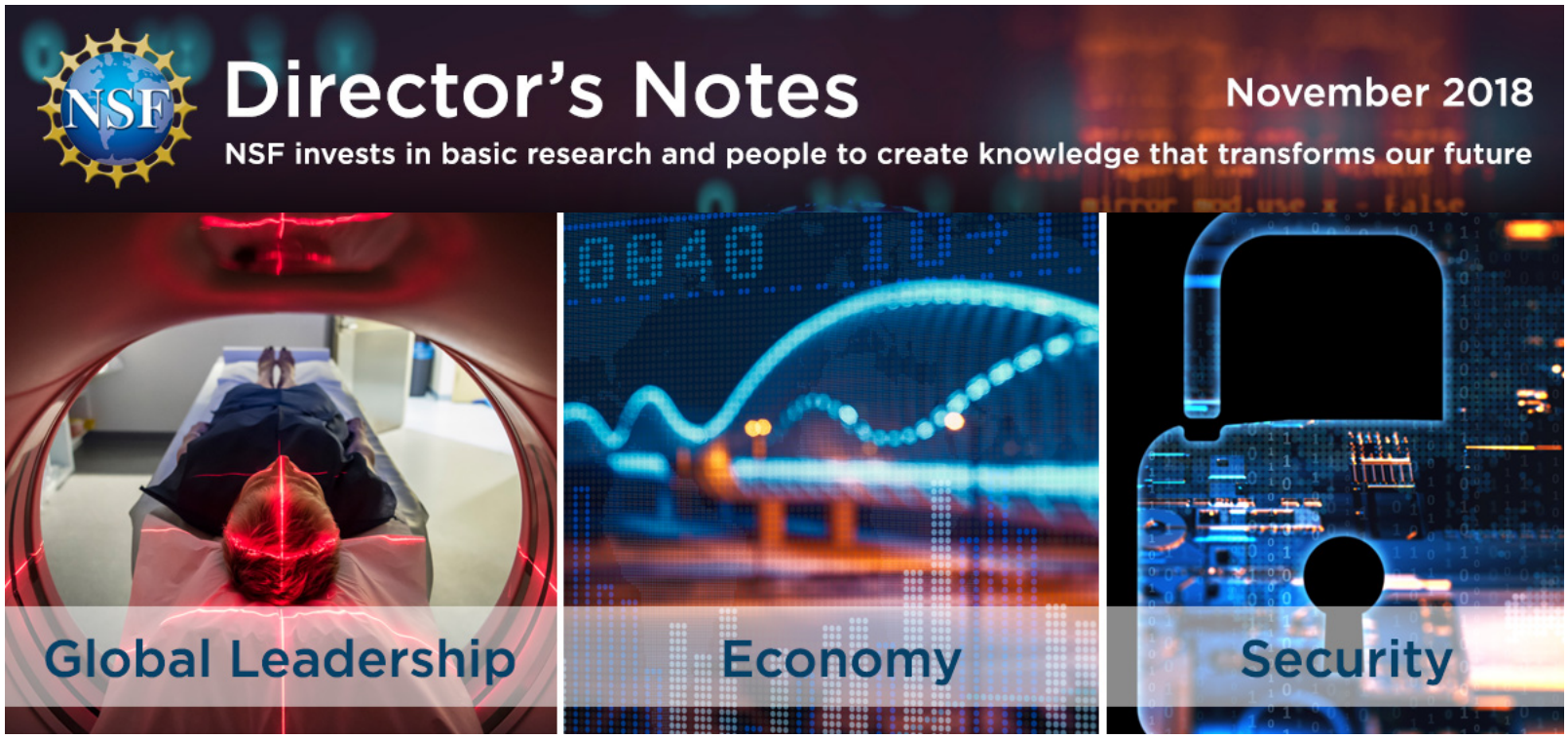
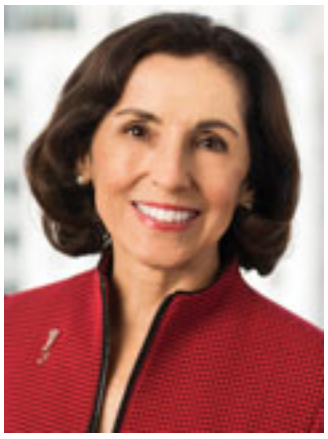
A monthly message from NSF's Director



A Message from the Director of the National Science Foundation



Over the last century, advances in quantum science have produced a myriad of products that are now integral to the rhythm of everyday life. Smartphones, computers, fiber optic communications, barcode scanners and medical imagers such as MRI are just a few examples of these technologies. Building on the discoveries of the first quantum revolution, researchers now have the tools and techniques to ignite a second quantum revolution.

As a long-time champion of quantum research, the National Science Foundation (NSF) is uniquely positioned to promote initiatives that will continue to position the U.S. as a leader in this new era. Of the 231 NSF-funded Nobel laureates, 31 were honored for advancing quantum research. Through the Quantum Leap initiative, one of NSF's 10 Big Ideas, the agency is accelerating innovative research to address challenges in quantum technology development. NSF anticipates spending at least $125 million in fiscal year 2019 to support fundamental quantum research to create everything from secure quantum communications to the first-ever fully connected, practical quantum computer, and to train the next generation of quantum scientists, engineers and entrepreneurs.

On the policy front, NSF, along with the White House Office of Science and Technology Policy and two other federal agencies, will coordinate a national agenda on quantum information science and technology through the National Science and Technology Council's Committee on Science Subcommittee on Quantum Information Science.

In his book "Brief Answers to the Big Questions," Stephen Hawking writes, "So look carefully at the map of the microwave sky. It is the blueprint for all the structure in the universe. We are the product of quantum fluctuations in the very early universe." The need to pursue quantum science research is critical because the impacts of this work will be as far reaching as the boundless night sky. By supporting scientists and engineers as they delve more deeply into the exotic quantum realm, NSF will play a key role in harnessing the field's full potential.

Dr. France A. Córdova
Director, National Science Foundation
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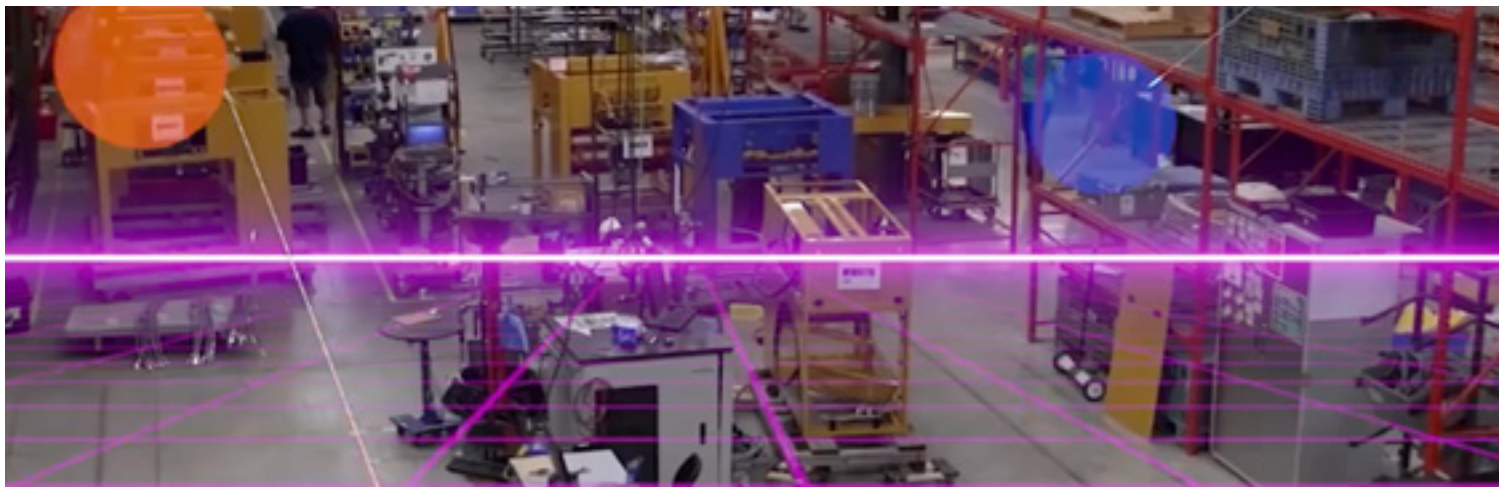
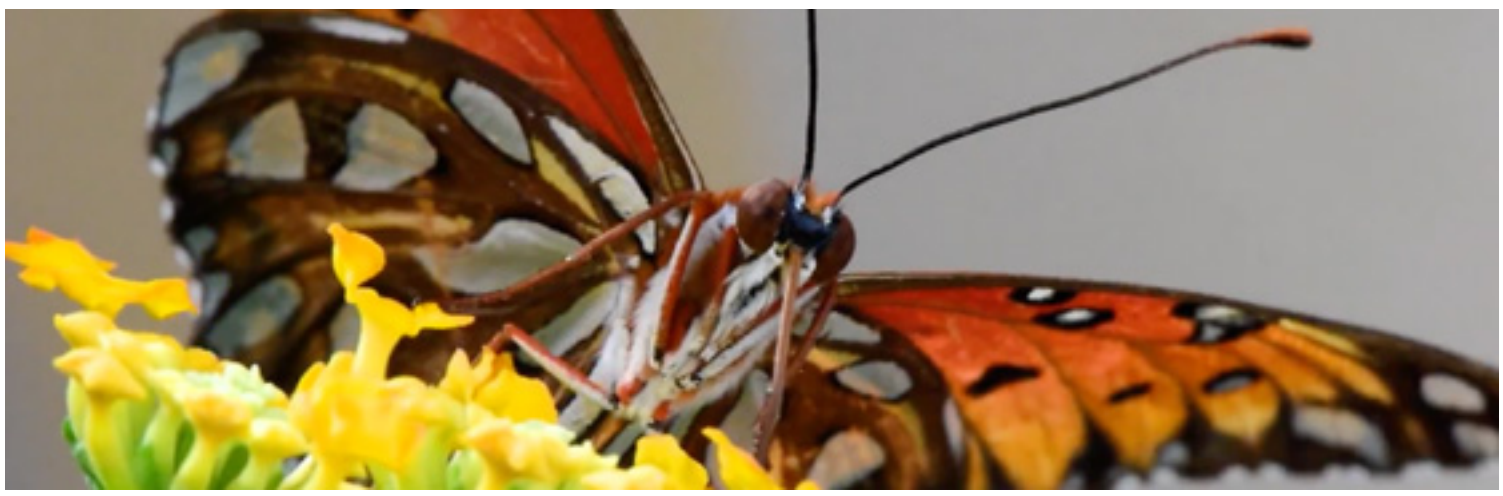
Where Discoveries Begin...



Factory of the future shaped by augmented reality
Labor-saving technologies tested in the virtual world before placement on the factory floor.

Improving quality of life for the disabled
Sensor-embedded wearable robots could shift rehabilitation paradigm.



The genetic path to biodiversity
Researchers discern the mechanisms responsible for the uniqueness of butterfly wings.

What's Next

Dec. 1 – Dr. France Córdova will discuss the significance of science leadership at the Council of Scientific Society Presidents, American Chemical Society, Washington, D.C.

Dec. 6 – Dr. France Córdova will participate in a panel discussion on innovation policy at the Business Roundtable Innovation Summit at the Anthem Theater in Washington, D.C.

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