



Director's Notes

NSF invests in basic research and people to create knowledge that transforms our future

April 2019



A Message from the Director of the National Science Foundation

As an astrophysicist, I was humbled to participate in the recent [announcement](#) of the first-ever image of a black hole. The glowing circular silhouette brought tears to my eyes. It is an amazing image, capturing the event horizon of a black hole at the center of the Messier 87 galaxy some 55 million light-years away.

This historic discovery by the Event Horizon Telescope (EHT) project was truly a worldwide effort, involving 200 researchers from 60 institutes across 20 countries and regions. Over a decade, these men and women collaborated to solve staggering technical challenges. They synchronized telescopes across the globe; developed ultrafast recording equipment to pick up Messier 87's faint radio signals; analyzed historical weather records to pinpoint the best viewing times; and generated new methods to store, process and analyze massive amounts of data.

Their hard work captured 5 petabytes of data (about 5000 years of MP3 files), which produced an image just a few hundred kilobytes, that will spark even more science. I anticipate many more stunning discoveries as researchers add the EHT to the mix of multi-messenger astronomy. Imaging a black hole creates new opportunities to study quantum gravity, the underlying physics of black holes and more.

As with any high-risk, high-payoff project, we don't know at the start that the outcome will be spectacular, confirm theoretical predictions or pique the imagination. But we persist. We continue to engage in the process of basic research in the hopes that one day we will unlock another mystery held by the universe.

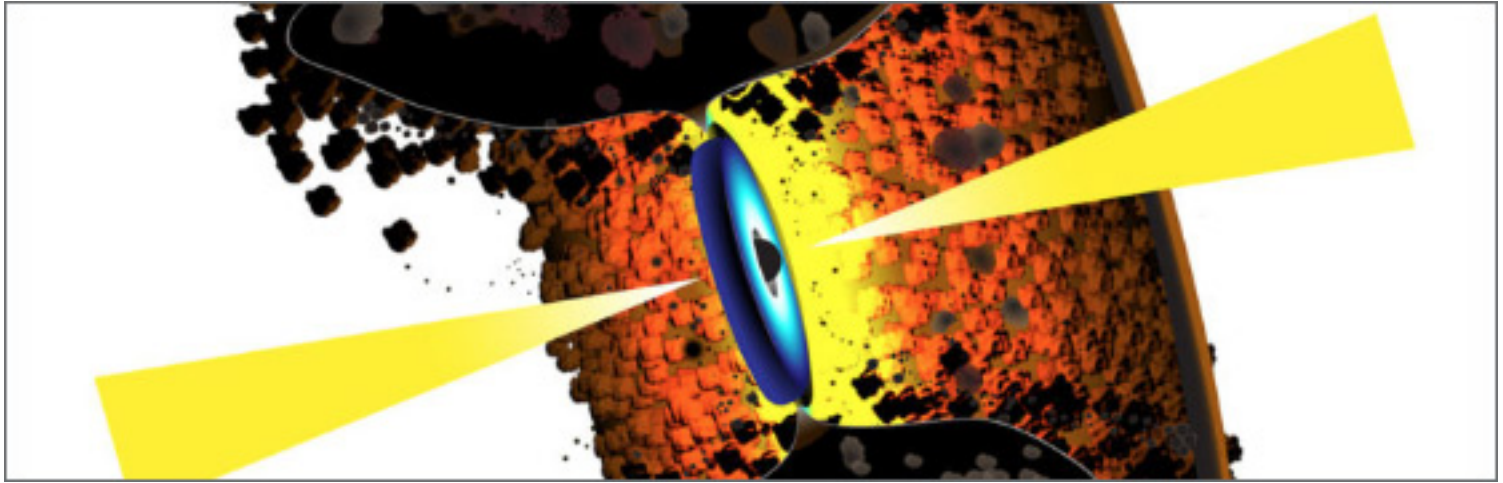
Visit NSF's [web site](#) on black holes for more on the EHT project.

A handwritten signature in black ink, reading "France A. Córdoba".

Dr. France A. Córdoba
Director, National Science Foundation
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Black hole photo credit: *Event Horizon Telescope collaboration et al.*

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