

## **OPENING STATEMENT**

Ranking Member Eddie Bernice Johnson (D-TX)

House Committee on Science, Space, and Technology  
Full Committee

*“Unlocking the Secrets of the Universe: Gravitational Waves”*

February 24, 2016

Thank you, Mr. Chairman, for holding this hearing on this very exciting scientific breakthrough. I want to congratulate each of you on the witness panel for your role in LIGO’s success. Thank you for being here this morning to talk about what this achievement means for science, and for our nation, and about the long-term commitment to high-risk, basic research that made it all possible.

The story of the Laser Interferometer Gravitational-Wave Observatory – or LIGO – is a story about the talent, creativity, and perseverance of U.S. scientists and engineers. It is a story about the 65-year commitment of the National Science Foundation to high-risk, basic research. And it is a story about what we stand to lose as a nation if we fail to maintain faith in our scientists, and in the scientific process exemplified by the National Science Foundation that is the envy of nations around the world.

When LIGO was first proposed by a small group of physicists from MIT and CalTech, many scientists responded, “You are crazy. It is not possible to build a gravitational wave detector.” Many of the scientists at the National Science Foundation and the National Science Board also quietly wondered if it was possible. But the project leaders presented a compelling plan, and the Foundation, then under the George H.W. Bush Administration, decided to take the gamble. Because that is what the National Science Foundation does. It supports high-risk, but potentially high-reward, basic research that nobody else will.

Today, we all celebrate the scientific and technological achievement that LIGO represents. However, the path to this point was not smooth. When the National Science Foundation first proposed to build LIGO, debates raged in the scientific community and in Congress. Many scientists were concerned about protecting funding for competing physics and astronomy projects that were also important. They were also concerned about squeezing resources for research grants. Those concerns were understandable, and eventually led to the creation of a separate facilities construction account at the Foundation.

Members of Congress, including Members of this Committee, were also skeptical. This was a very expensive project, and some scientists doubted that it was technologically feasible. Members also wondered, what exactly are gravitational waves and why should we care? Throughout these debates and

despite the elimination of funding by Congress in the first year that LIGO was proposed and the attempt to do so again in the second year, the National Science Foundation kept faith in the scientists, and in its own mission.

Notwithstanding some of the debates we have had here in recent weeks, the primary purpose of the National Science Foundation is not to strengthen national security, or improve public health, or even to grow our economy. To be sure, those are all critically important outcomes of National Science Foundation investments in basic research across all fields of science and engineering, and some NSF funded research has intended applications even at the proposal stage. However, the essential, core purpose of the National Science Foundation is to promote the progress of science, whether or not there is a foreseeable or intended application, and to train the next generation of U.S. scientists and engineers. And it's clear that the Foundation's bold investments in LIGO, driven by that core purpose, have led to a major scientific breakthrough.

Today's hearing serves as a reminder not just of how talented U.S. scientists and engineers are, but of why we must work hard to maintain our status as the best country in the world to do science, by continuing to fund NSF and encourage its risk-taking. This is a lesson that we should apply to the entire agency, and not just to certain fields of our choosing. Twenty-five years ago, many Members of Congress did not want to fund the search for gravitational waves. After all, how was that in the national interest? But enough Members did dare to imagine, and here we are today.

Once again, I want to thank and congratulate the witnesses, and now I will yield the remainder of my time to my colleague from Illinois, Mr. Foster.