Testimony Regarding Fiscal Year 2014 Funding for
Federal Science and Technology Programs
Submitted to the
Subcommittee on Commerce, Justice, Science and Related Agencies
Committee on Appropriations,
United States House of Representatives
by
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On behalf of the University Corporation for Atmospheric Research (UCAR), I submit this testimony to the House Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies. UCAR is a consortium of over 100 research institutions, including 77 doctoral-degree granting universities, which manages and operates the National Center for Atmospheric Research (NCAR) on behalf of the National Science Foundation.

I urge the Subcommittee to provide the maximum amount of support possible for the vital research and education programs administered by the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), and the National Oceanic and Atmospheric Administration in fiscal year 2014.

The Importance of Our Research and Education Investment

As last October's Hurricane Sandy moves to its rightful place in the annals of historic storms, we should stop and ask what the impact of Sandy would have been on the mid-Atlantic section of this country if the storm had hit in October 1963 – 50 years earlier.

It might have disrupted the famed 1963 World Series between the Dodgers and the Yankees – the series that saw Sandy Koufax, Don Drysdale, Johnny Podres, and Ron Perranoski combine to give up only four runs in four games. Or it might have played havoc with the Giants-Cowboys football game at Yankee Stadium, which the Giants won 37 to 21 with Y.A. Title throwing 4 touchdowns.

Or it just might have killed tens of thousands of people living on the eastern seaboard.

Fifty years ago, hurricane advisories extended only two days into the future, computer models and weather satellites were in their infancy, and forecasters might not have expected Sandy's unprecedented westward curve into New Jersey. We did not have the sophisticated weather information system that made it possible for the National Weather Service, university researchers, and private sector forecasters to make the call on Sandy as early, as often, and as accurately as they did so that residents and businesses had sufficient warning to prepare and take shelter. While not perfect, these forecasts undoubtedly made a life or death difference for millions of people.

How did we as a society end up with a sophisticated weather enterprise that could make such an accurate, lifesaving call?

The short answer is that we – society – invested in science, technology, and education. This includes everything from basic research in mathematics and computer science to the development of satellites and parachute-borne instrument packages that could make vital observations. It also includes the ability to stream the information into supercomputers so that the data could be turned into useful guidance.

These advances are critically important, because we are probably more vulnerable to severe storms today than we were in 1963. Over the last few years, we have seen the deadliest hurricane and deadliest tornado outbreak since the early 20th century. We now have many more people living in coastal areas. We are highly dependent on an instantaneous communication system easily disrupted by such a storm. We are also dependent on the power grid for everything from transportation to commerce to sophisticated medical care – all of which is extremely vulnerable to such storms.

Frankly, the Nation should be grateful that the Congress has steadfastly provided public resources that led to the creation of today's research and education enterprise.

But it was not just the investment in the physical and mathematical sciences or satellite technology that delivered this life-saving information. It was also our investment in environmental sciences – including weather, climate, ocean and coastal research – as well as the social sciences that examine how people respond to warnings. Together, this knowledge enabled state and local emergency managers and first responders to prepare and inform citizens in a way that saved lives. And it was the innovative technologies allowing the complex web of data to be presented in a manner that most people—with or without smart phones—could understand.

The Administration and the Congress are embroiled in a high stakes debate regarding spending and tax policy that will affect nearly every citizen today – but also future generations of citizens. As part of that ongoing debate we are going to scale back federal spending in nearly every part of the budget – including research and development.

At a time when science is growing more and more capable of laying the groundwork for seven-day hurricane forecasts and even more accurate predictions of landfall location and storm surges, is reducing our investment in science and technology really the best way to learn from a storm that threw the nation's largest city into turmoil and disrupted countless lives?

We should use Hurricane Sandy as one of those teachable moments to ask: Are we doing enough to upgrade our capability to forecast the storms of tomorrow? And are we investing sufficiently in our research enterprise and our educational system to help us achieve that important capability? And are we really about to start walking away from the investments we have made over the last 50 years to build our research enterprise that is the key for the Nation's future economic and national security?

This Subcommittee and the rest of your Congressional colleagues have an almost impossible and thankless task – to make extremely difficult and far reaching decisions in the face of uncertainty and international competition. I hope you will be able to see your way clear to continue to invest in the Nation's research and education enterprise despite these difficult circumstances so that 50

years from now, our children and their children will find themselves living in world filled with economic opportunity, environmental stability, improved health care, and a more secure future.

Thank you for the opportunity to present these views. I would be happy to answer any questions the Members of the Subcommittee may have.