Innovation Deficit
President Eli Capilouto
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Last month, I joined 165 college and university presidents from across the United States in a letter to President Obama and members of the 113th Congress urging them to recommit to fundamental investments in research.

The reasons, I think, are inarguable, although not always readily apparent in debates of deficits and priorities.

The fact is that throughout our modern history, the U.S. economy – built on entrepreneurship, innovation and resolve – has anchored the global market.

Undergirding that anchor - and the system’s fundamental strength - is our people’s ability to be at the forefront of discovery and ingenuity.

However, today, federal budget priorities for research are dwindling and the effects of sequestration are creating an “innovation deficit” in our economy. And, because our ability to grow our way to recovery is contingent upon new discoveries, we are setting ourselves up to fail.

Consider our model for prosperity.

Following the economic and human devastation of World War II, the majority of our nation’s growth was a result of technological advancement, much of which stemmed from federally funded scientific research. The creation of GPS and touch-screens, for example, brought forth new industries and consumer products. And life-saving vaccines and MRIs opened new fields of medicine and treatment.

One of the world’s most transformative creations – the Internet – began as a platform funded by the Advanced Research Projects Agency (now DARPA), an agency of the U.S. Department of Defense.

Support from a National Science Foundation grant helped launch Google in its infancy. Companies like Intel, Apple and Microsoft use technology made possible by advancements reached as a result of public research funding.

The list is lengthy. Its impact on our country and world is almost incalculable.

But consider one way to measure the importance of such investment – economic impact.

The National Research Council calculated the portion of revenue from 30 well-known computing firms whose technology could be traced back to research supported by government agencies - "the total was nearly $500 billion a year."

In Lexington, a company by the name of Allylix is producing natural flavors and scents derived from yeast-based research developed in our College of Agriculture. The company is attracting outside investment and creating high-paying jobs.
UK’s Center for Applied Energy Research is developing technologies that can answer serious questions that challenge the global energy economy and essential Kentucky industries.

But new industries and jobs tell only half the story.

Our basic health, quality of life and longevity have been fundamentally changed because of federally sponsored support for basic scientific research— the idea of discovery simply for discovery’s sake.

For instance, the work of 12 Nobel Laureates responsible for the development of the statins class of cholesterol medicine was supported by federal research grants. Those scientists didn’t start out trying to discover drugs that would breakdown cholesterol. They were simply seeking to understand and answer basic scientific questions of discovery.

What they found, though, has changed the lives and health of millions.

Similarly, the science behind the Human Genome Project has returned an estimated $140 for every dollar invested and contributed to incredible advancements, diagnosis and treatments in medical science.

This summer, after years of planned investment, UK’s Markey Cancer Center was designated a National Cancer Center by the National Cancer Institute (NCI) – an agency of the National Institutes of Health (NIH).

We pursued this dream because Kentucky cancer mortality rates are too high – the highest in the nation. Over the last 10 years, if Kentucky’s average cancer mortality rates were aligned with the national average, where cancer has been in decline, 18,000 more lives would have been saved.

NCI-designation and federal support for scientific breakthroughs reached in our labs and clinics are essential if we want to decrease cancer deaths in Kentucky.

However, as part of sequestration, the budget for NIH – the federal agency responsible for supporting medical research – was cut by $1.5 billion; translating to roughly 700 fewer competitive research projects funded.

Last year, UK earned $269 million in external grants and contracts. That's money being invested in discovery that saves lives and creates jobs. Funds that have an immediate, finite economic impact as we recruit top scientists who can attract high-profile grants.

We can do more, and we must do more. But it will take a renewed investment in our model for prosperity. Competing nations are using the formula that we developed to beat us at our own game.

Rapidly developing economies in China, Korea and Singapore are far outpacing U.S. investment in research and discovery – two to four times our domestic investment rate. Further, we have fallen to 12th among developed countries in the number of young adults with a college degree.

Like all of you, we know that challenges remain. Tough decisions continue to lie ahead. Every day, the University of Kentucky commits to providing affordable access to a quality degree; engaging in
research that advances regional industries and creates jobs; and providing quality care to Kentucky families.

As the country recovers in a still fragile global economy, we cannot forget – nor abandon – the principles that made us strong. Public investment in research and development, though not always immediately apparent, is an essential driver of our recovery. It has been a pillar of our success. It will be in the future, if we commit to such investment now.

By choosing the investments that once catapulted our country to the forefront of the global economy, we can continue to be a bright beacon for the world. Education, research and entrepreneurship can and will deliver a new dawn for our region, our Commonwealth and our nation once again.

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