Freeing Up Money For Science, Without Funding Waste

By Hank Campbell — August 20, 2015

Congress has decided to boost funding for the National Institutes of Health by $9.3 billion over five years, and that is welcome news to researchers. But there are two ways we could have prevented life sciences researchers from feeling like they were being disrespected by the current White House administration.

The first is to recognize that the previous administration, and his same-party Congress, loved science a little too much and reset expectations somewhat. When NIH funding was basically doubled in a short period of time, it meant the creation of many new buildings for Johns Hopkins University and a whole raft of new R01 grants and hiring of post-docs to do research. However, science actually doesn't get done that way. It is mostly a slow, measured process. If it was really possible to just spend more and get a result, we could throw $50 billion at cancer and solar power and the issues would be solved.

Instead of boosting science output, it created an artificial bubble. The current administration wanted to focus on solar panels, not biology, and academia was producing 600 percent more PhDs than were ever going to get faculty positions, which meant a glut of post-docs, and suddenly, the average age for getting a first grant became 40-plus.

So while it was wonderful that the White House and Congress in the early 2000s were so pro-science, it didn't help science to be over-funded in such a short period of time.

The second obstacle has been a lingering one: waste and duplication. Former Senator Tom Coburn, one of the few fiscals hawks in either House of Congress, used to issue an annual report of such waste in transportation, and the military, and in science. But scientists reacted no differently than any of those other special interest groups when their funding was critiqued. They cried foul and claimed they were being unfairly targeted. Yet they should have embraced it. He was telling them that they could easily have more funding if the government started spending the money already allocated in ways it was supposed to be spend -- not to fund things that were not science (i.e. how people build relationships in Farmville, why political candidates make vague statements) and to prevent funding from becoming bureaucratic waste.

More recently, a third issue has cropped up: Concern that even studies that are science may not be very good.

I have written in the Wall Street Journal about reproducibility issues [1], and Adam Marcus and Ivan Oransky touch on it again today [2]. A recent paper [3] determined that half of examined papers could not be reproduced, and implied therefore they were flawed. But they are being too simplistic -- reproducibility is actually a false metric in a lot of cases, so perhaps they mean
replication, and erroneously use the terms interchangeably in their article.

Yet definitions aside, the real issue is a modern Big Science culture that makes publishing things in a hurry so important in the chase for government money.

Sixty percent of American basic research, and almost 100 percent of applied research, is corporate -- and America produces the best science in the world, with five percent of the population generating over 30 percent of total output. By instead promoting government Science, Technology, Engineering and Math (STEM) initiatives across multiple government departments at a cost of billions of dollars, we have created a belief in universities that only academic science is “real” science and everything else is basically some flavor of evil Big Pharma.

In that environment, where every lab is competing against every other lab to get the prestige of a finite pool of government money, without having to get funding in the private sector, shortcuts will be common. As will be doing incremental studies guaranteed to succeed rather than doing bold science, because government penalizes failure in a way corporations do not.

One solution proposed by Marcus and Oransky, to divert funding from science in order to replicate science, is laudable but unworkable. It is a career dead-end and it passes on some of the cost and responsibility to universities that are already woefully inefficient at every level.

However, making sure there is no outright fraud, and that science funding only goes to science and not to waste or duplication, or to things that have no business getting science funding, frees up a lot more money for good science. And that means less worry about reproducibility or replication.