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Private parts and public funding: A researcher champions oddball science

By: David A. Fahrenthold – April 8, 2013

Patricia Brennan received \$384,949 from the U.S. government to study duck genitalia. Last month, that made her a national joke.

Now, it's made her a little bit of a folk hero.

"Genitalia, dear readers, are where the rubber meets the road, evolutionarily," Brennan wrote last week at Slate.com, defending her work against conservative critics. She argued that, if the government wants to support science, it must support *all* kinds of science.

Even the stuff that might never make anybody a fortune, or make a difference in taxpayers' lives. Even a study of the personal regions of the Muscovy duck. Because the biggest advances in thinking come from the strangest places.

Brennan is trying to do something new with an old and uncomfortable role in Washington politics. Having been spotlighted as a nutty professor — frittering away taxpayer money on oddball research — she has sought to own that role proudly, and defend oddball science itself, as a key part of what America does.

Is it working? She's been re-tweeted 1,000 times, praised on MSNBC and thanked by professors and science lovers around the country.

But, in past controversies like this one, Washington has never been very interested in the nutty professor's side of the story.

"This mockery of science has to stop. It just has to stop. These are people who just don't understand science at all," Brennan said Monday during a phone interview.

The federal grant that started this controversy is tiny, at least among the big numbers of the federal budget. Brennan's funding equals 0.000004 percent of this year's total spending. The National Science Foundation, which gave her the grant in 2009, got \$5.9 billion for all its research this year.

But these debates are rarely about the money. They are about moral choices embedded in the federal budget. As in: If nobody else will provide funding to study the secrets of duck genitals, does the government have a moral obligation to do it?

The NSF says yes. A civilized culture needs people studying things that might never make anybody any money. One of Brennan's collaborators, for instance, studies why bluebirds are blue. What he's found could change the way paint is made.

But other people wonder whether a civilized culture could survive without knowing the secrets of duck sex.

"The fundamental issue is that the people who paid for [the duck research] — whether or not it was a good use of money — didn't have a choice," said Tad DeHaven, of the libertarian Cato Institute. "I don't buy into the assumption that, 'Nobody else is going to pay for it, therefore the federal government has to pay for it.'"

Brennan is a professor at the University of Massachusetts at Amherst and formerly a postdoctoral fellow at Yale. Her basic question: Why are ducks' genitals so strange? The male one looks like a corkscrew. The female one also has a corkscrew shape.

But, oddly, it corkscrews in the opposite direction. "What are they doing with it?" Brennan asked herself.

Two federal grants have paid her to figure it out. The methods of Brennan's research need not be dwelt upon. But the results were interesting: At the back end of every duck, there was a small anatomical arms race. Female ducks' bodies had changed to stop the unwanted advances of rogue males.

"Their guy is the most beautiful one, the one with the best feathers, the one who does the best dance," Brennan said. The corkscrews are a kind of defense mechanism that can be turned on and off, to frustrate the outsider. "I love it. I think it's fascinating," she said.

Not everyone agreed. Last month, a reporter at CNSNews.com — a Web site affiliated with the conservative Media Research Center — discovered Brennan's grant and posted a story about it. That CNS story has been mentioned more than 960 times on Twitter and posted more than 4,700 times to Facebook. "Thanks to your generous donation to the federal government, you helped bankroll a Yale University study on the evolution of duck genitalia," Fox News host Sean Hannity said last week. "The price tag for taxpayers — over \$384,000."

In Massachusetts, Brennan had set up a Google alert set for the words "duck genitalia." So she knew she was in trouble. But once the spotlight is on you, what do you do?

Nothing, decided the other researcher who'd worked on the duck study.

"These people are angry. Mad. And they're not interested in the topic, right?" said Richard Prum, a Yale professor who had overseen Brennan's work. He would be glad to talk about the science, but this wasn't about the science. "So I didn't dive in."

There is a precedent for that. In the past, other researchers have tried to stay out of public debates on their research. Some have tried to correct the record — and found that Washington wasn't listening.

“A lot of time, it’s mischaracterized as, ‘Hey, these people are [getting] \$300,000 to build a robotic squirrel,’ ” said Rulon Clark, a professor at San Diego State University and one of the creators of “Robosquirrel.” Clark was one of the researchers who used a portion of that larger federal grant — \$13,700 or so — to build a fleet of taxidermied rodents, stuffed with robot guts.

That research showed Clark something interesting about squirrels. When they wave their tails at rattlesnakes, they appear less likely to be bitten.

It also showed him something that depressed him about Congress, where politicians continue to get the Robosquirrel story wrong.

“Mr. President, what about the \$300,000 for a robotic squirrel?” Sen. Rand Paul (R-Ky.) asked at an annual gathering of conservative activists last month.

So it goes. There is a frustrated professor in Atlanta who was widely mocked for taking a federal grant to study chimps throwing feces. Another one in Charleston, S.C., was accused of spending about half a million dollars getting shrimp to run on tiny treadmills. Louis E. Burnett, the biologist working on the shrimp study, corrected the record on the cost, saying that the treadmills cost just \$1,000 or so and were just a small part of the larger study. But the mistake is frequently un-corrected.

“Then there’s the infamous \$559,000 for a project to have shrimp run on a treadmill. To me that hardly sounds like justification to give the NSF more money,” said then-Rep. Jeff Flake(R-Ariz.) last year, calling for the agency’s budget to be cut. Flake is now a senator.

Brennan, in her piece for Slate, sought to defend not just her research but also the broader idea of federal grants for obscure science. Her funding was not in danger, since it had been allotted years before. But she and others are worried that the NSF budget will be cut as Washington embraces austerity. Already, the foundation has lost about \$356 million during sequestration, a cut that was large but not devastating.

Brennan says that science needs this money. So does she. Brennan plans to apply for another grant to continue her duck research.

“Absolutely. Otherwise I would not be able to do any more research,” Brennan said. “Who’s going to give me money to do basic science, if not the government?”