COSSA
CONSORTIUM of SOCIAL SCIENCE ASSOCIATIONS

Setting the Record Straight on "Wasteful Research"

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Monkeys on a Treadmill?

A Conversation with Dr. Kimberley Phillips

Support for fundamental, basic research has been an essential function of the U.S. federal government for decades. The National Science Foundation, National Institutes of Health, and other federal agencies invest in scientific research that has led to some of our country's most important innovations. Support for basic research has the potential to change the way we live, create new knowledge, solve societal challenges, and help us to better understand our world.

Still, some policy makers routinely dismiss projects as "wasteful" without attempting to fully understand their potential benefits to society or to the progress of science. Through this series, COSSA is providing an opportunity for researchers to set the record straight about the value and potential of their work, and confronting misconceptions about social science research funded by the federal government.

THE PROJECT:
Evaluating the Effects of Exercise in a Monkey Model of Multiple Sclerosis (2014)[1]

FUNDING AGENCY:
National Institutes of Health

AWARD AMOUNT: $63,470

FIELD(S) OF STUDY:
Neuroscience

SOURCE OF ATTACK:
Sen. Jeff Flake's (R-AZ) *Wastebook: The Farce Awakens* (2015)

"Physical exercise appears to show promise as a treatment for cognitive dysfunction in MS. Our research is providing fundamental knowledge concerning the wide-ranging effects of exercise in this disease model."

- Dr. Kimberley Phillips

COSSA: Describe your research project in your own words.

KIMBERLEY PHILLIPS: My scientific goals include understanding how exercise may alleviate the terrible burdens of neurodegenerative diseases such as multiple sclerosis and Parkinson's disease. Burgeoning research indicates that persons suffering from such diseases might benefit from exercise, and understanding the ways in which exercise affects these diseases could lead to improved treatments. Research into the mechanisms underlying the therapeutic effects of exercise has been hampered by the inability to directly measure how specific exercise regimens affect the molecules, chemicals and brain cells in humans. We therefore undertook the research in question, reported in the article *Take the Monkey and Run*, which developed a paradigm for safely and effectively engaging marmoset monkeys in exercise.

COSSA: How did you first learn that your project had been singled out?

PHILLIPS: I was working at my computer one Friday morning and noticed I received an email from a *Good Morning America* producer. At first I thought it was spam, but decided to open it. The individual informed me that my study was included on a list of research projects that Sen. Flake deemed "a waste of taxpayer funds." The producer wanted my reaction, and an explanation of the benefits for understanding the physiological responses to exercise in marmosets. Needless to say, my plans for the rest of that day changed.

Kimberley Phillips is Professor of Psychology and Co-Chair of Neuroscience at Trinity University, with additional appointments at the Southwest National Primate Research Center, Texas Biomedical Research Institute and the Research Imaging Institute, University of Texas Health Sciences Center at San Antonio. Dr. Phillips attended Wofford College (South Carolina) for her undergraduate degree and The University of Georgia for her graduate degrees. She has studied primate behavior in the field and laboratory for over 20 years. Dr. Phillips has lived and traveled all over the world but now calls San Antonio home.

(Photo credit: Charles Votaw)

COSSA: What are some of the potential benefits, impacts, and/or applications of the project (keeping in mind, *Reader*, that this is basic research)?

PHILLIPS: Our overall goal is to examine the effects of exercise on disease progression and cognition in a marmoset model of multiple sclerosis (MS). MS is the most common neurological disorder seen in young adults, affecting at least 600,000 individuals in the United States and 2 million worldwide. This demyelinating disease can have devastating and debilitating effects on neurological function, affecting sensory, motor, and cognitive functions. Currently, there are no drug therapies that specifically treat the cognitive impairments seen in people with MS. Physical exercise appears to show promise as a treatment for cognitive dysfunction in MS. Our research is providing fundamental knowledge concerning the wide-ranging effects of exercise in this disease model.

COSSA: How could your project contribute to further progress of science?

PHILLIPS: Marmosets are studied because of their strong biological similarity to humans, which means we can learn from an animal model with exceptional potential to reveal new insights about human biology. The research being challenged established such methods and therefore opened a door to a long-term study of the scientific basis of exercise as a treatment.

COSSA: What did the critics get wrong/right about your research?

PHILLIPS: The critics ridiculed the importance of developing a safe and effective paradigm for exercising a marmoset model of disease. They had no understanding for the necessity of developing an exercise paradigm that would not be stressful for the animals. Additionally, the critics claimed that the research cost $1 million. The truth is that the awarded project (which also included other experimental elements) was less than one-tenth of that amount.

COSSA: Was any effort made to contact you to gain clarity about the project prior to publicly singling it out?

PHILLIPS: Unfortunately, no one from Sen. Flake's office attempted to contact me about the research, prior to nor after publication. However, the Coalition to Promote Research (CPR) [a COSSA-led coalition] and the Coalition for National Science Funding (CNSF) invited me to present my research in April 2016 at their event "*Wasteful" Research? Looking Beyond the Abstract*. I did not hesitate at the opportunity to provide the true, scientific information underlying this research. The event was well attended by journalists, Congressional staffers, lobbyists, and other scientists. Sen. Flake attended as well, and I was able to spend about 10 minutes discussing my research directly with him. We had a good conversation about the study, and I think he left with a greater understanding of the value and necessity of not only my work, but of basic biomedical research. In addition, professional associations, including the American Psychological Association [a COSSA governing member], provided valuable guidance for me in responding to the attack on my research.

COSSA: What impact, if any, has this attack had on you, your research, your collaborators or this project?

PHILLIPS: The biggest impact this has had on me is that I have become more active in science advocacy and science communication efforts. These are good things!

COSSA: Is there anything else about this experience you wish to share?

PHILLIPS: While the authors of the Wastebook report characterized our work as fiscally wasteful, we think the most tragic loss would be the squandered opportunity to transform the quality of life of people with disabling brain diseases… something that can only happen if we pursue all avenues of research on new treatments.

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[1] *This study was supported by the Pilot Research Program at the Southwest National Primate Research Center (NIH grant P51 OD011133)*