



Rush D. Holt

Chief Executive Officer and
Executive Publisher, *Science*

April 25, 2016

To: Chairwoman Marsha Blackburn
Select Investigative Panel, House Energy and Commerce Committee

Dear Chairwoman Blackburn:

On behalf of the American Association for the Advancement of Science (AAAS), the world's largest general scientific society, I write in response to the March 30 letter from Chairwoman Blackburn of the Select Panel on Infant Lives. I appreciate the opportunity to present scientific information on the efficacy of fetal tissue research and to assist the committee in understanding its important role in addressing questions about medical research to promote human health.

As we indicated in our March 15 letter,¹ the decision to terminate a pregnancy does not bear on the decision to donate tissue. Scientific studies, such as one conducted by the University of California, San Francisco (UCSF),² reveal that reasons for this decision may relate to socioeconomic status, age, health, and marital status. Furthermore, the guidelines set forth in the National Institutes of Health Revitalization Act, PL 103-43, clearly stipulate that the option to donate tissue cannot be discussed with the woman until after she has made a decision to terminate a pregnancy.

Scientists who work with fetal tissue—many of whom are hesitant to be cited due to safety concerns—state that fetal tissue is unique and useful because it can offer information that other types of research, such as research using animal or adult tissue, do not always provide. Studies on animals may be predictive of results in humans, but not always. Fetal tissue is specific to early human development and may provide a level of assurance that may not be found solely utilizing adult or animal tissue.

It is used to study areas such as infectious diseases, eye development and disease, and to better understand fetal development.³ AAAS has long taken the position that research on cells derived from all sources, when conducted under strong ethical guidelines, should be conducted to answer questions about human health and development.⁴ This is in part because science is unpredictable. We do not know where the next medical advance will emerge, but we do know that sometimes, breakthroughs come from surprising places.

Regarding your inquiries about scientific information surrounding medical advances, vaccines, or cures achieved through the use of human fetal tissue research, fetal tissue research has been conducted since the

¹ http://www.aaas.org/sites/default/files/AAAS_FTR_March%202016.pdf

² <http://bmcwomenshealth.biomedcentral.com/articles/10.1186/1472-6874-13-29>

³ <http://www.nature.com/news/the-truth-about-fetal-tissue-research-1.18960#graphic>

⁴ http://www.aaas.org/sites/default/files/content_files/Stem%20Cell%20Research%20and%20Applications%20Report.pdf

1930's and was instrumental, for example, in discovering the vaccine for polio, where researchers infected fetal kidney cells in petri dishes to produce a large amount of virus that they could then harvest, purify and use to vaccinate people. This kind of discovery is made possible by allowing multiple lines of inquiry, and by utilizing a range of tools, which include fetal tissue research.

Perhaps the timeliest example to demonstrate the potential for scientific advancement from research that uses donated tissue involves the Zika virus. As you are aware, the Zika virus has been linked to fetal deaths and birth defects such as microcephaly, prompting the World Health Organization to declare it an international public health emergency. In order to understand the virus' effect on pregnant women and their fetus, scientists are using fetal tissue to test how the virus may cause these birth defects. Donated tissue gives unique insight as to the *in vivo* effects of the virus, and as stated by the Nowakowski study on Zika,⁵ it provides scientists a more comprehensive understanding of how the virus operates. Donated fetal tissue allows scientists to gain the necessary information on how the virus affects the fetus *in utero*, and to test a range of potential therapies and treatments for safety and efficacy.

To cite another recent example, there is a potential new prenatal stem-cell therapy to treat *osteogenesis imperfecta*, known as brittle bone disease, which was featured in a news article in *Science*.⁶ This debilitating disease is genetic, and researchers are preparing a clinical trial to test this therapy in pregnant women. The therapy involves the use of mesenchymal stem cells (MSCs) from donated fetal liver that is infused through an umbilical vein that directly treats bone development of the fetus before birth. Early tests overseas have shown sufficient promise to move to a clinical trial, and one of the promises of this therapy is that this specific type of stem cell has not demonstrated as strong of an immune reaction as blood stem cells.

Examples like these demonstrate the need to explore many different types of research, including research using donated tissue. By limiting the scope of research and restricting the scientific community's ability to follow the evidence, we thereby limit the possibility of discovering new medical advances, vaccines, or cures aimed at bettering society.

Finally, we want to reiterate our concern expressed in our March 15 letter over reports that the Select Panel plans to issue subpoenas that would risk making public the names of researchers, students, and others involved in fetal tissue research. There is, unfortunately, a history of scientists being harassed and threatened for conducting certain types of research, and AAAS has long sought to support and defend these researchers. Scientists do not choose their careers to court controversy. They do so because they want to answer important questions, and to advance science in service of society. As history has shown, answers to these questions can sometimes change the world for the better.

Sincerely,



Rush D. Holt, PhD
Chief Executive Officer and
Executive Publisher, *Science* Family of Journals

cc: Rep. Jan Schakowsky

⁵ <http://www.sciencedirect.com/science/article/pii/S1934590916001181>

⁶ <http://science.sciencemag.org/content/352/6283/284.full>