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S1404
Sen. Bayer
Attachment 1

Committee on Energy and Commerce
Select Investigative Panel on Infant Lives
"Bioethics and Fetal Tissue"
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Distinguished Chair and Honored Members of the Panel,

Thank you for the opportunity to offer my testimony in defense of infant lives and specifically in opposition to research using fetal tissue derived from induced abortions.

As background, I was trained in the disciplines of engineering and medicine receiving a PhD degree in medical engineering jointly awarded by Harvard University and Massachusetts Institute of Technology. I am currently a Professor of Radiology and Biophysics, serving as Vice Chair of Radiology Research at the Medical College of Wisconsin. I have participated in medical research for nearly 25 years. I have served on grant review panels for the National Institutes of Health (NIH) for over 15 years, including a four-year term on the Developmental Therapeutics study section. I serve on national advisory committees for clinical trials, and have founded two start-up companies. Most importantly, I am a wife and a mother.

**The views expressed are my own and do not represent the official views of the Medical College of Wisconsin.*

I am firmly opposed to research using human fetal or embryonic tissue from induced abortions or procedures such as in vitro fertilization (IVF). I am compelled to create awareness amongst the community and my colleagues as to why the use of such tissue is both unethical and unnecessary.

Let me begin by defining terms. The terms embryo, fetus, baby or infant each refer to different stages in the continuum of the developing child. When cells are extracted during the earliest stages these are typically human embryonic stem cells (HESC), which are obtained by destruction of the human embryo. When I speak of fetal tissue research I am referring to cells, tissues or organs that are harvested from an aborted fetus. While this is the focus of my testimony my arguments apply to the continuum of the developing child.

Proponents of research using fetal tissue make several claims. The first claim is that without fetal tissue many of the life-saving treatments we have today would not have been possible. Second, it is argued that without continued access to fetal tissue, we are preventing the discovery of new therapies. And third, it is alleged that 'proper *ethical* guidelines are already in place' to avoid the connection between abortion and fetal tissue research. I will speak to each of these claims.

First, it needs to be made clear that no current medical treatments exist that have required using fetal tissues for their discovery or development. While the often-cited polio vaccine was developed using fetal tissue cells, the developers later testified that initial studies were also successful using cells that were not of fetal origin. Though most vaccines today offer ethical alternatives, not all are available in the U.S., and some, such as chicken pox and Hepatitis A, currently do not have ethical alternatives [1]. *Yet there has never been a scientific reason requiring fetal cell lines for vaccine development.*

Testimony given to the FDA (US Food and Drug Administration (FDA), Center for Biologics Evaluation and Research) dated May 16, 2001, underscores this point. The developer of two common fetal cell lines (HEK 293 (human embryonic kidney) and Per C6 (isolated retina from a fetus)) stated that his motivation for developing these cell lines from aborted fetuses was simply to see 'if it could be done' in comparison to what had already been done with animal cells. Since

then, use of these cell lines has become widespread, and the manufacturers have no motivation to invest the time or money necessary to produce ethical replacements.

Due to lack of transparency, scientists can unknowingly become entrenched in using these cell lines. For example, the HEK 293 cell line is often offered as part of a standard kit available from biotechnology companies and branded under various names. Only upon specific request are alternatives provided. This lack of transparency is devastating for scientists who have ethical objections to use of this tissue and amounts to moral coercion.

Second, I refute the claim that that without continued access to fetal tissue, the discovery of new therapies will be prevented. The evidence is overwhelming to the contrary. For example, insulin for diabetes is produced in bacteria [2]. Chinese hamster ovary (CHO) cells have been used for the development of Herceptin for breast cancer [3] and TPA for heart attack and stroke. There are more than 70 successful treatments developed using adult stem cell sources [4]. Over over 1 million bone marrow transplants, which are essentially adult stem cell transplants, have been performed to date [5].

Still some continue to claim that fetal cells unequivocally provide the best option, because they divide rapidly and adapt to new environments easily. But alternative tissue and cell sources are available for research without ethical concerns and are demonstrating more versatility than originally thought [6]. Examples include stem cells from bone marrow, circulating blood [7], umbilical cord [8], and amniotic fluid [9] as well as induced pluripotent stem cells (iPSCs) and even neural stem cells from cadavers [10]. Adult stem cells have already been used for the development of new treatments, have been proven in clinical trials and resulted in the formation of new companies [11] that have successfully brought to market treatments that are routinely benefitting patients today. There is still no viable medical use for embryonic stem cells.

Yet the argument continues that keeping this avenue of research open may some day offer the *only hope* for a child, with a devastating disease or a person with spinal cord injury. In 1997, *The New York Times* reported the nation's first transplant of fetal tissue into a person with spinal cord injury [12]. The study required five to eight fetal spinal cords for each adult recipient but showed no significant therapeutic benefit [13, 14]. Many more studies followed with none showing significant therapeutic benefit yet with each continuing to claim *great promise*. This *promise without benefit* continues today at the cost of many human lives.

So let me address this claim from another perspective. Consider the possibility that a treatment *is* discovered using fetal tissue transplants, and it is the *only option* for a certain disease. Consider just one disease like Parkinson's, which affects up to 1 million people in the US alone. Based on a clinical trial in Sweden, cells from at least 3-4 fetuses are needed to treat each Parkinson's patient [15, 16]. So, 4 million babies would *need* to be aborted to treat this one disease, not to mention the number needed to treat patients worldwide. Imagine the magnitude of the demand for fetuses to cure yet another disease like Alzheimer's, which affects 44 million persons worldwide? Do we really want a world where the most vulnerable, those with no voice, are subject to the whims, desires and perceived needs of others? Clearly we will have created industrialized harvesting of preborn babies, a crime against the human race.

Third, the repeated assurances that 'proper *ethical* guidelines are in place' to avoid the connection between abortion and subsequent research are entirely inadequate. By purchasing fetal tissue products the researcher is not far removed from the act of abortion. As recently described in the journal *Nature* [17] one researcher continues to pay \$830 for each fetal liver sample, a purchase he must repeatedly make. A few years ago, before the recent media coverage, it was quite easy to go to the website of a biotechnology company and put almost any fetal body part in ones "shopping cart" and submit for a purchase. So independent of whether a

researcher is at the bedside of the one choosing an abortion, or using a fetal cell line created decades prior, by purchasing these fetal tissue products scientists are helping to create a market that drives the abortion–biotechnology industry complex [18].

Moreover, the demands of research do directly influence the procurement of fetal tissue. The timing of fetal tissue collection, as well as the procedures used to terminate the pregnancy *are* critical to obtaining research-quality tissue and at the right stage of fetal development according to the scientific need. This raises important concerns about whether the health of the mother is appropriately prioritized.

In summary I suggest consideration of the following:

- 1. Prohibit research using fetal tissue from induced abortions** but provide the support and resources necessary to aid scientists or biopharmaceutical companies to make transitions to ethical tissue sources.
- 2. Support the creation and continued success of institutions or efforts that undertake research using only ethical sources of tissue.** Institutions such as the Midwest Stem Cell Therapy Center come to mind. During my years as a grant reviewer for the NIH, I have been continually inspired by the brilliance and innovation of my scientific colleagues. Applying this brilliance in the context of ethical avenues of research should be encouraged and is sure to result in amazing discoveries that prove best for society.
- 3. Mandate transparency in labeling of all scientific materials, drugs and cosmetic products regarding the source of material used for development or manufacture.** This will raise awareness and protect the rights of conscience for scientists, patients, and consumers who do not want to be corrupted by such practices.

Finally, I conclude with what is first and foremost. Each and every human life is sacred, with a fundamental dignity that does not depend on his or her developmental stage or abilities. This

value belongs to all without distinction from the first moment of existence. Each and every human life is unique and unrepeatable, created by our loving God in His image and likeness. Nothing, no person, no argument and not even a scientific discovery or cure, can diminish the fact that using human embryos or fetuses as objects or means of experimentation constitutes an assault against their dignity as human beings, who have a right to the same respect owed to every person [19].

Respectfully,

Kathleen M. Schmainda PhD

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