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**Statement on the
“Maryland Stem Cell Research Fund”
Maryland Technology Development Corporation (TEDCO)**

**Presented to the
Subcommittee on Health, Education, and Human Resources
Senate Budget and Taxation Committee**

**By
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This statement, advocating the elimination of state funding for embryonic stem cell research, is conveyed on behalf of the Catholic bishops serving Maryland and their dioceses.

In November of 2007, scientific communities around the world celebrated the discovery of a way to obtain pluripotent stem cells without harming human embryos. Two independent scientific studies showed that human skin cells can be reprogrammed to produce stem cells that have all the benefits of embryonic stem cells without the ethical and medical hazards involved in obtaining and using embryonic stem cells. These new cells are known as induced pluripotent stem cells (iPS cells). This discovery demonstrates what the Catholic Church has always maintained: Medical advances and respect for human life can and should go hand-in-hand.

These stem cells, iPS cells, are obtained without destroying human embryos and without exploiting women for their eggs. The technique used to produce the cells is technically superior to techniques used to obtain embryonic stem cells, and is relatively simple to conduct. The use of iPS cells in therapy is preferable to using embryonic stem cells because using iPS cells avoids problems with tissue rejection (since the iPS cells come from the patient’s own body).

Detractors of this amazing breakthrough have made statements or raised questions that have been addressed in the public domain. Attached to this written testimony is a fact sheet provided by the Bioethics Defense Fund and the Westchester Institute for Ethics & the Human Person. A summary of that Q&A document is below.

Doesn’t good science demand that we investigate all avenues of inquiry? No, “good” research respects both scientific and ethical standards. iPS cell research meets every mark of good science.

Shouldn’t we continue to fund embryonic stem cell research despite the recent advances with iPS cells? No, direct reprogramming is a scientifically feasible

and promising alternative to research requiring the destruction of human embryos. President Clinton's bioethics commission stated that the destruction of human embryos presented a moral problem and was "justifiable" only when no alternatives were available.

Don't scientists still need to compare iPS cells to embryonic stem cells? Yes, but that doesn't require destroying more human embryos to make additional embryonic stem cell lines. Twenty-one viable lines of human embryonic stem cells are available to make these types of comparisons, and their use is funded by the federal government.

Do we know if iPS cells are really equivalent to embryonic stem cells? Yes! According to Dr. James Thomson, who isolated the first embryonic stem cells in 1998, "The induced cells do all the things embryonic stem cells do." Additionally, he stated iPS cells "meet the defining criteria" for embryonic stem cells "with the significant exception that the iPS cells are not derived from embryos."

Do we know whether iPS cells or embryonic stem cells will be better for research? Yes – there are three reasons that iPS cells are better for research. First, patient-specific iPS cells are available now. Direct reprogramming is the only way to obtain patient-specific stem cells for research on human genetic diseases. Second, iPS cells are easier to produce than embryonic stem cells and do not require access to a fertility clinic. Third, iPS cells will have much simpler regulatory requirements since they don't require human embryos or eggs, and are fully eligible for NIH funding.

Do we know whether iPS cells or embryonic stem cells will be better for therapies? Neither iPS cells nor embryonic stem cells are currently being used in human clinical trials. However, once the science has progressed to that point, there are two main reasons why iPS cells will most likely be better for therapies. First, iPS cells are patient specific, overcoming the huge problem of tissue rejection that is seen with embryonic stem cells. Second, iPS cells do not require human eggs, making it possible to develop therapies without risking the life and health of women who may donate their eggs.

The money earmarked for stem cell research in Maryland should be invested in research that is both morally acceptable and most medically promising. That designation now falls to iPS cell research because of its scientific and ethical advantages, as well as its therapeutic potential. The state should act to direct funds to this noteworthy and promising branch of stem cell research, and to exit the ethical quagmire it entered when it began to invest state tax dollars in the destruction of human embryos.

Unfortunately, Maryland established a funding source for stem cell research in which the funding of ethical types of stem cell research (adult, umbilical cord, amniotic fluid, and now iPS cells) is inextricably entwined with the funding of unethical types of stem cell research (embryonic). Until legislation can be introduced to modify the conditions of the Maryland Stem Cell Research Fund to eliminate funding embryonic stem cell research, we can't support appropriating money for the Maryland Stem Cell Research Fund. Additionally, since the most promising type of stem cell research, research using iPS cells, is now fully eligible for federal funding, there is no need to spend scarce state dollars on funding stem cell research. We urge the elimination of the \$23 million appropriated for the Maryland Stem Cell Research Fund.