MISSOURI RIGHT TO LIFE

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Affiliated with the National Right to Life Committee

MEMORANDUM

TO: Honorable Members of the Missouri General Assembly

FROM: Gerard Nieters, Legislative Director
Pam Fichter, President

DATE: June 16, 2010

RE: Opposition to Economic Development Tax Incentives for Life Sciences Research Companies with no Pro-Life Protective Language
For Example: The "Jobs Manufacturing Act"

As a special session is rumored, Missouri Right to Life would like to clarify our position on economic development issues. This position was stated during the 2010 Legislative Session and should come as no surprise.

Missouri Right to Life (MRL) opposes any legislation that reinstates certain tax credits for certain research and development expenses, including tax credits for work in the fields of life sciences, biology and pharmaceuticals without restrictions, because that work could include embryonic stem cell research or even fetal research. Missouri Right to Life opposes any legislation that includes tax credits for life sciences, biology and pharmaceutical research without pro-life protective language.

The section in HCS HB 1675 that came into question during the legislative session is 620.1039. The issue that opens up the concern is the NAICS definitions and industries allowed to receive state monies or tax credits.

Per the 1997 NAICS Definitions, you will find the pro-life concerns on pgs 19 & 20. The NAICS codes of concern are under the numerical category of 5417, 54171 and 541710. (Note: the 1997 NAICS Codes were copied and given to you during the 2010 Legislative Session on February 16, 2010.)

You will once again find attached an article written by Dr. David Prentice, Senior Fellow for Life Sciences at the Family Research Council, that explains the necessity for clear definitions when delving into benefits for life sciences research.

One of the principal ways that cloning firms and institutions will make money consists of using cloning to establish lines of human embryonic stem cells on which various drug formulas may be tested. In fact, the Wisconsin scientist who invented the process that keeps human stem cells alive in cultures, James Thomson, has formed at least one

company to do exactly that. As was reported in *The Capital Times* of Madison Wisconsin in 2007, "The [company] is growing stem cells into adult heart cells that could make the testing of experimental drugs safer and more efficient." (The Madison Times, Feb. 7, 2007.) The news article went on to report, "[T]he research faces intense opposition from some social conservatives because days-old human embryos are destroyed as scientists extract the cells. Critics argue it is unethical to destroy human life in the name of science."

James Thomson may be an eminent scientist, but no one, whether a scientist, businessman, or abortionist, should have a license to kill innocent human beings. Nor should the State of Missouri give tax credits to research institutions who sponsor the killing of human beings in order to obtain stem cells for pharmaceutical research.

The U. S. Food and Drug Administration (FDA) says that the development of any new drug now requires at least $500 million and 8½ years of testing. See its summary, "FDA and the Drug Development Process: How the Agency Ensures That Drugs are Safe and Effective," February, 2002, p. 1 (http://www.fda.gov/opacom/factsheets/justthefacts/17drgdev.html). A large part of the cost arises from the requirement to test potential drugs on at least two different species of animals. FDA, "The New Drug Development Process: Pre-Clinical Research," on-line at http://www.fda.gov/cder/handbook/. Animal tests require acquiring and caring for live animals during the testing. Moreover, animal tests are not very satisfactory for some drugs. Testing potential pharmaceuticals on batches of human tissue cells, such as heart cells, would give more accurate and quicker results than animal studies. And because the FDA has moved on this by recently approving the first human trials of human embryonic stem cell research by the Geron Corporation; the destruction of innocent human life in the creation of pharmaceuticals is no longer a hypothetical but is a reality.

The National Institutes of Health has described how embryonic stem cells can be used in the testing of drugs. It says that human embryonic stem cells can "provide material for testing that may improve the safety and efficacy of human drugs. For example, new drugs are not generally tested on human heart cells because no human heart cell lines exist. Instead, researchers rely on animal models. Because of important . . . differences between animal and human hearts, however, drugs that are toxic to the human heart have occasionally entered clinical trials [tests on humans], sometimes resulting in death. Human ES cell-derived heart cells may be extremely valuable in identifying such drugs before they are used in clinical trials, ..." NIH, Regenerative Medicine 2006, Chap. 1, "Embryonic Stem Cells," page 4 (citations and table omitted) (http://stemcells.nih.gov/info/scireport/2006report.htm). It is not just human heart cells, but many types of human cells, that are expected to be produced by taking stem cells from human embryos. Id. Harvesting the stem cells, of course, kills the embryos.

The NIH does not explain why adult stem cells cannot be used for the purposes described, in light of the many ways that researchers have already proven they may be changed into other types of tissue cells. That possibility does not appear to be important to those who want to use embryonic stem cells.

Missouri Right to Life suggests three options of assuring that tax incentives are not given to companies that do life-destroying research:

First, MRL suggests that legislators consider language that does not use the NAICS codes to categorize businesses that will be eligible for tax incentives. The original language of HB 1675 did not include the NAICS Classification system and MRL took no position on that bill because it was specifically focused on the Ford Plant in Kansas City/Claycomo.

Second, if the legislation includes funding of NAICS code industries, MRL suggests specifically identifying those NAICS industries eligible for tax incentives and those industries should not include categories 5417, 54171 and 541710. This was done on numerous pieces of legislation during the 2010 legislative session when dealing with economic development issues. This clarifies whether tax incentives would go to life sciences research companies and where pro-life protections are necessary.

Third, if the legislation provides tax credits for the problematic NAICS categories, MRL suggests that you add the following pro-life protective language to any economic development bill that the legislature may consider during a called special session.

"It is not the intent of any section of this bill to give any tax incentives to a research company that does research as defined by Article III, section 38 (d) of the Missouri Constitution and this bill shall be subject to the provisions of section 196.1127."

Without this language or any of these protections, Missouri Right to Life is opposed to any Economic Development legislation. MRL will record all actions on this issue. We hope you will choose to protect innocent human beings with your votes.

Attachment: Dr. David Prentice Article, Family Research Council

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Proceed Cautiously When Funding New Technologies

Definitions can help protect life or can promote unethical practices

David Prentice, Ph.D. February 2010

Science and technology keep bringing us exciting new discoveries. Hardly a day goes by without a news story of the latest breakthrough, and promises of wonderful outcomes. But when funding initiatives in science and technology, taxpayers need to pay attention to how new technologies are defined, and whether protections for all human life are incorporated.

The citizens of Missouri are no strangers to "definition manipulation" — the debate on Amendment 2 in 2006 was really about the definition of "cloning." Amendment 2 claimed to ban human cloning, but redefined cloning as putting the cloned embryo into the womb and gestating it. However, the recognized scientific definition of cloning of a new organism (termed "somatic cell nuclear transfer") is technically completed once the single-celled embryo is formed; the cloned embryo can then be placed into a womb in an attempt at a born clone, or used for experiments in which the clone is destroyed. With the linguistic somersaults of Amendment 2, cloning is allowed but the clone must be destroyed by law to fit the newly minted definition.

The Missouri legislature is now considering funding for areas of science and technology investigation. Science and innovation funding can encompass many areas, including "biology", "biochemistry", and "biotechnology." These areas as broadly defined can include areas of concern, in particular involving research with embryos, embryonic stem cells, and cloning.

Other areas of particular focus for potential funding include "nanotechnology" and "biomaterials." In these cases, definitions as well as limits are particularly important to focus the research on ethical methods and ethical ends. Generally, nanotechnology would be the study of sub-microscopic particles (smaller than the size of a single cell). In the biological realm, such research may have valuable applications for diagnosis or drug delivery. But nanotechnology can also be used in the growth or tracking of stem cells. And the question then becomes, which stem cell — ethically challenged embryonic stem cells, or adult stem cells? For example, nanoparticles have been used to mark bone marrow adult stem cells, and show that they can indeed transform into heart cells.[1] But nanotechnology can also be used in the growth of human embryonic stem cells,[2] or even for growing embryos in the laboratory.[3]

Likewise, biomaterials in general would be defined as nonliving materials, whether derived from living or nonliving sources, and would normally include areas such as construction of artificial joints, cartilage for scaffolding, and other structural support, etc. And again, they can be used in conjunction with stem cells, raising the same question as before. For example, biomaterials can be targeted for valuable research, such as stimulating repair of spinal cord injury by encouraging the body's own cells to regenerate.[4] But again, biomaterials can be used in human embryonic stem cell research, for the growth and selection of the embryonic stem cells.[5]

In the end, the only way to protect human life from unethical research with certainty is to specifically and narrowly define the areas of investigation that receive funding, or specifically to prohibit unethical uses of the technology.

(Endnotes)

1 Rota M *et al*, Bone marrow cells adopt the cardiomyogenic fate *in vivo*, *Proceedings of the National Academy of Sciences USA* 104, 17783-17788, November 6, 2007

2 Salli U *et al*, Propagation of undifferentiated human embryonic stem cells with nano-liposomal ceramide, *Stem Cells and Development* 18, 55-66, February 2009

3 Urbanski JP *et al*, Noninvasive Metabolic Profiling Using Microfluidics for Analysis of Single Preimplantation Embryos, Analytical Chemistry 80, 6500–6507, 2008

4 Researcher finds natural hydrogel helps heal spinal cord, September 17, 2009, http://www.physorg.com/news172404620.html

5 Chayosumrit M et al., Alginate microcapsule for propagation and directed differentiation of hESCs to definitive endoderm, Biomaterials 31, 505-514, January, 2010

Dr. David Prentice is Senior Fellow for Life Sciences at Family Research Council. Until July 2004, he had spent almost 20 years as Professor of Life Sciences, Indiana State University, and Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine.