

Stem Cell Research and Human Cloning

This outline is available for download at www.RespectLifeMissouri.org

Welcome & Opening Prayer for Life

Facilitator opens meeting with a “thank you” to all who have attended, introduction of new members, and a prayer. It is important that all participants feel welcomed and participate within their own comfort level.

Opening Prayer

Lord God, you lovingly knit us in our mothers' womb. Grant that each human embryo will be respected as a human being, and not dismissed as a product to be manipulated or destroyed.

Grant us the courage and conviction to be your voice for our sisters and brothers at the very earliest stages of their development, and for all defenseless unborn children.

Jesus, Divine Healer, foster in those conducting medical research a commitment to finding cures in ways that respect these little ones and all your vulnerable children.

Holy Spirit, grant us the wisdom to develop morally sound treatments for conditions now thought to be incurable. Help us persevere in defending human life while alleviating suffering.

Show mercy to all who have cooperated in killing our tiniest brothers and sisters. Bring them and all who support destructive embryo research to true conversion. Grant them the ability to see the immeasurable dignity of all human beings even in the first days of life.

Father, we ask this in Jesus' name, through the Holy Spirit. Amen.

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Presentation – Stem Cell Research & Human Cloning

NOTE: The Powerpoint presentation is available online for download.

- ❖ The presentation file has been updated into the same PDF format as this session outline so it should be just as easy to access. If no laptop/projector is available, a printout of individual slides can also be copied/printed and used as both a presentation and as a handout for participant notes.
- ❖ The content in the slide presentation is designed to be straight-forward but also to allow flexibility.
- ❖ The comprehensive nature of the written facilitator notes below has been provided to allow for diversity among groups, for an extended and on-going education, and for later reference on the topic. **Therefore, it is possible that all the content included in the facilitator notes will *not* be covered in a single session. Please review the information below for each slide and then create a presentation that is your own based on the needs of your particular group.**
- ❖ If necessary, the Respect Life Office can answer any questions or provide guidance on any topics in the slide deck. Please contact the Respect Life Office at (816) 756-1850 or francis@dioceskcjsi.org if you cannot access the on-line files.

Slide 1 Introduction Stem Cell Research & Human Cloning

Slide 2 Cartoon -- St. Peter and Embryonic Stem Cell Research

Slide 3 Topics for Discussion

- Clarify the scientific and moral definition of “ cloning ”

- Discuss the facts about stem cells, therapies, and cures
- Learn the truth about the Church's position on stem cells
- Reveal typical rhetoric surrounding stem cell research

Slide 4 Hierarchy of Stem Cells

A stem cell is a relatively unspecialized cell that, when it divides, can do two things: make another cell like itself, or make any of a number of cells with more specialized functions. For example, just one kind of stem cell in our blood can make new red blood cells, or white blood cells, or other kinds—depending on what the body needs. These cells are like the stem of a plant that spreads out in different directions as it grows.

In humans, there are two broad types of stem cells: embryonic stem cells that are isolated from the inner cell mass of 5-7 day old embryos called blastocysts, and adult stem cells that are found in various tissues. In adult organisms, stem cells and progenitor cells act as a repair system for the body, replenished in adult tissues. In a developing embryo, stem cells can differentiate into all the specialized cells, but also maintain the normal turnover of regenerative organs, such as blood, skin, or intestinal tissues.

At different stages of development, stem cells are named differently:

- Totipotent –able to develop as a complete embryo, producing all the parts of the embryo and the support structures of the pregnancy such as the amniotic sac and the placenta
- Pluripotent – able to produce all f the over 2300 cells of the body but not the support structures.
- Multipotent – able to produce many, but not all cell types

Slide 5 Embryonic Stem Cells & Human Cloning

As you probably know, the United States and many other nations are currently struggling with two really big bioethical issues -- *human embryonic stem cell research and human cloning.*

Embryonic stem cells are derived from human embryos. Their use is controversial because, unfortunately, such stem cells cannot be harvested without destroying the living embryo.

How are Embryonic Stem Cells obtained?

Embryonic stem cells are harvested from 5-7 day old embryo (*blastocyst*). At this stage, the embryo is comprised of an outer ring of cells called the *trophoblast*, which forms the amniotic sac and placenta, and the inner stem cells, which forms the body of the human. These stem cells are separated from the trophoblast, killing the embryo, and then preserved and grown as a stem cell line for research.

How is this related to Human Cloning?

The process used for embryonic stem cell research is the same process used in human cloning because cloning creates a human embryo without the natural process of fertilization. With fertilization, the 23 chromosomes in the sperm unite with the 23 chromosomes in the egg to form a new human being with 46 chromosomes. With cloning, or somatic cell nuclear transfer (SCNT), no sperm is used.

1. The nucleus (23 chromosomes) from an egg is removed, creating an empty egg.
2. The nucleus from a somatic cell (any body tissue cell with 46 chromosomes) is removed and inserted into the empty egg. Therefore, instead of getting 23 chromosomes each from the sperm and from the egg, all 46 chromosomes in this egg come from the donor's tissue cell, therefore a genetic clone.
3. The egg is then stimulated to divide.

As you can see in the slide diagram, the only difference between “therapeutic” cloning where the embryo is destroyed and the embryonic stem cells are used to grow tissue in the lab and “reproductive” cloning where the somatic cells that are inserted into the embryonic stem cells are implanted into a womb, is what is done with the new human life that is created. “Therapeutic cloning involves producing human embryos solely to be destroyed so their stem cells can be used for research. “Reproductive” cloning involves producing embryos to implant in a womb to achieve a live birth.

Pope John Paul II told us back in 1995 in *Evangelium Vitae* (The Gospel of Life), “*Today, some seek ways to alleviate human diseases through research that involves the deliberate destruction of human embryos. Such research, it is claimed, will enhance human life, when in actuality it “reduces human life to the level of simple ‘biological material’ to be freely disposed of”.* Often these embryos that are targeted for experimentation were created in laboratories by *in vitro* fertilization in attempts to assist couples struggling with infertility. Such efforts, however, embrace the manufacturing of human life without considering the consequences, including the many ethical dilemmas resulting from such misuse of scientific technology.

The simple fact is that harvesting embryonic stem cells kills the living human embryo and the Church opposes the direct destruction of innocent human life for any purpose, including research.

Recent history of ban on federal funding for embryonic stem cell research

Because embryonic stem cell research involves the destruction of the embryos from whom stem cells are harvested, federal funding for it was banned by an act of Congress in the 1990's. The Department of Health and Human Services under President Clinton, however, reinterpreted the provisions of that act to permit the funding of research using stem cells harvested from embryos destroyed with private money. When President Bush came into office in 2001, he was faced with a decision whether to uphold the ban as originally understood or stick with the Clinton Administration's interpretation. In August, after a period of deliberation marked by intense lobbying and public relations campaigns by both sides, the president announced that he would not permit funding of research involving stem cells harvested from embryos destroyed in the future; he would, however, permit continued funding of research on existing cell lines derived from embryos from which stem cells had already been harvested.

Some people hailed the president's decision as a principled compromise that maintained the norm against deliberate embryo destruction but allowed funding for research to continue where the embryos from which stem cells had been harvested were already dead and could not be restored to life. Other people on both sides of the question were, however, disappointed. Those in favor of embryonic research argued that too few good cell lines existed to enable scientists to fulfill what they asserted was the enormous and unique promise of embryonic stem cell research. As a result, they contended, many people would continue to suffer from horrible diseases that might be cured, or whose painful and damaging effects might be mitigated, by therapies and technologies deriving from embryonic stem cell research. People on the other side, while approving the president's ban on funding of research involving further embryo destruction, disagreed with his permission of funding for research on existing cell lines. They worried that this might down the line lead to further embryo killing; some went further, arguing that just as it would be wrong to make use of knowledge derived by unethical experimentation by German scientists in the Nazi period, it is unjust for people to make research use of material derived from the destruction of embryonic human beings.

Slide 6 Is the Embryo a Human Being?

When a human life comes into physical existence is a matter of science, not theology. Human embryology clearly reveals that every human life begins at fertilization (conception). At fertilization the egg and sperm, each having 23 chromosomes, unite and form a one-cell embryo called a zygote. The zygote has 46 chromosomes and is genetically distinct from either parent. According to medical embryology texts, human embryologists, medical dictionaries, and medical experts, the zygote is the beginning of a new human life.

It is illegitimate to deny dignity and a right to life on the basis of age, size, stage of development, or condition of dependency, just as it is illegitimate to deny dignity and a right to life based on race, sex, ethnicity, or any other morally irrelevant factor. Because human beings in the embryonic, fetal, and infant stages do not differ in kind from more mature human beings, but differ only in such morally irrelevant factors as age, size, stage of development, and condition of dependency, they are equally entitled to legal protection and may not legitimately be reduced to the status of mere means to benefit others.

"Although most developmental changes occur during the embryonic and fetal periods, some important changes occur during later periods of development: infancy, childhood, adolescence, and adulthood. Although it is customary to divide human development into prenatal and postnatal periods, birth is merely a dramatic event during development resulting in a change in environment. Development does not start or stop at birth."

Moore, Keith L. and Persaud, T.V.N. *The Developing Human: Clinically Oriented Embryology*. 6th ed. Philadelphia: W.B. Saunders Co, 1998.

Slide 7 Clinical Issues with Embryonic Stem Cells

What is truly remarkable is that embryonic stem cells have never treated a human patient, and clinical testing in animals suggests that although embryonic cells function normally in an embryo, they are too genetically unstable and too likely to form lethal tumors in adult cells to be used for treatment any time soon.

Another problem is that the adult body's immune system rejects embryonic stem cells as foreign matter. This is one of the primary reasons scientists want to create cloned embryos. Cloned embryos would be a nearly identical genetic match to the donor, thus reducing the likelihood of the donor/recipient's body rejecting the cells.

Years ago it was said that stem cells from embryos would be the most useful because they are so fast-growing and versatile, able to make virtually any kind of cell. But those advantages become disadvantages when these cells make tumors, creating a condition worse than the disease.

Yet many supporters remain wedded to this approach, having invested a great deal of money and effort and hoping they can still make it work. This kind of exaggerated "promise" has misled researchers and patient groups before—most obviously in the case of fetal tissue from abortions, which in the 1990s was said to promise miracle cures but has produced nothing of the kind.

Slide 8 277 Embryos Destroyed = 1 Cloned Sheep

When, to international fanfare, Dolly the sheep was born on July 5, 1996 to three mothers (one provided the egg, another the DNA and a third carried the cloned embryo to term), the nucleus of a somatic cell of an adult ewe was transferred to a sheep ovum (or oocyte) whose nucleus had been removed. Electrofusion was then employed to produce a distinct, new organism possessing the genome of the original ewe, Dolly. This organism developed from the embryonic, through the fetal and other stages of her development as an otherwise ordinary sheep, and into adulthood. However, it took the destruction of 277 oocytes (embryos) before the somatic cell from Dolly was successfully created.

Therefore, any attempt to clone a human being would constitute an unethical experiment upon the resulting child-to-be. In animal experiments, fewer than two to three percent of all cloning attempts succeeded. Not only are there fetal deaths and stillborn infants, but many of the so-called 'successes' are in fact failures. As has only recently become clear, there is a very high incidence of major disabilities and deformities in cloned animals that attain live birth. Cloned cows often have heart and lung problems; cloned mice later develop pathological obesity; other live-born cloned animals fail to reach normal developmental milestones. Dolly the sheep was diagnosed with a severe and premature arthritis.

Slide 9 What if the Embryo Will Die Anyway?

In the end we will all die anyway, but that gives no one a right to kill us. In the case of embryonic stem cell research, the embryos will not die because they are inherently unable to survive, but because others are choosing to hand them over for destructive research instead of letting them implant in their mother's womb. One wrong choice does not justify an additional wrong choice to kill them for research, much less a choice to make taxpayers support such destruction. The idea of experimenting on human beings because they may die anyway also poses a grave threat to convicted prisoners, terminally ill patients, and others.

If we justify the use of fertility clinic embryos (produced in vitro fertilization) that are no longer wanted by their parents because they will be discarded anyway, should our society allow lethal experimentation on unborn babies scheduled to be aborted? How about terminally ill persons or death row inmates who are about to die? Our society rightly recognizes that just because these humans will otherwise die soon it does not justify doing lethal experiments on them.

Slide 10 Adult Stem Cells

Other sources of stem cells are available, however, and can be harvested from umbilical cord blood as well as from fat, bone marrow, and other adult tissue without harm to the donor. An enormous amount of research involving adult stem cells is currently going on in laboratories in the United States. This research is ethically uncontroversial and has generated a number of exciting discoveries on the therapeutic front.

For many therapeutic purposes, adult stem cells are superior to embryonic stem cells because of their comparative stability and the lack of tumor development.

Adult stem cells save lives now and because they usually come from your own body, immune rejection is not a problem.

Over 50,000 adult stem cell transplants are done each year around the globe, with approximately 57% using the patient's own adult stem cells, and 43% using donor adult stem cells. Adult stem cell transplants are also moving beyond cancer treatments to published success treating patients for spinal cord injury, multiple sclerosis, heart damage, and many other conditions.

Each year more than 35,000 Americans with life threatening illnesses find themselves in need of a stem cell transplant. Cord blood (umbilical cord) stem cells have been playing an increasing role in filling that need and have been offering potential treatment options for many conditions that have no cure today. Cord blood has been used in more than 14,000 transplants worldwide during the last 20 years to treat many life-threatening diseases, such as leukemia and other cancers. Today, cord blood is showing great promise for use in regenerative medicine applications, including treatment for juvenile diabetes, brain injury, cerebral palsy, and hearing loss.

Thousands of lives have been saved by adult stem cells—most often in the form of “bone marrow transplants” for leukemia and other conditions. Today, adult stem cells have been used to help people with Parkinson's disease, spinal cord injury, juvenile diabetes, lupus, multiple sclerosis, sickle-cell anemia, heart damage, corneal damage, and dozens of other conditions. The danger is that this progress toward cures will be halted or slowed by campaigns that divert attention and resources toward embryonic stem cell research.

Slide 11 Regenerative Tissue Developed from Each of the Following Types of Adult Stem Cells...

These are just some of the specific types of tissue that have been regenerated using each of the different types of adult stem cells listed.

Slide 12 Cartoon – Embryonic Stem Cells Left Out Too Long

Slide 13 So, Why Are We Still Having This Debate?

The truth is organizations with a long-term business strategic are investing in adult stem cell research. Most supporters of embryonic stem cell research are not clinicians, but rather academics who desire government funding to keep their research projects alive or to retain tenure, heavily government-funded laboratories looking to take advantage of the marketing opportunity to generate short-term profit for shareholders, politicians who need to appease these constituencies, and any number of uninformed groups of celebrities and other public figures. That is one reason so much money was poured into passing Amendment 2 in Missouri in 2006, so tax dollars could be made available to ensure embryonic stem cell research continued. Without these tax dollars, the only researchers who would be left would be private companies and physicians who were curing people with adult stem cells—including people with diseases and nerve and spinal cord injuries like a number of well-publicized ill-informed celebrities, some of whom have tragically died of their injuries while naively campaigning for embryonic stem cell research.

Slide 14 Local Politics of Embryonic Stem Cell Research

Amendment 2

Missouri Amendment 2 was an amendment to the Missouri Constitution that was approved on November 7, 2006 by a vote of 51% to 49%, that legalized certain forms of embryonic stem cell research in the state. According to most people who truly understand it, Amendment 2 allows Missouri's stem cell researchers to conduct any research permitted under federal law without any interference from the state legislature.

However, the wording in the amendment was drafted to redefine “cloning” to occur at implantation, not at fertilization. This play on words allowed the proponents of Amendment 2 to claim that the legislation “does not allow human cloning” because the embryos are created and destroyed in the lab and never implanted into a woman's uterus.

Statement from Cathy Ruse, chief spokesperson, Missourians Against Human Cloning, on the amount of money spent by forces pushing the passage of Constitutional Amendment 2 prior to the ballot vote

October 17, 2006 (ST. LOUIS) Already the biotech special interests behind the deception that is Amendment 2 have spent \$30 million; it's an attempt to buy an amendment to the Missouri Constitution. They've spent such enormous money because Amendment 2 is an attempt to deceive the people of Missouri into actually writing the practice of human cloning into the Missouri Constitution. Amendment 2 is a deception, page one says it bans human cloning, but the fine print later on reveals it allows for “Somatic Cell Nuclear Transfer,” which is the scientific definition for cloning and the very method used for cloning Dolly the Sheep. Amendment 2 is really a cloning amendment. The biotech special interests have committed to spending whatever it takes because the amendment is so deceptive, the smoking gun language that proves it's actually a cloning amendment won't be on the ballot which just has a summary. In reality, Amendment 2 is actually five pages long but the public will not get to see all the fine print on the ballot.

“National Catholic Reporter Misleads Readers on Embryonic Stem Cell Research” by Jack Smith, Executive Editor of the Diocese of Kansas City – St. Joseph Catholic Key, July 6, 2010

Bill Tammeus has written a column over at NCR titled “It's easy to be misled on stem cell research,” and he proves the point pretty well himself. It's hard to tell though whether he's misled or intending to mislead. At any rate, certainly his editors know he's factually incorrect.

Tammeus is a Presbyterian who is concerned that the Catholic Church has an imprecise understanding of Somatic Cell Nuclear Transfer (SCNT) or cloning as it is known throughout the entire world except for the Greater Kansas City media market. This imprecise understanding has led to an unjustified moral condemnation of SCNT by the Catholic Church, according to Tammeus. So he endeavors to explain the science for us poorly informed Catholics. This is so bad, I have to go line by line.

Tammeus explains that SCNT produces something he calls “early stem cells”. These are cells “which unfortunately, imprecisely and thus misleadingly are usually called embryonic stem cells,” he says.

Let's consult the National Institutes of Health stem cell information center:

Somatic cell nuclear transfer (SCNT)—A technique that combines an enucleated egg and the nucleus of a somatic cell to make an embryo. *Strike one.*

Tammeus again:

"I've been writing about stem cell research for much of the last decade, so I know that research using adult stem cells has been going on for more than 50 years. By contrast, the first report of early human stem cells produced by somatic cell nuclear transfer (SCNT) was not published until 2004."

That study would be "*Evidence of a pluripotent human embryonic stem cell line derived from a cloned blastocyst*" by Woo Suk Hwang, et. al. Notice that the scientist does not think it imprecise or misleading to use the term "embryonic stem cells" to describe what he's working on, nor does he flinch from saying such cells were derived from a cloned (SCNT) blastocyst, i.e., a "pre-implantation embryo of about 150 cells," again as defined by the National Institutes of Health's stem cell page.

But now the irony of Tammeus' referencing this study gets even deeper. That study and a subsequent study in which Hwang claimed to have derived stem cell lines from cloned blastocysts were both retracted by *Science* magazine and Hwang was dismissed from Seoul National University. Reviews of his work found that Hwang had not in fact derived any stem cell lines from cloned blastocysts.

Tammeus continues following immediately on the last quote:

"So it's not surprising that some effective therapies that use adult stem cells exist while many therapies using early SCNT stem cells still are in development."

Let's look at the words "some" and "many" – because the words to substitute if Tammeus' quote were to be factual are "many" and "zero". There are more than 70 treatments and therapies for diseases derived from adult stem cell research. There are absolutely ZERO therapies or treatments in development using stem cells derived from SCNT. That's because to date there have been no stem cells lines derived from human SCNT for anybody to be working on.

Furthermore, SCNT for therapeutic purposes has been virtually abandoned as a research model because of newer discoveries like Induced Pluripotent Stem Cells which are derived from somatic cells without the need for an egg.

I could go on and on through the rest of Tammeus' piece. Bill Tammeus is a fine writer in his field and I've enjoyed his work at the Kansas City Star over the years, but he doesn't know the first thing about the science he's trying to explain to us poor Catholics here.

The science of embryonic stem cell research is something that is extremely distorted specifically in the minds of Kansas Citians because of the political manipulation of the Stowers Institute of Medical Research which needed to create that confusion in order to get Missourians to allow them to try therapeutic cloning. It's pretty clear Tammeus got his misinformation from them as he even quotes their CEO.

I think it's fair for him and many other Kansas Citians to be confused. What's not fair is for the National Catholic Reporter's editors to give space for what they certainly know is false information.

Evangelization/Catechesis

Slide 15 ***"Whoa...Whoa...Whoa...Hold it Right There!"***

Three incorrect statements about Catholic views on stem cell research that are often used to try to discredit the Church...

1. The Church is opposed to stem cell research.
Most current stem cell research uses cells obtained from adult tissue, umbilical cord blood, and other sources that pose no moral problem at all and the Church strongly supports this type of stem cell research. Furthermore, these adult stem cells are the only type of stem cells that are currently being used to treat a wide variety of diseases so the Church's opposition to stem cell research is limited only to the unproductive research being done on embryonic stem cells that serves only to kill human life and not to cure diseases.
2. The Church is telling us to choose the lives of embryos over the lives of suffering patients.
The Church calls us to respect both, without discrimination. We must help those who are suffering, but we must not use this good end to justify an evil means. Moreover, treatments that do not require the destruction of human life are already being used to treat many diseases and injuries and are more promising in the new treatment of additional conditions than any current approach using embryonic stem cells. The choice is not between science and ethics, but between science that is ethically responsible and science that is not.
3. The Catholic Church is standing in the way of cures and medical advances that everyone else wants.

Serious moral concerns about embryonic stem cell research and human cloning have been raised by a number of groups, both religious and secular, including some that even strongly disagree with the Church on the topic of abortion. The current human cloning ban supported by the Church was approved by the House of Representatives by an overwhelming bipartisan majority. Many other countries, including Canada, France, Australia, Germany, and Norway, have passed similar bans. Opposition to the idea of treating early human life as an object in the laboratory transcends religious and political divisions.

Slide 16 It's Unanimous!

"It is immoral to produce human embryos intended for exploitation as disposable biological material...such manipulations are contrary to the personal dignity of the human being and his integrity and identity which are unique and unrepeatable."

2275 Catechism of the Catholic Church

"The body of a human being, from the very first stages of its existence, can never be reduced merely to a group of cells. The embryonic human body develops progressively according to a well-defined program with its proper finality, as is apparent in the birth of every baby."

Congregation for the Doctrine of the Faith, *Dignitas Personae*, 2008

"...discoveries in this field invite man to a deeper awareness of the weighty responsibilities involved in their application, and under no circumstances may a human being be manipulated or treated as a mere instrument for experimentation...the destruction of human embryos, whether to acquire stem-cells or for any other purpose, contradicts the purported intent of researchers, legislators and public health officials to promote human welfare."

Pope Benedict XVI, 2005

"The human being is to be respected and treated as a person from the moment of conception; and therefore from that same moment his rights as a person must be recognized, among which in the first place is the inviolable right of every innocent human being to life. "

Pope John Paul II, *Evangelium Vitae*, 1995

"From the time that the ovum is fertilized, a new life is begun which is neither that of the father nor of the mother; it is rather the life of a new human being with his own growth. It would never be made human if it were not human already."

Congregation for the Doctrine of the Faith, *Donum Vitae* (The Gift of Life), 1987

Slide 17 Legal Experimentation on "Non-Persons"

A large number of ignoble human experiments were performed on large numbers of prisoners by the Nazi German regime in its concentration camps mainly in the early 1940s, during World War II and the Holocaust. Prisoners were coerced into participating; they did not willingly volunteer and there was never informed consent. Typically, the experiments resulted in death, disfigurement or permanent disability, and as such can be considered as examples of medical torture.

At Auschwitz and other camps, under the direction of Dr. Eduard Wirths, selected inmates were subjected to various hazardous experiments which were supposedly designed to help German military personnel in combat situations, develop new weapons, aid in the recovery of military personnel that had been injured, and to advance the racial ideology backed by the Third Reich. Dr. Aribert Heim conducted similar medical experiments at Mauthausen.

Experiments included...

1. Testing on twins where one was poisoned, tortured, or had other medical experiments performed and then both twins were killed and autopsies immediately done to compare the physiological impacts of the experiments on the "treated" twin to those of the normal untreated twin.
2. Bone, muscle, and nerve transplantation experiments conducted at the Ravensbrück concentration camp, for the benefit of the German Armed Forces, to study bone, muscle, and nerve regeneration, and bone transplantation from one person to another. Sections of bones, muscles, and nerves were removed from the subjects without use of anesthesia. As a result of these operations, many victims suffered intense agony, mutilation, and permanent disability.
3. Head injury experiments in which young children were strapped to chairs and a mechanized hammer came down from above every few seconds upon their head.
4. Freezing experiments conducted with the intent of discovering means to prevent and treat hypothermia. One study forced subjects to endure a tank of ice water for up to five hours.
5. Malaria experiments to investigate immunization for treatment of malaria. Healthy inmates were infected by mosquitoes or by injections of extracts of the mucous glands of female mosquitoes. After contracting the

- disease, the subjects were treated with various drugs to test their relative efficiency. Over 1,000 people were used in these experiments, and of those, more than half died as a result.
6. Mustard gas experiments to investigate the most effective treatment of wounds caused by mustard gas. Test subjects were deliberately exposed to mustard gas which inflicted severe chemical burns. The victims' wounds were then tested to find the most effective treatment for the mustard gas burns.
 7. Sulfonamide experiments in which wounds inflicted on the subjects were infected with bacteria such as *Streptococcus*, *Clostridium perfringens* (the causative agent in gas gangrene) and *Clostridium tetani*, the causative agent in tetanus. Circulation of blood was interrupted by tying off blood vessels at both ends of the wound to create a condition similar to that of a battlefield wound. Infection was aggravated by forcing wood shavings and ground glass into the wounds. The infection was treated with sulfonamide and other drugs to determine their effectiveness.
 8. Sea water experiments to study various methods of making sea water drinkable. At one point, a group of roughly 90 people were deprived of food and given nothing but sea water to drink, leaving them gravely injured. They were so dehydrated that others observed them licking freshly mopped floors in an attempt to get drinkable water.
 9. Sterilization experiments to develop a method which would be suitable for sterilizing millions of people with a minimum of time and effort. These experiments were conducted by means of X-ray, surgery and various drugs. Thousands of victims were sterilized. The radiation was administered through deception. Prisoners were brought into a room and asked to complete forms, which took two to three minutes. In this time, the radiation treatment was administered and, unknown to the prisoners, they were rendered completely sterile. Many suffered severe radiation burns.
 10. Poison was secretly administered to experimental subjects in their food. The victims died as a result of the poison or were killed immediately in order to perform autopsies.
 11. High altitude experiments to aid German pilots who had to eject at high altitudes. A low-pressure chamber containing these prisoners was used to simulate conditions at altitudes of up to 66,000 ft (most commercial airplanes fly at 30,000 ft.). It was rumored that operations were performed on the brains of live victims (vivisections) who survived the initial experiment. Of the 200 subjects, 80 died from the operations and the others were executed.

After the war, these crimes were tried at what became known as the Doctors' Trial, and revulsion at the abuses perpetrated led to the development of the Nuremberg Code of medical ethics.

Outreach Planning

Slide 18 What Can You Do?

Educate yourself on the Church's teaching about stem cell research

Dignitas Personae (December 14, 2008) – “The Dignity of the Person” is the name given to the instruction by the Congregation for the Doctrine of the Faith giving doctrinal directives on certain embryonic ethical controversies that had emerged since 1987, after *Donum Vitae* was released.

Evangelium Vitae (March 25, 1995) - "The Gospel of Life" is the name of the encyclical written by Pope John Paul II which expresses the position of the Catholic Church regarding the value and inviolability of human life.

Donum Vitae (February 22, 1987) – “The Gift of Life” is the name given to the instruction by the Congregation for the Doctrine of the Faith on “*Respect for Human Life in Its Origin and on the Dignity of Procreation*”. It addresses biomedical issues from the Roman Catholic Church's perspective.

Humanae Vitae (July 25, 1968) – “Of Human Life” is the name given the encyclical letter of His Holiness Paul VI on the regulation of birth.

Catechism of the Catholic Church - The official text of the teachings of the Catholic Church. A provisional, "reference text" was issued by Pope John Paul II on October 11, 1992, the 30th anniversary of the opening of the Second Vatican Ecumenical Council. The new Catechism was first published in 1994 in French and was then translated into many other languages.

Participate in the annual March for Life Pilgrimage to Washington DC

The 2014 March for Life Pilgrimage will be Monday, January 20 thru Thursday, January 23.

Support JPPI Institute Give Cures Campaign

Give Cures is the John Paul II Medical Research Institute's national gift campaign that raises funds to advance ethical, non-controversial, adult stem cell research for cures.

July is Cord Blood Awareness Month – spread the word!

Cord Blood Awareness Month is sponsored by a society of the American Hospital Association and strives to empower expectant parents to make an informed choice regarding their options to save their newborn's cord blood stem cells.

It is important for expectant parents to be aware of the potential value of cord blood stem cells and their options for saving it. Cord blood can only be collected immediately following birth, so parents should understand their choices and make a decision before their due date.

Contact your legislators

Remember, your efforts in contacting your elected officials do make a difference in securing protections for women and unborn babies! Federal elected officials use the following rule of thumb:

- Each phone call to the local office represents 10 other people with the same opinion;
- Each call to your Washington, D.C. office represents 50 people;
- Each email represents 100 people;
- Each letter represents 500 people; and...
- Each personal visit represents *1,000 people!!*

For more information on contacting your legislators, go to the Public Policy Advocacy web page at www.respectlifemissouri.org.

Slide 19 Eggsplotation

The infertility industry in the United States has grown to a multi-billion dollar business. What is its main commodity?
Human eggs.

Young women all over the world are solicited by ads—via college campus bulletin boards, social media, on-line classifieds—offering up to \$100,000 for their “donated” eggs, to “help make someone’s dream come true.”

- *Who is this egg donor?*
- *Is she treated justly?*
- *What are the short- and long-term risks to her health?*

The answers to these questions will disturb you.

According to the documentary, no one has researched the short- or long-term effects of egg donation. There are no laws, no medical records, no statistics and no documented information telling future donors about the potential health risks, the documentary says.

Produced by The Center for Bioethics and Culture (*Lines That Divide*, 2009), *Eggsplotation* spotlights the booming business of human eggs told through the tragic and revealing stories of real women who became involved and whose lives have been changed forever.

Calla, a woman interviewed in the movie, said she suffered a stroke, was pronounced legally dead twice and can no longer have biological children. She also did not produce enough eggs in the procedure, so she did not receive full payment.

Alexandra, another interviewee, explained that her ovaries became so enlarged she had to have surgery and will no longer be able to have children. Later on, she had breast cancer.

One woman described in the movie died. Jessica Grace Wing, 31, died from colon cancer because she decided to donate her eggs multiple times, the film reported.

The movie describes a short-term risk known as Ovarian Hyperstimulation Syndrome (OHSS). OHSS develops because of the hormones that women take that make them release up to dozens of eggs a month (instead of just one). Symptoms of OHSS are typically mild and include bloating, pain in the abdomen, weight gain and nausea. OHSS can be life-threatening, however, causing rapid weight gain, severe pain, shortness of breath and an increased heart rate.

There also are many women who developed reproductive cancer, according to the film. Researchers believe such cancer is linked to the amount of hormone pills and injections women receive to produce more eggs.

"*Eggsplotation*," which is 45 minutes long, may be purchased online at www.eggsplotation.com/

Slide 20 Summary

- Confirmed that science and morality agree on “ cloning ”
- Discussed the facts about stem cells, therapies, and cures
- Learned the Church’s true position on stem cells
- Exposed the rhetoric and politics of stem cell research

Closing Prayer

Slide 21 Prayer to End Embryonic Stem Cell Research

Dear Lord Jesus,

I offer to you my mind, my heart, and my prayers that the culture of death and its experimentation on your unborn children will cease.

I pledge to pray the rosary frequently for the safeguarding of embryonic human life.

I pledge to be an advocate for the dignity and respect due all human life.

Please send your Holy Spirit to enlighten, strengthen, and inspire me so that I may effectively defend your littlest ones.

Amen