Mr. SCOTT of Georgia. Well stated. Eloquent and very well stated. And you touched on so many important issues. The strain on our military; and the young lady was so poignant in that. And American people need to understand that, how much more can our military take? Every person, even when the issue was put forward when General Casey and General Abizaid came over here, our Armed Services Committee, I think you may have been on that committee, asked them: Do you need more troops? No, we don't need any more troops. That was just in November. And something changed just in about 30 or 50 days, for all of a sudden now it came.

And I want to thank the young lady for your statement. It was very well stated and hit all of the points right on the head in terms of the direction we need to go. And the American people are definitely in step with us.

Madam Speaker, I thank you for the time. Please remember this is our Blue Dog hour, and we appreciate the opportunity to talk.

REMOVAL OF NAME OF MEMBER AS COSPONSOR OF H. RES. 106

Mr. MOORE of Kansas. Madam Speaker, I ask unanimous consent to have my name removed as a cosponsor of House Resolution 106.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from Kansas?

There was no objection.

EMBRYONIC STEM CELL RESEARCH

The SPEAKER pro tempore. Under the Speaker's announced policy of January 18, 2007, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes.

Mr. BARTLETT of Maryland. Madam Speaker, I come to the floor this evening to talk about embryonic stem cells. With all of the pressing issues of global importance that our country and the Congress is dealing with, you might ask, why are you going the talk about embryonic stem cells this evening; why are you not talking about the potential for global warming and what that might hold in store for our world.

□ 1715

We might be talking about the pending energy crisis and the concept of peak oil, and certainly we might be talking about the war in Iraq and the funding resolution that will shortly come before the House. Or we could be talking about a very interesting subject: the debt limit ceiling and why we have to increase the debt limit ceiling and what is that and how does it relate to the debt and the deficit and so forth?

We come to the floor this evening to talk about stem cells because a stem cell bill will very shortly come up in the Senate, perhaps even this week. Very probably if not this week, next week. But to put this in context, we have got to go back to last year when there were two embryonic stem cell bills that came before the House and the Senate. One of those started in the House and was known as the Castle-DeGette bill. This was a bill that would permit Federal funding for cells taken from embryos that were surplus in the fertility clinics across the country, and I understand there may be as many as 400,000 surplus embryos that are now frozen in these fertility clinics. This would result in the death of the embryo, and a meaningful percentage of our population does not believe that it is appropriate to destroy one life in the hopes that you might help another. So although this bill got a positive vote in the House last year, it was nowhere near enough to override a presidential veto.

There was a second bill that was introduced. I introduced that second bill along with my friend Dr. GINGREY, and that bill garnered 273 votes in the House. You might say that is enough to win, but it was brought up under suspension, which means we need two-thirds majority, and that day that would have been 286 votes; so we failed by 13 votes to get the necessary majority, the two-thirds majority, to pass it.

Both of those bills were our bills, the Senate 2754 and the House bill 5526. And along with the Castle-DeGette bill and the alternative bill, which would not result in the destruction of embryos, our bill got 100 percent of the Senators. That is, 100 Senators voting for the bill. It is interesting that there were 63 Senators that voted for both of these bills. They included Senator ARLEN SPECTER, who introduced both of these bills in the Senate; and it also included Senators REID, HARKIN, KENNEDY, CLINTON, OBAMA, and SCHUMER. Those Senators voted for all of these bills.

We have now passed, essentially, the Castle-DeGette bill again in the House with 253 ayes and 174 noes, and that is nowhere near close to the number that it would take to override a presidential veto. And in the last Congress, the President vetoed the Castle-DeGette bill, and he has promised to and certainly will veto it this time should it get to his desk. This is the bill that the Senate will be voting on next week. So that is why we are on the floor today talking about this bill. By the way, our bill is 322, and it has been cosponsored so far by 34, truly bipartisan support for which I am very pleased.

I thought to begin this discussion of embryonic stem cells we might go back to the basic physiology of what we are talking about here. And the first chart I have here shows half of the reproductive tract in a woman. There is another half to this on the other side, a mirror image of this. Most things in our body are mirror images. Things like the liver are not and the stomach. We have two arms and two eyes, and the lady has two ovaducts and two ovaries and so forth. And this shows the stages of development of the embryo. And, of course, what we will be talking about is not what happens in the body but what happens in a petri dish in the laboratory. But the embryo goes through the same stages of development in the petri dish in the laboratory as it does in the ovaduct of the prospective mother.

Here we have the ovary, and it contains a very large number of primary cells, which when they develop will become ova. And once a month typically, every 4 weeks, typically, one of the ova matures and the little follicle then ruptures and the ovum comes out. And it is interesting that the ovary is not connected to the rest of the reproductive tract of the female. But there is a funnel-like thing, and we see only a part of the funnel here. This part and this part goes clearly around it. And it is called the infundibulum, and this process is called ovulation. The egg now is released from the mature follicle, and it is usually picked up by the infundibulum and directed into the ovaduct. On occasion it may not be and it may escape out into the body cavity or the celium, which simply means the cavity. And these sperm, millions of which were released in the uterus and they make their way into the fallopian tubes, and some of those sperm actually get out into the body cavity. And this egg that is not picked up by the infundibulum may be out of the body cavity and it may be fertilized by the sperm that gets there, and this is called an ectopic pregnancy. And it is very bad news for the mother and the embryo, and it has to be terminated with surgery. But usually, most of the time, the ovum is picked up by the fallopian tube and it begins its way down the fallopian tube.

Notice that fertilization takes place, and that is when the clock starts running, called DZero. Fertilization takes place well up into the ovaduct. And there is a several-day journey. You see them here, one, two, three, four, five, six, seven, eight, nine, on down. And the fertilized egg now is called a zygote, and it begins to divide. And here you see it is at a two-cell stage, and a little later we will have some charts that show what can happen at this two-cell stage and even later. But frequently these two cells will simply separate until you have two cells that look like the original one you started with here, and that is what we called identical twins. Then they will make their way down the fallopian tube together and implant in an interesting way in the uterus as we will see later. And then the two cells divide and develop into four cells and then the four cells into eight cells. And we will come back and talk about this eight-cell stage because that is the time at which some procedures are done in the petri dish which promise that we can get true embryonic stem cells from embryos without harming the embryo.

Well, the cell then goes on to divide beyond the eight-cell stage. And you

now have a morula, a ball of cells which may be a fairly large number of cells, maybe 100 or fewer cells. And then it goes on to divide into a very large number of cells, and that is the gastrula stage. The morula and the blastula and then on to the gastrula down here. The gastrula stage develops into three germ layers.

The next chart shows a little more clearly what is happening. And here it started with a zygote and it skipped all of the stages that we talked about here, the two-cell, four-cell, eight-cell stage and so forth. And it goes directly now down to the blastocyst and then on down to the gastrula. And then the gastrula, we see the three germ layers developing.

And notice that most of what we have here is not going to end up as an embryo. What is going to end up as an embryo is this little bit of material here, and the rest of it is going to end up as supporting tissue, the amnion and the chorion and the fetal contribution to the placenta and so forth. But at this stage, just about the time the egg is implanting, as you saw, and by ''implanting'' we mean it connects itself to the uterus, this cell is implanting at about the time that the three germ layers are developed.

From these three germ layers will develop all of the tissues of the body. These three germ layers are called the outer germ layer, or the ectoderm; the middle germ layer, or the mesoderm; and the inner germ layer, or the entoderm.

From the ectoderm develops our skin, the integumen, which is defined as an organ. It is about the biggest organ in the body, actually, and a very complex and interesting one. And then the brain and spinal cord all of our nervous system develops from the ectoderm.

From the mesoderm develops most of the mass of our body, the muscles and the bones and the blood. Here you see the blood, which is a tissue that develops from the mesoderm. From the entoderm develops the lining of the gut and the lining of the lungs and so forth, although the mass of the entodermal tissue is nowhere near as large as the mesoderm and the ectoderm. In some organs they play a very essential role.

It is interesting that when you have a cancer and it metastasizes, it metastasizes usually only two tissues of common embryonic origin. What that means is that if you have a cancer on mesodermal tissue, when these cells break loose and float through the lymph system, it will metastasize only to tissues that develop from mesoderm. So it is very interesting that all through the life of the person, these tissues retain some of the original characteristics of these three germ layers. And the body cells, the T cells and so forth are programmed to know the difference between these body tissues.

I mentioned T cells. I shouldn't do that without explaining a little bit of what they are. Very early in our embryonic development, there are some unique cells that will end up in the blood. Some unique cells are developed, and they are now imprinted with who you are, and this is very early in development. And it is their role all through your life after that to keep track of who you are and identify any invader that is not you. So if a virus or a bacterium or something like that gets in, the T cells immediately detect that as being foreign and they now alert the leukocytes, which are the white blood cells, which have phagocytic, which means they can envelope and ingest. These organisms have phagocytic activity, alert them that that is an enemy and you need to take him out. And that is called our response system to infections and so forth. And, by the way, if you have a little pus pocket, that is the remains of thousands, maybe millions of these leukocytes that have come to do battle for you, and they have died in the process. But not to worry. Your bone marrow and lymph system are making a whole lot more lymphocytes.

Sometimes these T cells get confused, and it is not really clear to them what is you and what is not you. And sometimes they will falsely identify some of your tissues as being foreign to you, and then the leukocytes will come in and attack the other body defenses will come in and attack these tissues.

□ 1730

We refer to these diseases, and there are a whole long list of them, as being autoimmune diseases. I have one of those diseases, and many, many people have that. Some types of arthritis is an autoimmune disease. You have the arthritis because your T cells have inappropriately identified these joint tissues in your body as not being used, so they are now being attacked by the body defenses.

I want to look at just one more slide and then call on a colleague of mine, Dr. GINGREY, who has joined me in filing this bill.

This is a little illustration of what happens with monozygotic twins. Mono means one, and you saw what the zygote was. That is the fertilized ovum. Monozygotic twins, we call them identical twins. It begins with the fertilized egg, the zygote, the two-cell stage, then it may develop to two inner masses. Actually, the division can occur at the two-cell stage. The division, we have some reason to believe it can occur as the two inner cell mass stages. These will later develop into the three germ layers we talked about.

You can differentiate when that division occurred by how the babies present themselves at birth, whether they are in two amnions or in a common amnion. They, of course, should always be in a common chorion. The chorion is the big tough sac on the outside. The amnion is the thinner sac on the inside filled with the fluid called the amniotic fluid that protects the baby during its development.

I would like to note, by the way, that one of these two identical twins is a clone. I didn't think the sky was going to fall when we talked about cloning, because nature has been doing it for a very long time. But sometimes we should let nature do things and not mimic or interfere in what nature is doing, and I understand the concerns relative to cloning. But it is just of interest to note that nature has been doing this for a very long time.

Dr. GINGREY has joined us. Let me now yield to him.

Mr. GINGREY. Madam Speaker, I thank the gentleman for yielding. This is going to be like two discussions, one from the professor and the other one from maybe his first year master's program student. Although I have a M.D., Dr. BARTLETT, of course, is a Ph.D. physiologist, and as he explains this, it is compelling, the evidence that he gives.

Sometimes I get a little lost in the science myself, but I think the main thing to know about the bill that he has introduced, and introduced in the last Congress and introduced again in the 110th this year, H.R. 322 is an alternative way to obtain almost totally potential, totipotential embryonic, almost embryonic stem cells, without getting into this moral-ethical dilemma of the question of are you for life at its earliest and its most advanced stages, are you pro-life or prochoice. This is a debate that will go on probably for long after we are all gone and other people have taken our places on both sides of the aisle.

But what I like about the Bartlett bill, H.R. 322, is it says, Mr. President, we don't have to divide the country over this issue. It has been divisive. The President made a very difficult decision back in I think August of 2001 when there was this call for Federal funding for stem cell research. Before that, there had been none, or none on embryonic stem cell, let me say. There had been some research on adults in bone marrow and cord blood and things like that, and I am sure Dr. BARTLETT has talked about that.

But the President has said, look, we will allow embryonic stem cell funding by the John Q. Public taxpayer on these existing stem cell lines that had been indeed obtained from a living human embryo, little life in their earliest forms, that were obtained from these fertility clinics that were considered extra or throwaway or whatever. So the President, I forget the hundreds of millions of dollars worth of research that the Federal Government has funded through the National Institutes of Health and other agencies, but it is substantial, but he did not want to fund any more research on new destruction of life.

So that is where we have been for these last few years, until Ms. DEGETTE and Mr. CASTLE in the House passed their bill that would allow the use of the little embryos from the fertility clinics.

So I want to commend Dr. BARTLETT, because what he says is that maybe it is true, maybe it is true that the embryonic stem cell in its earliest form has more potential than the adult stem cells. The adult stem cells are multipotent, but not pluripotent, and certainly not totipotent. So what Dr. BARTLETT has done in his bill is say, look, there are other ways.

Madam Speaker, there is a doctor at Wake Forest University and just recently he did some research and reported in a very respected medical journal of being able to obtain cells from amniotic fluid as early as 10 to 12 weeks of a pregnancy.

Now, that is not a true embryonic cell, but it is getting pretty darn close to it. It is getting darn close to it. I would be very interested in hearing what Dr. BARTLETT says about if you compare the potential of those cells in amniotic fluid that you can obtain when a woman, let's say for genetic diagnosis she is 10 to 12 weeks pregnant, she is over the age of 35, she has concerned about the increased risk of Down Syndrome, and she wants some assurance that that baby, her baby, doesn't have Down Syndrome. So that is why the amniotic fluid is obtained, to get some of those cells to know the exact genetic makeup of that child.

But there are lots of extra cells that could be then used with the patient's consent without harming anything, certainly without destruction of any living embryo.

So this is why I as kind of a practical-minded former OB–GYN physician, who has not researched, who never published a paper, who didn't work at one of the great medical centers in this country, but I did go to a wonderful medical school, the Medical College of Georgia in Augusta, and I did my residency there in obstetrics and gynecology, and then went out and practiced for 26 years and delivered a lot of babies, and I feel I know of what I speak.

But what I want to do, and the purpose of me being here tonight and sharing this time with Dr. BARTLETT, is to say we don't have to fight about this. We got lots of things we can fight about.

We are fighting about the conduct of the war right now. We have people in this body that say it was the wrong thing, and then other people say, no, no, it wasn't the wrong thing, but the thing is wrong, and they are arguing about how we have conducted that. We will have and are having a fair debate and difference of opinion.

But this is one that, because of what is in the Bartlett bill, H.R. 322, we don't really have to fight about it. We don't have to get ugly about it. And most importantly, we don't have to destroy any human life in getting these nearly totally potential, almost embryonic stem cells.

Of course, Dr. BARTLETT will want to discuss further, I think, that as part of his bill there are techniques that you actually can obtain an embryonic stem cell without destroying the embryo, by doing a biopsy technique.

So that is why I strongly support his bill. We all, everybody in this House and in the other Chamber, the other body, our heart goes out to the Michael J. Foxes of the world, the Christopher Reeves of the world and the folks that are not famous that may be members of our own family. I have heard my colleagues come down and speak in the well compellingly about members of their own family. Our esteemed colleague from Rhode Island, a wonderful Member of this body, who, as a paraplegic, when he talks, people listen, obviously, on both sides of the aisle.

So we want help. We want help ASAP. But I don't think we have to divide our country, we don't have to divide ourselves, we don't have to destroy any human life.

As I kind of sum up and close and turn it back over to the real expert, I just want to say, Madam Speaker, that it is suggested there are extra and there are so many, 400,000 or whatever, just sitting around waiting to be utilized for their embryonic cells and they are going to be thrown away. It is really not true, and we all know that.

We all know that many of the Snowflake Babies have been up here in Washington, in some instances twins that were adopted as embryos and implanted into a mom who couldn't have a baby before that, and in some instances had more than one and had two. I have held them in my arms. We call them the Snowflake Babies, but they are beautiful little toddlers for a lot of infertile couples. So there are no extra babies. There are no throwaways.

With that, I yield back to my colleague. I appreciate him giving me a little time to join him and say hoorah for the work he is doing on H.R. 322.

Mr. BARTLETT of Maryland. Thank you very much. I am very appreciative of the contribution that Dr. GINGREY is making. Being a physician and having delivered a very large number of babies, he obviously brings a level of authenticity and credibility to this discussion.

On this chart, we have another couple of sequences which shows—the previous one we looked at showed the development of identical twins—this one shows the production of paternal twins. The mother may slough two eggs. As a matter of fact, with the in vitro fertilization, since we aren't sure that any one of them is going to be potent to implant properly, frequently the doctor will place several in the uterus and more than one may implant. I have a good colleague here, DANA ROHRABACHER, whose wife had three babies. That is nice. That gets the bottle feeding and diaper changing all over pretty quickly, doesn't it?

But this is what happens when the mother sloughs more than one egg naturally. Both of these eggs will be fertilized, because there are millions of sperm there, and they start to divide, and this is what is going down that little C-shaped fallopian tube in the uterus that we saw before.

Then at the blastula stage, it gets down to the uterus, and usually they will be somewhat separated and they will implant some little distance from each other, so when they present at birth the doctor will know immediately they are fraternal twins, because they have separate amniotic sacs and separate placentas, just two different babies, one attached to one side of the uterus and the other perhaps attached to the other side of the uterus.

But sometimes if they implant very close together in the uterus, they will develop with a fused chorionic sac which may mimic the single chorionic sac that is produced with identical twins. Then, of course, you will know whether they are identical or not, whether they look alike or not; and if you aren't really certain of that, you can do DNA to determine if they are identical twins.

□ 1745

Madam Speaker, President Bush appointed a council on bioethics to look at this whole embryonic stem cell debate. When he came to office, of course, money was being spent on a number of embryonic stem cell lines, and all of those stem cell lines were produced by destroying embryos, and the President was faced with a dilemma, was it right to take one life because when you destroy an embryo you are taking a life, to hopefully help another. His own personal ethics would not permit him to do this, so he set up a council on bioethics to determine were there techniques where one could get embryonic stem cells without killing embryos or harming embryos.

This is from page 25 in this white paper. It said, ''Thus, apparently normal children have been born following removal of one or two blastomeres from the six to eight cell embryo. However, long-term studies to determine whether this procedure produces subtle or later developing injury in children born following PGD,'' preimplantation genetic diagnosis, ''have been recommended and are sorely needed.''

Well, maybe we need those studies, but I think nature through the years has conducted a very large number of studies for us. I want to show you this identical twin slide because in identical twins, half the cells of the embryo are taken away, and each half produces a perfectly normal child as far as we can tell, and it has been going on for roughly 8,000 years of recorded history. No one has ever suggested there is anything deficient in an identical twin.

As a matter of fact, when President Clinton appointed a commission to look at this, it was an identical twin who chaired the commission, and I asked him when he was on the Hill here if he felt less a person because he was only half the original embryo. Of course, that is a silly question because he certainly doesn't feel any less a person. But that is what many people

would have you believe. That somehow taking a cell or two from this early embryo, if you take two cells from an eight-cell embryo, the result will be three-fourths of a person because you took a fourth of his cells away. Well, no identical twin feels half a person because the other half of that original embryo produced his or her identical twin.

So one would be enormously surprised if this had any effect because, as I say, in 8,000 years of recorded history with millions and millions of identical twins produced, no one has ever hinted that there is any deficiency in an identical twin because they shared the cells from an original embryo with their mate.

It may be some time before stem cell lines can be reliably derived from single cells. These are the single cells that are taken out up here, extracted from early embryos, and in ways that do no harm to the embryo.

Now medicine has marched on, and as I will explain, we have the evidence that we can do this. The initial success of the Verlinksy group efforts raises the future possibility that pluripotent stem cells, which means the pluri is many. It is not totipotent. Totipotent is totally potent. That is the cell can produce anything and everything, including another embryo.

When I first started exploring this potential, I had the nagging concern that the single cell I took from that early embryo would be totipotent and what I was dealing with was just another embryo, in other words I was king of making identical twins. But I am very pleased that no one out there believes that the cells taken from the 8-cell stage are totipotent.

What this means is you shouldn't be able to get an identical twin from something beyond the 8-cell stage, and clearly you can, so there are some things going on here that we may not be totally familiar with. But there are a lot of things going on in the body that we can't explain.

As an example, if you remove part of your liver, and there are very few organs in the body that have this potential, but the liver will now regenerate what you have taken out. The question I have always asked myself, as long ago as 50 years ago when I first had these courses, no, 60 years ago now when I first had these courses, how did those cells in the liver know, millions of them, how did they know enough was enough, that the liver was now reconstituted to its original size so they could quit dividing. I have asked that question of current physiologists, and no one knows the answer to that.

And if you have a bone broken, in the healing process you have a callus developing on that bone. There is a thickening of the bone, and then gradually that is taken away and the bone is returned pretty much to its original shape. How do those cells know they have taken enough away? Or how do they know that they have developed enough of a callus to strengthen the bone until it is well calcified, until it is strong enough.

What we are going to be talking about is this and a number of other techniques that are included in the legislation that I talked about, H.R. 322, and the one that was passed in the last Congress.

The next slide shows some of the techniques that were reported by the President's Council on Bioethics as potentially offering the hope that we could get embryonic stem cells from an embryo without killing the embryo.

Our first depiction here is normal fertilization. The cells divide and grow in the mother. One of the last divisions is what we call a meiotic division. The usual division is a mitotic division. Before the mitotic division, the chromosomes divide so when the cells separate, each cell has the normal number of chromosomes called the diploid number, and the single unit of chromosomes is called the haploid number.

Well, obviously if you are going to have a human being who has the normal number of chromosomes, you have to end up with half as many of those chromosomes in the egg and half as many in the sperm, and that is accomplished by a process known as miosis. So in the egg and in the sperm cell, there are only the haploid number of chromosomes, only half the full complement of chromosomes, and they now join in the egg. There is quite a miraculous process that occurs there. There may be millions of sperms trying to fertilize the egg, but essentially instantaneously when one cell makes it into the egg, then the covering of the egg becomes absolutely impervious to any other sperm. If that wasn't true, you would end up with two sperm getting in, and then you would have triploid, or three, and that would be fatal for humans. Trisomy 21, for instance, is what happens to a human when just one of those chromosomes, mongolism, when only one of those chromosomes is three in nature, and sometimes that happens in the division of the cells, and that is called trisomy 21 or mongolism.

It is very interesting in plants that many replications of the chromosome, or polyploid, is a very beneficial effect. The flowers get bigger with better colors, and that is one of the things that plant breeders do is use a chemical to produce polyploid, bigger and better plants, and some that aren't any good but you can just discard them. That is how we have gotten many of miracle crops, by polyploid.

The second depiction here is of cloning. In cloning, you take an egg cell and you take the nucleus out of the egg cell so now you have an egg cell without a nucleus. And then you have a donor cell, and you can get the nucleus from this donor cell into the egg two different ways. One, you can fuse the two and the nucleus will then migrate to the egg; or you can simply take the nucleus out of the donor cell and put it in the egg.

Now all of the controlling material in the egg is not in the nucleus. There are a number of cytoplasmic factors that control what the genes, what the chromosomes and the nucleus does. So this goes on to what appears to be a fairly normal birth.

In parthenogenesis, that is an interesting one, in parthenogenesis, miosis does not occur and the egg retains its diploid number of chromosomes and the egg goes on and divides. And some animals, by the way, reproduce by parthenogenesis. That rarely happens in humans. Some animals reproduce almost exclusively by parthenogenesis.

The next slide is another depiction of some of these same techniques, and it goes just a little further. Here we have the classical development and embryonic stem cell derivation. What they do here is when you get to this blastocyst area, you have two choices. One, you either implant it or freeze it to keep it for implantation later; or you destroy it and get your embryonic stem cells. This is classic technique for getting embryonic stem cells. This was the technique that the President had ethical concerns about which is why he issued his executive order which said that Federal money could be used to support research using the embryonic stem cell lines in existence at that time, what, 60 or more, now down to 20 or 22, and we knew that they would eventually run out, and now we are faced with a crisis because what do we do, these stem cell lines are running out. There is a big hope in the medical community that we can get some fairly dramatic cures from embryonic stem cells.

Here are embryonic stem cells from a single blastomere. This is what we have been talking about. You take a single blastomere cell from the embryo, and you can implant what is remaining. They have done that more than 2,000 times. They have done what is called a PGD. It started in England. There are a number of those labs in our country, and the parents would like to know whether or not their baby is going to have a genetic defect.

So they take a single cell out and they do a genetic diagnosis. If there is no genetic defect, they implant the remaining cells in the mother, and more than 2,000 times now we have had what appears to be a perfectly normal baby. Indeed, the big surprise would be if it wasn't a perfectly normal baby because in nature in producing normal identical twins, half the cells are taken away and nobody argues that identical twins are not normal people.

Then the process of nuclear transfer, and one of the techniques that is suggested here is a modification of that, modification of that cloning, and this is altered nuclear transfer. This is the modification.

In this one they make sure that you are not going to have a clone because they deactivate one of the genes. CDX2 I think it is called there. They deactivate one of the genes so that it will

simply develop into a cell mass with no organization. You can now get from that cell mass the cells that you wish, but there is no organization and it is not an embryo. You can see some obvious objections to this. You are just producing a freak and why would you want to do that to a perfectly normal zygote that you started with.

The next chart shows this altered nuclear transfer in a little more detail. We have seen this one before. Altered nuclear transfer is where you knock out the gene for normal development so when you have taken the nucleus from the egg and replaced that with a nucleus from the donor cell, you now have knocked out the gene in this nucleus for normal development, so you are simply going to get a growth of cells. It is not going to be an embryo, and there obviously some ethical questions about this, but this is being debated.

This is an oocyte-assisted reprogramming. What this says is that in the oocyte, and I mentioned the factors that are out in the cytoplasm, and if you intensify those and let them work, they will assist in this and it increases the genes for embryonic stem cell growth without producing an organized embryo.

And this is the technique which I suggested, embryo biopsy. I went to NIH way before the President issued his executive order, and having had a course in advanced embryology nearly 50 years ago, and recognizing what identical twins were, it occurred to me you ought to be able to take a cell from the early embryo without hurting the embryo.

□ 1800

I asked the NIH researchers when they had an open house out there one day while the President was making up his mind, and they invited Members of Congress and staff to come out. I do not remember any other Members of Congress. There was a lot of staff there.

I asked them should this not be possible? They said, well, it certainly should be possible. In fact, you know, it is certainly easier just to take the embryo and disaggregate, they call it. That means stir it all up. Disaggregate it and take your embryonic stem cells from what grows from that.

There is another interesting proposal of how to get embryonic stem cells without killing embryos. If you deal with in vitro fertilization, you produce a number of embryos and you have eight of them that you have thawed out and you are going to look at them to see which ones look strong enough to be fertilized to place in the woman.

There are some of these embryos that will not make it. They appear to be alive, but they will not go on and divide. So, in just a little while, they are going to decompose and die, and the proponents of this technique argue that they are a bit like the brain-dead person, that is, an individual that is not going to make it but the parts. We take body parts from brain-dead people for transplant. So they argue you ought to be able to get good cells from an embryo that is not going to divide any further. I have several slides, and I did not bring all of them, which show the criteria which are fairly reproducible and verifiable that the embryo is, in fact, dead—because you would not want somebody to say, gee, I think that embryo is going to die so I am going to take it because I would like to get a embryonic stem cell line from that embryo.

The next slide slow shows a bit of an expansion on this. Embryonic stem cell assisted reprogramming, and the acronyms, particularly DOD and much of the other professional societies have lots of acronyms. I guess that is so they appear more erudite and you cannot figure out what they are saying.

Differentiation using cell proteins, this is the assisted development I mentioned because this cell suite, this is from the cytoplasm, and this contains factors that controls what happens in the nucleus. They turn on genes and turn off genes and so forth during the development of the embryo. You can modify that.

Differentiation, a new term, should not use these terms without describing what they are. When you start out with the cell mass and the developing embryo, so forth, those cells are undifferentiated, they are all the same. They then begin the differentiation process where you have an ectoderm, a mesoderm, and an intaderm. Then it goes on to differentiate from that. You can get bone from mesoderm. You can get muscle from mesoderm. You can get blood cells from mesoderm. So the differentiation goes on from that.

Then there are postnatal tissues, and these are the tissues from which we can get adult stem cells. It might be worth just a moment to mention the dialogue that is going on between the enthusiasts for adult stem cells and the proponents of embryonic stem cell research.

Most of the medical applications have been made from adult stem cells, and that is because we have been working with adult stem cells for more than 3 decades. It just takes a while for something to go from the laboratory to the hospital, and we have had that time for the adult stem cells. We have not had that time for embryonic stem cells because we have been working on them for only a few years.

Now, this permits some people who are very zealous for protection of the embryo to say, gee, we really should not be looking at embryonic stem cell research because all of the contributions so far have been from adult stem cells and so, therefore, why would you want to go this route because presumably all the applications in the future are also going to come from adult stem cells.

That may be true but I will tell you that there is nobody that I know of in the professional community who believes that that ought to be true. These embryonic stem cells may be like the rambunctious teenager. They can be somewhat uncontrollable, and in some of the early experiments, they have gone on to produce cancers and growths and so forth, and who knows what the ultimate will be.

But I will tell you, and you know from what you see in the papers and hear on television and so forth that there are a number of people who believe that diseases like Parkinson's disease and diabetes and spinal cord injuries and so forth could maybe be cured with the application of embryonic stem cell research and medical developments.

It is true that theoretically, philosophically, there ought to be more applications from embryonic stem cells just because of what they are. They are pluripotent cells. They can make any and every cell in the body. We have some adult stem cells, and we generally get them from the bone marrow, the blood, and there are stem cells with a variety of blood cells that are produced and you can sometimes trick them into believing they are not what they are so they can also make some other tissues.

The next slide shows the little schematic on the dead embryo, and what this shows is that you can tell—and these are reproducible and verifiable—you can tell that an embryo is probably—well, not probably—is not going to make it, and then the argument is that you ought to be able to take cells from that embryo ethically. Of course, the other argument would be if the embryo is about to die, why would I want a stem cell line from cells that are suspect.

Clearly, clearly, if we can make the altered nuclear transfer work, where you can take the donor cell which is a cell from the patient, if you can make embryonic stem cells from that, that is the route we want to go because then the organ you are making, whatever you are making for that person, is going to be them, and you can implant it in them. There is not going to be any rejection. If it comes from any other source, you are going to have a rejection phenomena, but we have developed clinical techniques for handling that. There are lots of people with organ transplants, and they lead productive, comfortable lives for quite a number of years.

When I first started this discussion, we conferenced with a lot of individuals, and one of those was a representative of the Conference of Catholic Bishops. Sometimes in life, you see something or somebody says something, you say to yourself, gee, why did I not think of that; it is so obvious and so right and so productive. That happened in this dialogue.

We were talking about taking cells from the early embryo that would not hurt the embryo, but then you get the idea that, gee, it might. You can make

the argument and certainly should not because you can take half the cells away in identical twins and obviously it has not hurt the embryo at all, so why should taking a cell out of the embryo make any, yeah, I know, but it just might. So you need to do some work with that to make sure it does not hurt the embryos. There is always an outside chance that the person lives to be 90 and they determine some defect that was as a result of taking the cell out earlier.

So the suggestion was made by Mr. Dortlinger that, gee, the first thing you do with that cell you take out is to make a repair kit. Wow, why did I not think about that? It is obviously such a right thing to do. What you do to that cell now is to make your replacement, which by the way is what parents are hoping to sort of do when they freeze umbilical cord blood. Now, those are not embryonic stem cells in umbilical cord blood. They are adult. So when the baby is born it is an adult. As a matter of fact, the day you are born is the day you start to die. Things start to go downhill from the day you are born. So these are adult stem cells, but they have characteristics that may be more amenable to alterations, to modifications than adult stem cells taken from a 50-year-old.

By the way, there has been a new technique which some heralded, now we do not need to think about embryonic stem cells because you can take amniotic fluid, and as the baby is growing from the earliest stages on, but it has to be in amnion before you can get these cells in the amniotic fluid. You can get some embryonic stem cells there, and so a big push was made, gee, let us stop talking about embryonic stem cell research because now we have got these stem cells from amniotic fluid.

But the person who discovered that made the observation that this was complementary to embryonic stem cells and should not be considered in place of embryonic stem cells. It is certainly a good place to get cells that are more easily reprogrammed to believe that they are not what they are at that stage of development, but he said that it should be considered complementary to embryonic stem cells and not in place of stem cells.

Well, the Senate is going to vote on this in a few days now; that is, they are going to vote on the Castle-DeGette bill. It will certainly pass, and I think they are voting on exactly the same bill. So it does not even need to go to conference. It will then go to the President, and the President will do what he did in the last Congress. He will veto the bill.

So here we will be with only a few embryonic stem cell lines running out. They are all contaminated with mouse feeder cells, and so they may or may not be amenable to actual therapy, but in any event, these stem cell lines do run out. With the enormous potential that many people believe embryonic stem cells have, we will be in a situation where there is only a few embryonic stem cell lines which are running out and a public out there which is demanding and they come to our office. One of those compelling things are these kids with this big thing in their body like a hockey puck which is pushing insulin because they have juvenile diabetes, and they are very brittle and they have to trickle that in little by little during the day to maintain the status quo.

So here we will be with embryonic stem cell lines running out, with a cry from the public and the professional part of the public that we need to move on with this. My hope is that when the President has vetoed this bill, the Castle-DeGette bill, he will, he did last time and he will again, that then they pass our bill which was passed 100–0 in the Senate last year, by 273 votes in this House. In fact, they got more votes than the one that is being sent on to the President from this House. So, hopefully, that bill will come up next and can move to the President's desk, and he will certainly sign that bill and we can get on with ethical embryonic stem cell research.

Mr. Speaker, I would hope that all of our listeners out there who have a Representative that they believe may not be supportive of this, would they please contact that Representative and urge them to support this bill. It will provide ethical embryonic stem cell research. Neither I nor any of the others know what the ultimate result of this will be, but I will tell you the potential for clinical cures and application because of embryonic stem cells being what they are has to be greater than adult stem cells.

Mr. Speaker, let us hope that we can move this clock very quickly because there are a lot of people out there that need this kind of help.

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF H.R. 985, WHISTLEBLOWER PROTECTION ENHANCEMENT ACT OF 2007

Mr. HASTINGS of Florida (during the Special Order of Mr. BARTLETT of Maryland) from the Committee on Rules, submitted a privileged report (Rept. No. 110–48) on the resolution (H. Res. 239) providing for consideration of the bill (H.R. 985) to amend title 5, United States Code, to clarify which disclosures of information are protected from prohibited personnel practices; to require a statement in nondisclosure policies, forms, and agreements to the effect that such policies, forms, and agreements are consistent with certain disclosure protections, and for other purposes, which was referred to the House Calendar and ordered to be printed.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

Ms. KILPATRICK (at the request of Mr. HOYER) for today.

Mr. CULBERSON (at the request of Mr. BOEHNER) for today on account of illness in the family.

Mrs. SCHMIDT (at the request of Mr. BOEHNER) for today on account of attending a funeral.

SPECIAL ORDERS GRANTED

By unanimous consent, permission to address the House, following the legislative program and any special orders heretofore entered, was granted to:

(The following Members (at the request of Mr. ALLEN) to revise and extend their remarks and include extraneous material:)

Mr. CUMMINGS, for 5 minutes, today.

Mr. ALLEN, for 5 minutes, today.

Mr. DEFAZIO, for 5 minutes, today.

Ms. WOOLSEY, for 5 minutes, today.

Mrs. MCCARTHY of New York, for 5 minutes, today.

ENROLLED BILLS SIGNED

Ms. Lorraine C. Miller, Clerk of the House, reported and found truly enrolled bills of the House of the following titles, which were thereupon signed by the Speaker:

H.R. 342. An act to designate the United States courthouse located at 555 Independence Street in Cape Girardeau, Missouri, as the ''Rush Hudson Limbaugh, Sr. United States Courthouse''.

H.R. 544. An act to designate the United States courthouse at South Federal Place in Santa Fe, New Mexico, as the ''Santiago E. Campos United States Courthouse''.

H.R. 584. An act to designate the Federal building located at 400 Maryland Avenue Southwest in the District of Columbia as the ''Lyndon Baines Johnson Department of Education Building''.

ADJOURNMENT

Mr. BARTLETT of Maryland. Mr. Speaker, I move that the House do now adjourn.

The motion was agreed to; accordingly (at 6 o'clock and 15 minutes p.m.), the House adjourned until tomorrow, Wednesday, March 14, 2007, at 10 a.m.

EXECUTIVE COMMUNICATIONS, ETC.

Under clause 8 of rule XII, executive communications were taken from the Speaker's table and referred as follows:

817. A letter from the General Counsel, National Credit Union Administration, transmitting the Administration's final rule — General Lending Maturity Limit and Other Financial Services (RIN: 3133-AD30) received March 8, 2007, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Financial Services.

818. A letter from the Senior Legal Advisor, OGC, FERC, Federal Energy Regulatory Commission, transmitting the Commission's final rule — Preventing Undue Discrimination and Preference in Transmission Service [Docket Nos. RM05-17-000 and RM05-25-000; Order No. 890] received March 7, 2007, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Energy and Commerce.