

Beacon Hill Byline by Mary Rogeness

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### **Stem Cell Research: Part 1**

Stem cells dominate debate at the State House this week because the senate has promised to pass a bill by the end of March, and the end of the month is here. There has been a lot of intense study by legislators about those cells and the difference between adult, embryonic and therapeutically cloned stem cells.

I have attempted to learn the ins and outs of the topic over the past weeks, and will try to explain the complex topic in these paragraphs.

Stem cells are often seen as the miracle cure of the 21<sup>st</sup> century, enabling the blind to see and the lame to walk. They became a campaign issue in the last presidential election after President Bush refused to allow government funding to develop new embryonic stem cells for research.

What are these magic cells? They hold the promise of miracle cures because they have the special role in our bodies to develop into different types of specialized cells. Such cells harvested from adults have been used to treat leukemia and other diseases. There is no political disagreement about the use of adult stem cells.

Embryonic stem cells are another matter entirely. They can be removed from a fertilized human ovum (egg) a few days after fertilization. The procedure destroys the fertilized egg, and that act opens the debate. The technique might not have been considered before *in vitro* fertilization became a standard treatment for infertility. When a woman seeks to become pregnant through *in vitro* fertilization, many eggs are fertilized in a medical laboratory. Eggs that are not implanted in the womb can then be frozen for later use or discarded. It is those unused embryos that can be used for embryonic stem cell research, though the research must be privately funded.

Last year's national discussion of stem cell research focused on using surplus embryos from *in vitro* procedures. Our legislature and Governor Romney would be likely to approve that research by a wide margin. Since then, however, scientists have increased their demands.

Researchers are now requesting permission to take an unfertilized human ovum, remove the nucleus, insert a nucleus from another human cell, and force the ovum to develop for 14 days in order to remove stem cells. Called somatic cell transfer, this is actual cloning, the method that produced the first cloned sheep, Dolly. Researchers speak of the procedure as if it's an everyday experiment though it has succeeded in humans only once, if at all, worldwide.

The debate lies ahead as I write these words, though it may be over when you read them. These are some of the questions the legislature must answer before enacting a law. Does Massachusetts risk by inaction losing scientists to California, which has approved a referendum to fund research? Since biotech is only 1% of the Massachusetts economy, and less than 1% of that is devoted to stem cell research, should Massachusetts spend our tax dollars to fund such a small sector of the economy? Or could we use those dollars to create more jobs through traditional economic development?

Before we can even deal with those issues, however, we must respond to the ethical concern that looms over all other questions: Is it right to authorize the creation in a laboratory of a cloned human embryo?