

## Activity 5: Taking a Stand On Stem Cell Research

### Assignment 2: Letter to Policy Maker

Stem cell research is a controversial issue which exposes individuals from all sectors of society to the scientific and ethical dimensions of a heated debate. Stakeholders include scientists, biotechnology and pharmaceutical industries, law makers, religious leaders, patient advocacy groups, and human rights organizations. In March of 2004, the United States President's Council on Bioethics released a report that would expand the possibilities of stem cell research in the United States, but President Bush remained steadfast in his decision to limit federal funding of embryonic stem cell (ESC) research. Meanwhile, the United Nations has repeatedly postponed a vote on an International Treaty to Ban Human Cloning, and international consensus regarding regulations has not yet emerged, forcing many researchers to move forward with caution. Some researchers are turning to the private sector for support, while others have established a self-imposed moratorium against further research until their governments draft appropriate guidelines. Some nations, like the UK, are establishing national registries for stem cell lines and issuing licenses for research using these lines.

The recent announcement by a South Korean stem cell research team has only ignited the debate. The team claimed to have developed patient-specific embryonic stem cell (ESC) lines from cloned human five-day old embryos (blastocysts) suggesting that immunocompatible ESCs can be developed for each person, but their methodology prompted concern by many bioethicists and religious leaders and it was later found that their paper was based on falsified data and unethical practices, leading to its retraction. The debate is further complicated by recent studies on adult stem cells which indicate that their plasticity and regenerative powers may be in question.

On the flip side, therapies have been developed using cord blood and new technologies to broaden their capabilities, and the first proof of concept experiments using genetically engineered cloned embryos defective in uterine implantation were completed in 2005.

In this assignment, you will research pending legislation on stem cell research at the national and international level, as well as a wide range of ethical views on this research. You will place your own views on the subject within this backdrop and take a stance on a particular bill, treaty, or funding initiative in the form of a letter to a policy maker. Since this project requires a good deal of research, be sure to allocate enough time for writing and revision.

### Instructions

1. Complete the assigned reading and read a sample of the literature and websites listed below. Some of the articles in the list are reviews and will help you arrive at a position, while others are more specific and address a particular approach, view, or legislation, and these a subset of these will serve as references in your letter (suggestions for textbook readings maybe be found in the **Teaching Notes** to Activity 5).
2. Consider the international, national and state policies concerning stem cell research and cloning to develop a letter that outlines your position with respect to this research field. You should also conduct some individual literature research on your own country or state policy, and be aware of pending legislation. A list of guiding questions appears below to help you frame the content of your letter.
3. In composing your letter, be sure to do the following:

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- Address a particular policy maker.
  - Outline a clear call to action in the opening paragraph. You may request a specific response to a bill, funding initiative, or treaty
  - Clearly summarize your policy maker's stance and place this within the larger context of the local, national, or international arena.
  - Clearly state your stance on stem cell research and in the remaining paragraphs build your argument.
  - Clearly outline your support for or reasoning against using stem cells derived from one or some of the following seven sources: 1) embryonic stem cells (ESCs) from existing stem cell lines, 2) ESCs from excess embryos created by IVF clinics for the purposes of having a child, 3) ESCs from embryos created by IVF for research purposes only, 4) ESCs from embryos created by somatic nuclear transfer cloning technology or parthenogenesis 5) ESCs from embryos created by somatic nuclear transfer cloning technology and genetic engineered to lack implantation capabilities, 6) fetal or cord cell blood and 7) adult stem cells (ASCs).
  - Address the funding and legal parameters (i.e. historical examples of past scientific progress debates, and economic, political, and religious concerns)
  - Clearly outline the extent of regulation (prohibitive, controlled or unrestricted) and the corresponding criteria and punishment, if any associated with your stem cell research proposal.
  - Address your opponent's stance against your position using logical arguments. To prepare for this portion of the statement, you must be aware of alternative points of view and why they exist and how they might be most effectively countered.
  - Clearly illustrate who will benefit and who will suffer/pay under your proposed plan, and include both economic and public health perspectives
  - Include a list of references at the end of your letter.
4. Review the stem cell letter **Rubric** in the **Core Materials** while developing your letter as it will indicate how your letter will be graded.
  5. Your instructor may ask you to exchange your letter with a peer and use **Resource Five: Peer Assessment of Writing** to provide suggestions for improvement. Your critique should:
    - Highlight any important questions or points that were not addressed in the letter.
    - Uncover potential pitfalls in rationale or evidence presented in the letter.
    - Suggest alternatives that the author might have overlooked.

### Questions

1. What is the national government's stance on stem cell research?
2. Do all national governing bodies or advisory groups agree with the national government's position?
3. What advice did the U.S. President's Council on Bioethics provide in April 2004?
4. How have other nations decided to handle this delicate field of research?
5. What is the difference between reproductive and therapeutic cloning?
6. How do ESCs and ASCs behave differently and how are they similar?

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7. Is there an ethical difference between creating human embryos for research purposes versus using those created, stored or discarded by In Vitro Fertilization (IVF) clinics?
8. What are the likely consequences of stem cell technologies, including remote or potentially hidden consequences? What are the alternatives? Is the worst case scenario acceptable?
9. Who benefits? Who is at risk or pays the costs? (Who is upstream, choosing benefits? Who is downstream, experiencing the consequences?) Would you be willing to accept any of the consequences if this policy falls upon yourself?
10. Are there public health alternatives to stem cell research? If so, do they provide a more cost effective solution? Are there safer, more effective solutions?
11. Why do genetic diversity and immunology influence policy decisions to either expand or restrict stem cell research and stem cell sources?
12. What hope does stem cell research offer to clinical patients, environmental activists, scientists, and business?
13. What concerns do ethicists and religious leaders have regarding stem cell research and cloning?
14. Can a human embryo created through somatic nuclear transfer (SCNT cloning) live to be a viable human being? Do animal or human studies suggest that this might be possible? How might genomic imprinting and/or telomere length affect the outcome? Should we be genetically engineering clones that can not implant to skirt the loss of potential life issues?
15. What are the ethical issues surrounding cord blood banking and using these cells as a source of stem cell therapy?
16. Governments currently enforce legislation or policies which result in a loss of life, how do these compare to the "loss of life" that arises with certain types of stem cell research?

## Literature

### Review articles

1. Financial Times and Scientific American (2005). *The Future of Stem Cells Supplement*. *Financial Times and Scientific American*. New York. June 20. <http://news.ft.com/reports/stemcells2005>.
2. Shaw, J. (2004) "Stem-cell Science: When Medicine Meets Moral Philosophy." *Harvard Magazine* 106 (6). July-August: 36-45. A review of the field and its applications to public health addressing the work of groups of scientists at Harvard that are developing freely available ESC lines with private money. <http://www.harvardmagazine.com/on-line/070483.html>
3. Weinberg, R. (2002). "Of Clones and Clowns." *The Atlantic Monthly*, **289**(6): 54, 5. <http://www.theatlantic.com/issues/2002/06/weinberg.htm> . A feature article which reviews the public perception of cloning and the lack of intellectual dialogue surrounding policy decisions.
4. Ontario Genomics Institute. (2002) *ENGAGE: Stem cells: Information booklet*. Ontario Genomics Institute (OGI) by Genome Canada, and the Joint Centre for Bioethics (JCB) at the University of Toronto. This booklet was designed for high school students and gives a nice overview of the scientific, legal, and ethical parameters of this research field using global perspective. [http://www.stemcellnetwork.ca/engage/materials/information\\_book.pdf](http://www.stemcellnetwork.ca/engage/materials/information_book.pdf).

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- Hall, S. (2000). "The Recycled Generation." *New York Times Magazine*, **149**: 30-40. <http://www.nytimes.com/library/magazine/home/20000130mag-hall6.html> . A feature article about the work of Advanced Cell Technology and its former CEO Michael West.
- More advanced reading:** National Institutes of Health. (2001) *Stem Cells: Scientific Progress and Future Research Directions*. National Institutes of Health. <http://stemcells.nih.gov/info/scireport/> . A detailed scientific overview with appendices that are especially useful and contain detailed figures and diagrams.
- More lengthy review.** President's Council of Bioethics. (2004). *Reproduction and Responsibility: The Regulation of New Biotechnologies*. The President's Council on Bioethics. Washington, DC. March. <http://bioethics.gov/reports/stemcell/index.html>.

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### Commentary on current legislation and novel scientific techniques

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## Sampling of Letters

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  - Stem cell support grows: Senators viewpoints and differences amongst sources of stem cells (July 18, 2001)
  - Stem cell research grows in UK : Dr. Peterson's move from California to UK (July 20,2001)
  - Pope against stem cell testing and Bush wraps first meeting with Pope (July 23, 2001)
  - Women represent two sides of stem cell debate: What to do with frozen embryos in fertility labs? (July 30, 2001)

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<http://www.cnn.com/SPECIALS/2001/stemcell/>