

Good Morning, Mr. Chairman, Members of the Committee. Thank you for inviting me to present my testimony today.

“Stem Cells” are defined as cells capable of self-renewal as well as differentiation. The investigators funded by the New Jersey State Commission on Science are exploring every type of stem cell for the purpose of understanding function, regulation, and potential therapeutic benefit. These studies range from very basic studies to studies that will soon be translated into the clinic.

The promise of stem cell research is compelling and far-reaching. No other line of scientific inquiry offers better hope for curing intractable medical conditions. Indeed, therapies based on stem cells are a paradigm shift in the modern medical revolution. The potential to treat currently incurable conditions is both real and achievable in our lifetimes.

As a society, we have an obligation to pursue scientific discoveries that offer a clear potential to help those living with devastating illnesses. At the same, we recognize the legitimate moral, social and religious concerns raised by new technologies.

To address such concerns, nationally respected science associations, federal agencies and the State of New Jersey have set forth policies and procedures that ensure stem cell research meets the highest scientific and ethical standards. The Stem Cell Institute of New Jersey is committed to conducting responsible research that complies fully with these stringent requirements.

**History of stem cell Research in New Jersey:**

On May 12, 2004, the Stem Cell Institute of New Jersey was created by a memorandum of understanding between Rutgers, the State University of New Jersey and UMDNJ-Robert Wood Johnson Medical School.

The State committed \$8.5 million in state funds to support work at the Stem Cell Institute in financial year 2006, including \$5.5 million in capital funds to Robert Wood Johnson Medical School and Rutgers University to support laboratory renovation and GMP facilities to support stem cell research, as well as two clinical trials using umbilical cord-derived stem cells.

In December 2005, NJ became the first state to finance research using human embryonic stem cells. The Commission on Science and Technology awarded a total of \$5 million to 17 research teams.

On October 19, 2006, the finance committee of the General Assembly passed a \$250 million bill to support stem cell research facilities in New Brunswick, Camden, and Newark.

In October 2006, monthly meetings of investigators interested in stem cell research were initiated at Rutgers and Robert Wood Johnson Medical School. Over fifty investigators from academic and pharmaceutical companies have been meeting to report their work in stem cell research, to discuss progress in the field and to plan collaborative experiments.

In 2007, New Jersey awarded 17 grants, totaling \$10 million to stem cell researchers, including two grants to fund core laboratories for embryonic stem cell research.

Despite polls that showed that the majority of New Jerseyans were in favor of supporting embryonic stem cell research, a referendum was defeated in November 2007 that would have provided \$450 million dollars, for ten years in support of stem cell research. Major reasons for the defeat of the referendum were the off-year election, with fewer than 30% of voters coming to the polls, and the concern that this would add to the public's tax burden, as well as put New Jersey even further in the red.

Governor Corzine continues to be a strong supporter of stem cell research and the building of the joint Rutgers/UMDNJ-RWJMS Stem Cell Institute in New Brunswick. Key members of the NJ legislature also continue to strongly support stem cell research.

In June 2008, an additional 10 million dollars will be made available for investigators in New Jersey from the State for stem cell research via a peer-reviewed grant program.

**Examples of studies in progress are as follows below:**

Two types of stem cells are found in the bone marrow: hematopoietic stem cells, that form blood cells, and mesenchymal stem cells, capable of differentiating or forming bone, cartilage, nerve cells, fat cells, etc. Hematopoietic stem cells are now used at the RWJUH and throughout the world to treat patients with cancer following chemotherapy. Mesenchymal stem cells from bone marrow or cord blood are being tested for their ability to prevent graft vs. host disease, after marrow transplantation. Other uses for mesenchymal stem cells under study by NJ investigators include targeting tumors with mesenchymal stem cells carrying toxins, and use in regenerative medicine (spinal cord injury, heart injury and brain disorders (Parkinson's, Alzheimer's)).

Researchers at both Rutgers and UMDNJ have special expertise and interest in neural stem cells that may have important implications for brain disorders as well as serve as models to promote drug discovery.

Cord blood, placenta and amniotic fluid are also a rich source of stem cells. Clinical trials are in progress in collaboration with investigators in China, using a subset of these cells to treat spinal cord injury (Dr. Wise Young). The characterization of stem cells from placenta is under study by RWJMS investigators in collaboration with Celgene, a NJ-based biotech company.

Work on human embryonic stem cells has been hampered by Federal guidelines that limit studies to 20 cell lines that have been around for several years. The two core laboratories at

Testimony to be presented to the House Committee on Energy and Commerce's  
Subcommittee on Health by Joseph R. Bertino, M.D.  
May 8, 2008

---

Rutgers and RWJMS, established with NJ State funding, have allowed investigators to expand research activities using newly established embryonic cell lines.

Importantly, the completion of a GMP facility at the Cancer Institute/Stem Cell Institute will allow stem cells to be produced in quantities necessary for clinical studies.

The funding provided by the State of New Jersey has provided key support for both the research outlined above and additional research programs focused on a variety of important disease conditions including multiple sclerosis, Parkinson's disease, Alzheimer's disease and diabetes. A key part of our efforts has been the establishment of stem cell banking of umbilical cord blood and other stem cells. New Jersey's stem cell banks are leaders in this field.

I would be happy to answer the committee's questions. Thank you.