



State University of New York  
**Upstate Medical University**

**Position statement of SUNY Upstate Medical University  
in support of a stem cell research initiative**

SUNY Upstate Medical University strongly supports the concept of a fund to support stem cell research similar to those established in California and several other states. Stem cell research holds unique promise for new treatments and even cures for serious diseases such as Parkinson's disease, Alzheimer's disease, diabetes, heart disease, and cancer, with the prospect of substantial reduction in morbidity, mortality, and health care costs. For this reason alone, as a health science campus we are strongly supportive of this as consistent with our mission to improve the health of the communities we serve.

Stem cell research would also support the efforts of SUNY to expand our research activities in directions that are most exciting and promising. In the past decade, despite some efforts, our state has lost ground to other states that have invested substantially in biomedical technology, and a stem cell initiative would address that deficiency in significant ways. It would certainly help this campus in our efforts to recruit the best investigators to the faculty and retain them. Upstate would be particularly excited by the availability of support for stem cell research because it would be especially useful in areas of institutional strength and investment, including the neurosciences, cardiovascular disease, cancer, musculoskeletal disorders, and children's health.

As an example, faculty members in our Department of Neuroscience and Physiology are studying the effects of growth factors and hormones, as well as toxins such as alcohol, on the function of neuronal cells derived from embryonic stem cells. These studies will provide insight into mechanisms of disease progression and possible treatments or cures for developmental disorders such as attention deficit hyperactivity disorder, autism, and fetal alcohol syndrome; and for adult conditions such as alcoholism, macular degeneration, and Parkinson's Disease.

Leading scientists in our Department of Neurology have collaborated with scientists at Johns Hopkins University to publish in 2006 an exciting study involving rats that had been paralyzed by viral damage to the spinal cord. They were able to repopulate the spinal cord with nerve cells that they derived from embryonic stem cells. The new cells survived, and reconnected with previously paralyzed muscles, with a dramatic improvement in leg muscle function. They would now hope to extend these studies using a rodent model of human polio. The hope that this could offer to patients paralyzed by polio and other such diseases is truly thrilling.

The investigators in our internationally-recognized Cardiovascular Research Institute are very excited at the prospect of using cardiac myocytes derived from embryonic stem cells to study and potentially develop therapies for disorders of cardiac electrical excitability and contractility, including arrhythmias and heart failure.

The talented scientists in our Department of Microbiology and Immunology have a remarkable model of immunodeficient mice that places them in a perfect position to use human stem cells.

(more)

## **Stem cell initiative support, continued**

When implanted in these mice, human stem cells grow freely and differentiate into a complete human immune system. This is a powerful model in their studies of how some viruses (such as HIV, herpes, Epstein-Barr virus, cytomegalovirus, the HTLV-1 leukemia virus, and others) attack only human cells, and in testing anti-viral regimens against a bevy of such viruses. This unique model has potentially direct commercial applicability in testing antiviral and chemotherapeutic agents, and would in itself place our institution at the forefront of such technology

Our faculty would be particularly excited at the prospect of a stem cell initiative that would broaden the range of stem cell lines beyond the limited ones currently available. The problems with the current embryonic stem cell lines are well-documented in the literature. Having the ability to use and develop new human embryonic stem cells in New York State would significantly advance the profile of research throughout the state, and in SUNY.

In the final analysis, stem cell research would help us build upon our interdisciplinary strengths and would fit well in our strategic plans to expand our research enterprise, both on this campus and throughout SUNY.