

2012 Program Report Card: University of Connecticut Stem Cell Institute (UCSCI)

Quality of Life Result: All Connecticut residents live free of disease and of the lingering effects of bodily injury.

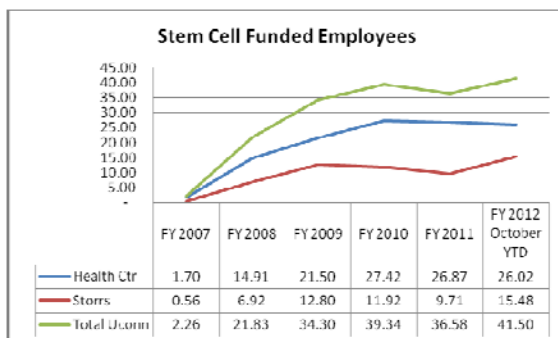
Contribution to the Result: Building on its existing research strengths, UCSCI (stem cell program) contributes to this end result because it seeks to develop medicine and therapies to cure and eradicate disease and repair injured tissues.

Program Expenditures	State Funding	Federal Funding	Other Funding	Total Funding
Actual FY 11	0	\$11,197,191	\$4,179,069	\$15,376,260
Estimated FY 12		\$10,000,000	\$6,250,000	\$16,250,000

Partners: State of Connecticut, Department of Public Health, Connecticut Innovations, NIH, Wesleyan University, Yale University

How Much Did We Do?

Total Full Time Equivalents funded on Stem Cell Grants



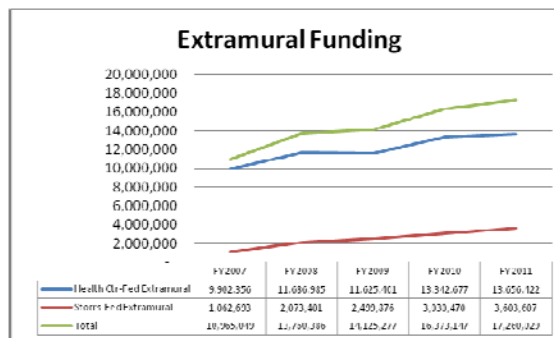
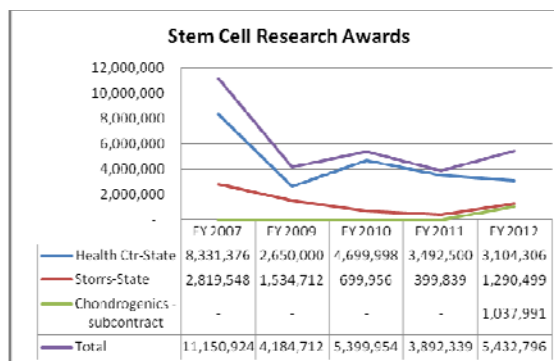
Story behind the baseline:

There are forty laboratories supported by this initiative with a wide range of research projects. A major component of Stem Cell research is housed in the new \$52 million Cell and Genome Sciences building at the Uconn Health Center in Farmington, equipped with the latest technologies for studying stem cells and their genomes. This site brings together scientists working in stem cells into a cross-disciplinary and collaborative setting. The Cell and Genome Sciences Building consolidates equipment and staffing resources to coordinate research within and outside the University. Three companies are leasing space in the Technology Incubator Program: DRG (Doctors Research Group) - working to utilize stem cells in bone cement products, Cheminpharma LLC - developing in house, novel drug discovery projects in the cancer therapeutic area, and Chondrogenics - in preclinical testing using chondrogenic cells derived from human embryonic stem cells to repair joint cartilage damaged by injury or aging.

Trend: ▲

How Well Did We Do It?

The amount of awards received by the Health Center and Storrs.



Story behind the baseline:

For the first five rounds of competition for Connecticut stem cell funding, UCSCI investigators have successfully competed for \$29.02 million of support. This amount leads

all state institutions all other funded entities. The majority of the UCSCI investigators received funding from the Connecticut State Stem Cell Fund. Total Stem Cell funding available through June 30, 2007 was \$20M and \$10M for each fiscal year through 2015 (currently awarded fiscal years 2008/09, 2009/10, 2010/11 and 2011/12). In 2012, 79 grants were submitted statewide for a total of \$33.1M, of which UConn submitted 36 grants and received 9 awards for a total \$4.4M. In addition, Chondrogenics was awarded \$1.29 million, of which \$1 million is subcontracted back to UCHC. The combined total funding is \$30 million in support.

The Extramural Funding graph represents funding from other sources for principle investigators' in the Stem Cell Institute.

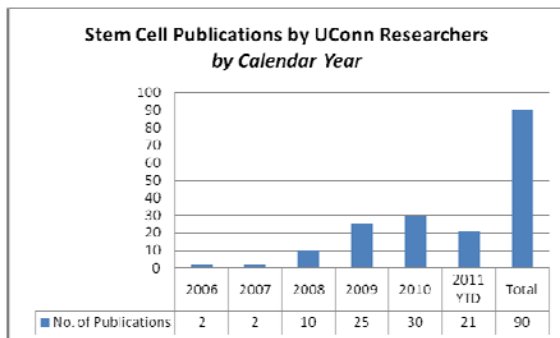
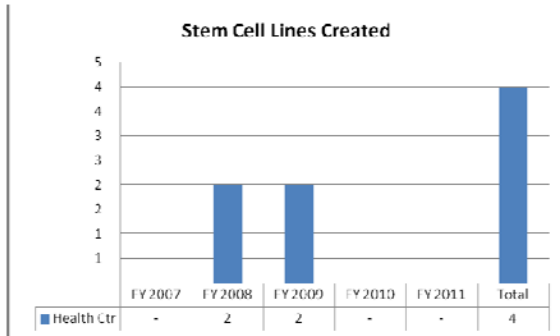
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Is Anyone Better Off?

Stem Cell Lines Created by Fiscal Year and Publications by Calendar Year



Story behind the baseline:

Cells in the body are differentiated to perform specific functions. Once formed these cells cannot change function to become a different cell type (i.e., a muscle cell cannot later become a bone cell). In contrast, a stem cell is an undifferentiated cell that has the potential to become any cell type present in the body. However, when the stem cell differentiates into a specific cell, a muscle cell for example, it can no longer differentiate into other cell types. A stem cell line is a specially created population of undifferentiated cells, that can continuously renew themselves and, given proper conditions, are able to become other cell types with specific functions like

muscles, neurons, and blood cells. These functional cells can be implanted to the body to replace damaged or diseased muscles, neurons or blood cells. Created stem cell lines can be endlessly expanded, frozen, thawed, and distributed. So they can be available, theoretically, forever. The techniques to produce human embryonic stem cell lines from donated embryos are highly specialized and their derivation has been accomplished successfully in less than ten academic institutions in the United States, including the Stem Cell Core at the University of Connecticut. The National Institutes of Health soon plans to expand the number of human embryonic stem cell lines that qualify for federal funding to 91. Of these, four will come to the State of Connecticut. These four lines, produced in the University of Connecticut Stem Cell Core, will then be available to researchers across the United States and throughout the world.

The success of research is primarily measured by the number and impact of publications. The value of publications is that it represents the avenue to communicate research results to the scientific and general public. Also, publications are the most important criteria for evaluating merits in regards to scientific awards for funding opportunities.

Trend: ▲

Proposed Actions to Turn the Curve:

Maintain or increase number of employees funded by Stem Cell Research funds which in turn will save jobs in the state of Connecticut or create more jobs.

Increase Federal funding now that Pres. Obama removed the restrictions set by Pres. Bush on federal funding for research on human embryonic stem cell lines derived after Aug. 2001. However, all the lines must be first registered at the NIH if the informed consent form for the embryo donation to derive the lines ethically meets requirements set by the NIH.

Currently most stem cell lines have been derived and cultured in contact with animal products. We need to derive new stem cell lines under animal-free conditions, so they are biologically safe when used to treat patients. This is a goal of the stem cell core to create these lines.

Data Development Agenda:

Many stem cell labs are currently working on disease-associated iPS cells derived from patients. These cell lines could potentially lead to new therapies for diseases. We are currently exploring ways to report how stem cell lines contribute to new discoveries and cures.