



Visionary Seminar Series at USC

Friday, February 27, 2015 at 1 PM

Ray R Irani Hall Conference Room 101



Mary Loeken

**Associate Professor
Joslin Diabetes Center
Harvard Medical School**

“Regulation of embryogenesis and stem cell characteristics by metabolism: Insights gained from study of birth defects in diabetic pregnancy”

Diabetic women are at increased risk for having a baby with a congenital malformation. The most common malformations are neural tube defects (NTDs) and cardiac outflow tract defects (COTDs). We have developed a mouse model of diabetic pregnancy to study how these defects occur. Our mouse embryo studies have been complemented with studies using glucose-sensitive embryonic stem cells (ESC) that can be induced to form neuronal precursors. I will describe a pathway that we have elucidated to explain how excess glucose delivery to embryos alters expression of essential embryonic genes and leads to NTDs and COTDs. Our data suggest a model in which fuel metabolism regulates expression of genes that control pluripotency and self-renewal and that is why these genes are required for embryonic differentiation.

Host: Provost Professor Scott Fraser
1050 Childs Way, Los Angeles, CA 90089 Tel: 213-740-2233