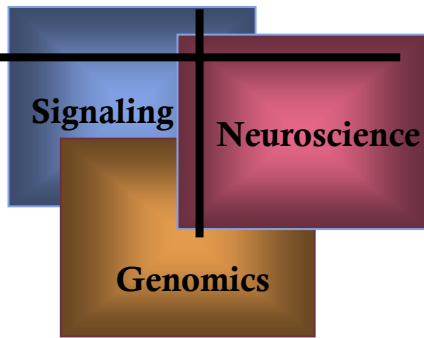


## Department of Pharmacology



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the Seminar Series:



### ***Frontiers in Pharmacology***

**Mark Noble, Ph.D.**

Department of Biomedical Genetics

University of Rochester

“Stem Cell Medicine: Building the Comprehensive Plan”

While cell transplantation and recruitment of endogenous stem and progenitor cells are important components of stem cell medicine, they represent only a fraction of the potential of this nascent field. One goal of our work has been to develop other components of this field, and to do so in a manner that facilitates discovery of general principles that cut across disease boundaries. Several examples of the problems to be discussed are optimization of strategies for tissue repair, understanding the central importance of precursor cell dysfunction in both environmentally-regulated and heritable developmental maladies, and the development of the field of stem cell physiology. This last topic, with a particular focus on redox control of cell function, has provided multiple new insights into problems ranging from the control of developmental timing to toxicological analysis to autism. One of the novel regulatory pathways discovered through this analysis, the redox/Fyn/c-Cbl pathway converts small changes in redox balance into accelerated degradation of receptor tyrosine kinases, and provides one of the only examples thus far of a pathway that provides a mechanistic understanding of cell function that extends from changes in metabolite levels to signaling pathway function to transcriptional regulation. This pathway turns out to be central to problems as diverse as understanding the developmental effects of toxicant exposure to understanding how systemic exposure to multiple chemotherapeutic agents converge to cause extensive neurological damage, and also provides rational targets for intervention in multiple diseases.

Contact: Elva Diaz, Ph.D; email: [ediaz@ucdavis.edu](mailto:ediaz@ucdavis.edu)

Friday, Sept. 28, 2007

10:00 am

Auditorium (Room 1005) in GBSF

For future seminar information for Pharmacology:

<http://www.ucdmc.ucdavis.edu/pharmacology/>