

# An Interdisciplinary Approach to Deciphering Extracellular Matrix-Induced Stem Cell Differentiation

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## Abstract

To date, the potential of stem cell therapy has suffered from an incomplete understanding of the mechanisms governing the growth and directed differentiation of most stem cell types. We have established an *in vitro* model system for inducing differentiation of adult human mesenchymal stem cells with extracellular matrix (ECM) molecules and application of tensile strain. This talk will summarize the work resulting from our combination of cell & molecular biology, systems analysis, graph theory, and modeling techniques to investigate the interplay between these cells and the ECM during differentiation.

## Biography

BA, University of California, San Diego 1986

PhD, Harvard University (Cell & Developmental Biology, Don Ingber advisor) 1993

Postdoc, Vito Quaranta MD, The Scripps Research Institute, La Jolla CA 1994-1997

Assistant Professor, University of Nevada, Las Vegas, Dept. of Biological Sciences 1997-2001

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