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ABSTRACT DEADLINE: JUNE 21, 2005

REMINDER: *In fairness to all potential authors, late abstracts will not be accepted.*

MRS Symposium K: Engineering Bionterfaces via Cell-Interactive Materials

This symposium will focus on the use of materials for controlled structural, biochemical, and biomolecular interactions with living cellular systems. An emphasis will be placed on 1) understanding and exploiting the role of materials chemistry, size scales (geometry), and other properties on the incorporation or display of new or emerging biomolecules and ligands; and 2) understanding and exploiting the performance of cellular systems through controlled interactions with engineered biomaterials. Cell-material interactions can be engineered on the extracellular level, e.g., material-membrane or material-receptor recognition, or intracellular level, e.g., cytosolic, endocytic, or nuclear recognition. Specific areas of interest include new or creatively engineered materials for functional tissue engineering, stem cell bioengineering, cell-based biosensors, intracellular molecular beacons, cell-targeted drug and biomolecule delivery, and microscale-through-nanoscale ligand presentation. The aim of this symposium is to provide a forum for materials scientists and engineers, chemists, biologists, engineers, and clinicians to exchange information and ideas within a multidisciplinary environment.

Topics include, but are not limited to:

- Synthesis and characterization of novel materials for controlled cellular interactions
- Cellular growth and differentiation on biomaterials
- Biomaterials for modulating intracellular processes
- Biomimetic materials
- Tissue-analog polymers: hydrogels, engineered membranes, vesicles, etc.
- Gene delivery and gene-modulating polymers
- Quantitative modeling of performance of cell-interactive materials
- Nanoscale processing of scaffolds and substrates for cell and tissue engineering
- Micro- and mesoscale fabrication and biodeposition
- Biosensors and bioactuators for cell-derived or cell-based biorecognition

Invited speakers (tentative) include: **Ashutosh Chilkoti** (Duke Univ.), **Andres Garcia** (Georgia Inst. of Technology), **James Harden** (Johns Hopkins Univ.), **Efrosini Kokkoli** (Univ. of Minnesota), **Camilla Mohrdeieck** (Univ. Stuttgart, Germany), **Charles Roth** (Rutgers Univ.), **Joachim Spatz** (Univ. of Heidelberg, Germany), and **Marcus Textor** (Swiss Federal Inst. of Technology, Switzerland).

Symposium Organizers

Prabhas Moghe

Rutgers, The State University of New Jersey, Depts. of Biomedical Engineering and Chemical & Biochemical Engineering, 98 Brett Rd., Piscataway, NJ 08854
Tel 732-445-4951, Fax 732-445-2581, moghe@rci.rutgers.edu

David Kaplan

Tufts University, Dept. of Chemical & Biological Engineering
4 Colby St., Medford, MA 02155
Tel 617-627-3251, Fax 617-627-3991, david.kaplan@tufts.edu

Susan Enders

Max-Planck-Institute for Metals Research
Heisenbergstrasse 3, D-70569 Stuttgart, Germany
Tel 49-711-689-3424, Fax 49-711-689-3412, enders@mf.mpg.de

Shrirang Ranade

Boston Scientific Corporation
Corporate Research & Advanced Technology Development
One Boston Scientific Pl., Natick, MA 01760
Tel 508-652-5143, Fax 508-647-2488, ranades@bsci.com

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