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CALL FOR PAPERS

ABSTRACT DEADLINE: JUNE 21, 2005

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

MRS Symposium J: Biomimetic Polymers and Gels

This symposium will focus on the design of biomimetic polymer and gel materials for applications in biology and medicine. Novel material concepts and the availability of an ever-wider range of building blocks, both biological and synthetic, have opened up productive new areas of research in the development of biocompatible materials. New ways of tailoring the physical and chemical properties of polymer and gel materials have been found, and a better understanding of how these properties influence cell behavior and tissue growth has been achieved. This has led to applications in diverse areas including controlled drug delivery, tissue engineering, synthetic replacements for biological tissues, implants, and medical devices. The symposium will cover topics ranging from synthesis of new materials to applications in tissue engineering, drug delivery, and medical diagnostic applications.

Proposed topics include, but are not limited to:

- Synthesis of new materials
- Applications in drug delivery
- Medical diagnostics
- Construction of polymer-based materials with novel mechanical properties
- Active gels and gels possessing tensegrity
- Investigation of cell-gel interactions and how these influence tissue growth
- Controlling network nucleation, branching, and/or cross linking by biological molecules
- Intracellular networks (e.g., actin and tubulin)
- Extracellular matrix (e.g., laminin and collagen)
- Intercellular structures (e.g., cartilage and tendon)
- Networks involved in wound healing (e.g., fibrin and collagen)

The symposium will encourage materials scientists and engineers to apply their models to address targeted biological problems in cell and tissue biology, and to develop new methods for measuring and controlling biomolecular interactions.

Invited speakers (tentative) include: **Eric J. Amis** (National Inst. of Standards & Technology), **Kristi S. Anseth** (Univ. of Colorado), **Rama Bansil** (Boston Univ.), **Peter J. Basser** (NIH), **Victor Barocas** (Univ. of Minnesota), **Stefaan De Smedt** (Univ. of Ghent, Belgium), **Jack F. Douglas** (National Inst. of Standards and Technology), **Achim Goepferich** (Regensburg Univ., Germany), **Alan J. Grodzinsky** (Massachusetts Inst. of Technology), **Boualem Hammouda** (National Inst. of Standards and Technology), **Jeffery Hubbell** (Univ. of Zurich, Switzerland), **Donald Ingber** (Harvard/Children's Hospital), **Paul Janmey** (Pennsylvania State Univ.), **John Kerrigan** (Univ. of Medicine & Dentistry of New Jersey), **Robert Langer** (Massachusetts Inst. of Technology), **Andreas Lendlein** (MnemoScience, Germany), **David J. Mooney** (Univ. of Michigan), **George Pins** (Worcester Polytechnic Inst.), **Julia M. Polak** (Imperial College of Science, Univ. of London, United Kingdom), **Rene Schloss** and **David Shreiber** (Rutgers Univ.).

Symposium Organizers

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