

The KAVLI NANOSCIENCE INSTITUTE [KNI] at Caltech

The Next Generation of Medical Diagnostics: Applications of Nanotechnology

March 4, 2008

10:30 a.m. to 5:00 p.m.

California Institute of Technology

Pasadena, California



Advances in nanotechnology have the potential to revolutionize medical diagnosis and therapy. Nanotechnology-based platforms for the high-throughput, multiplexed detection of proteins and nucleic acids promise to bring substantial advances in molecular medicine. Such platforms will greatly enhance the speed, accuracy, capabilities and cost-effectiveness of in vitro diagnostic testing, providing real time results for early detection without invasive testing.

This Symposium will present cutting edge medical diagnostic research advances from Caltech labs; provide insights into future medical devices from an industry perspective; and share a new vision for patient care.

Caltech Presenters include:

- **David Baltimore**, Millikan Professor of Biology; Nobel Laureate
The New Age of Nanoscale Diagnostics
- **Michael Roukes**, Professor of Physics, Applied Physics, and Bioengineering; Co-Founder/Director, Alliance for Nanosystems VLSI
Next-Generation Biological Large-Scale-Integration
- **Nate Lewis**, George L. Argyros Professor and Professor of Chemistry
Breath-Based Diagnostic Detection of Lung Cancer
- **Changhuei Yang**, Assistant Professor of Electrical Engineering and Bioengineering
Optofluidic Microscopy: A Method for Building Microscopic Microscopes
- **Scott Fraser**, Anna L. Rosen Professor of Biology; Director, Caltech Biological Imaging Center
Building Sensors with Single-Molecule Sensitivity
- **Axel Sherer**, Bernard A. Neches Professor of Electrical Engineering, Applied Physics, and Physics; Director, Kavli Nanoscience Institute, Caltech
Integrated Microfluidic Diagnostic Systems
- **Jim Heath**, Elizabeth W. Gilloon Professor and Professor of Chemistry; Director, NanoSystems Biology Cancer Center
Technologies for Making *In Vitro* Diagnostics Cheap

From USC

- **Richard J. Cote**, M.D., Professor of Pathology and Urology; Director, Biomedical Nanosciences Initiative; USC School of Medicine, Norris Comprehensive Cancer Center
Patient Treatment: The Future of Diagnostic Tools

From Industry

- **Joseph M. Beechem**, Ph.D., Vice President, Corporate Research Lab & CTO, Invitrogen Corp
- **Andre Ruzysky**, Ph.D., Vice President, Technology Assessment, Ortho-Clinical Diagnostics, A Johnson & Johnson Company
- **Christopher Amies**, Ph.D., Sr. Vice President for Advanced Clinical Innovation, Siemens

For more information and to register, go to:

<http://www.kni.caltech.edu/next-generation-2008/>