

MISSOURI NANOTECHNOLOGY ALLIANCE

The second annual meeting

November 11-12, 2005

Sponsored by: The *Research Alliance of Missouri* (RAM)

Hosted by: The *UMKC School of Dentistry*

Friday: 1:00pm-5:00 pm

Saturday: 8:00am - 5:30pm

Second Floor: UMKC School of Dentistry

Nanotechnology at the Interface with Life Sciences Research

Overview

The second Annual Meeting of the Missouri Nanotechnology Alliance will be held in Kansas City on November 11 and 12, 2005. The theme for this Conference is “Nanotechnology at the Interface with Life Sciences Research” and it promises to be an exciting opportunity to hear about the latest initiatives and research in this area. This Conference is supported by the Research Alliance of Missouri.

This Conference provides an ideal venue for interaction between scientists, engineers, and clinical investigators conducting research relevant to nanotechnology and the life sciences. The Conference should be especially attractive to investigators and students who want to learn about the latest funding opportunities relevant to nanoscience and nanotechnology.

Research officers representing federal and state agencies will discuss initiatives relevant to nanoscience and nanotechnology. Researchers from Colleges throughout Missouri and Kansas will be presenting their work in areas such as nanomedicine, pharmaceutical sciences, nanoeducation, and materials science. Conference participants will have the opportunity to interact with scientists and innovators from regional industries investing in Nanotechnology at the Interface with Life Sciences Research. We look forward to you joining us in Kansas City for this Conference on November 11 and 12, 2005.

Who should attend: Pharmaceutical scientists, life scientists, tissue engineers, engineers & scientists with research interests and efforts in understanding structure, property and function at multi-scale resolutions ranging from the nano- to system-level, students, educators, administrators, and industry leaders.

Friday, November 11

Scientific program begins at 1PM, Room 202 of the University of Missouri-Kansas City School of Dentistry, 650 E. 25th Street, Kansas City, MO

Welcome

Opening remarks:

- Dr. Steve Lehmkuhle, Interim Chancellor
- Dr. Bruce Bubacz, Interim Provost
- Dr. Michael Reed, Dean of the UMKC School of Dentistry

NIH Program Officer: Dr. Greg Downing, Director Office of Technology & Industrial Relations, National Cancer Institute (had to cancel)

Kansas City Area Life Sciences Institute: Dr. Bill Duncan

Local businesses:

Dr. Daniel E. Bowen and Dr. Ambrose Wolf, *National Nuclear Security Administration's Kansas City Plant*, Operated by Honeywell Federal Manufacturing & Technologies, LLC
Dr. David Jones, *NanoScale Materials, Inc.*, Manhattan KS and U. Kansas Chemical Engineering

Reception at 5:30PM Friday

Saturday, November 12

Continental breakfast at 8AM and Poster Set-Up

Scientific session begins at 8:30AM and presentations divided into following broad areas:

Room 202: Nanotechnology, Pharmaceutical Sciences & Nanoeducation:

Moderator: Ganesh Thiagarajan (UMKC - Civil Engineering)

- Ashim Mitra (UMKC): "Nanotechnology in Drug Delivery"
- Elizabeth Topp (KU): "Nanotech Approaches to Drug Formulation and Delivery"
- Phil Fraundorf (UMSL): "Widening the Impact: Informal, Intro & Industry NanoEducation"
- Jimmy Liu (Monsanto): "Nanobiotechnology: The Fusion of Disciplines"
- Ron Barrett-Gonzalez (KU): "Adaptive Materials and Structures - Transfer of Aerospace Technology to Pharmaceutical and Medical Sciences"
- Michael C. Jackson (President/CEO of Microjek), on the world's smallest available micro-injection needles (<http://www.microjek.com>; mjackson@microjek.com).

Room 209: Nanotechnology as it Interfaces with Material Science and Imaging:

Moderator: Mary Walker (Director of Dental BioMaterials - UMKC)

- Shubhra Gangopadhyay (MU-Columbia): "Nanoscale self-assembly and its applications in Material Science"
- Yong Wang (UMKC): "Structure, Property and Functional Imaging from Nano- to Micro-Scales"
- Anil Misra (UMKC): "Nano and Micro-Scale Mathematical Models"
- Kartik Ghosh (Missouri State University): "Magnetic Nanostructures for Spintronic Devices"
- Jee-Ching Wang (UMR): "Applications of Atomistic Computer Simulations in Nanoscience and Bioseparation"
- Steve Buckner (SLU): "Chemical Sensing Applications Using Nanostructures"
- Sanju Gupta (Missouri State University): "Self-assembled Conducting Polymer Micro/Nanostructures for Biological Applications"

Room 217a: Nanotechnology, Nanomedicine and Life Sciences:

Moderator: Trent Guess (UMKC - Mechanical Engineering)

- Kattesh Katti (MU-Columbia): "Design and Development of Biocompatible Gold Nanoparticles for Imaging and Therapy"
- Delbert Day (UM-Rolla): "Medical applications for nanocrystalline hydroxapatite"
- Kevin Gillis (MU-Columbia): "Microchip devices to measure hormone and neurotransmitter release: building a neuro-machine synapse"
- Ken Klabunde (K-State): "Reactive nanoparticles: Unusual chemical and biological properties"
- Sheila Grant (MU-Columbia): "The role of nanotechnology in biosensor development"
- Gabor Forgacs (University of MO-Columbia): "Measuring and using intracellular viscoelasticity at the nanoscale to improve on the yield of oocyte cryopreservation".
- Bill Brooks (University of Kansas Medical Center, Hogle Brain Imaging Center): "High field magnetic resonance imaging facility: Resource for regional nanoscientists"

Box Lunch provided for all Conference participants.

Saturday afternoon session:

The afternoon session will be devoted to a panel discussion on building and maintaining interdisciplinary research collaborations. What works and what doesn't; techniques to build effective collaborations; promoting collaboration among scientists at geographically separate institutions.

Dr. Keith Gary, *Kansas City Area Life Sciences Institute*, will serve as Chair and Moderator for the Panel.

Panel participants include investigators and research officers.

Investigators: David Eick (UMKC), Lynda Bonewald (UMKC), Phil Fraundorf (UMSL), Ron Dougherty (KU), Alan Glaros (Kansas City University of Medicine and Biosciences)

Research Officers and Administrators: John Baumann (UMKC), Glen Marotz (KU), James Coleman (UMC), Nassar Arshadi (UMSL), Keith Roberts (Kansas City University of Medicine and Biosciences), William Caskey (Children's Mercy Hospital)

Abbreviations for Participating Institutions: University of Missouri-Kansas City (UMKC), University of Missouri-Columbia (MU-Columbia), University of Missouri-St. Louis (UMSL), University of Missouri-Rolla (UM-Rolla), University of Kansas (KU), Kansas State University (K-State), Saint Louis University (SLU)

Please call 816-235-2142 to register for this conference.

Registration fee is \$25 which includes the program as well as Friday night reception, Saturday continental breakfast and box lunch. Registration fee waived for all presenters, panel participants and moderators. Registration fee is also waived for students, but they must call to register.

Detailed map and parking information will soon be available on the website.