

The background features a stylized illustration of a blue, hexagonal nanotube-like structure on a green base. Several orange spheres are shown, some attached to a thin rod and others floating nearby. A blue and purple sphere pair is also visible. The overall design is colorful and scientific, with a red and yellow border at the top and bottom.

# NANOMEDICINE Research Day

March 23, 2007

*Hosted by*

The University of Maryland School of Pharmacy  
Center for Nanomedicine and Cellular Delivery

HSFII Auditorium

# Nanomedicine Research Day

2007

## Welcome

to the inaugural Nanomedicine Research Day, hosted by the Center for Nanomedicine and Cellular Delivery in the University of Maryland School of Pharmacy.

The purpose of this symposium is to provide an overview of the research activities of the center and the local/regional nanomedicine community in an attempt to foster interactions in this new area of research.

The convergence of recent advances in nanotechnology with modern biology and medicine has created the new research domain of *nanobiotechnology*. The use of nanobiotechnology in medicine is termed *nanomedicine*. Nanomedicine research includes the development of diagnostics for rapid monitoring, targeted cancer therapies, localized drug delivery, improved cell material interactions, scaffolds for tissue engineering, and gene delivery systems.

The Center for Nanomedicine and Cellular Delivery in the School of Pharmacy is an Organized Research Center based at the University of Maryland, Baltimore with membership spanning the University System of Maryland campuses. The mission of the center is to create a multidisciplinary research environment that will provide expertise and foster collaborations for the design, development, and clinical translation of nanosystems for therapy and diagnosis.

To learn more, visit: <http://www.pharmacy.umaryland.edu/nanomedicine>.

### Director

Hamid Ghandehari, PhD  
Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy

### Registration

The deadline for registration has been extended to March 16, 2007. To register please e-mail your name, affiliation, and contact information to [nanomedicine@rx.umaryland.edu](mailto:nanomedicine@rx.umaryland.edu). Registration is on a first-come, first-served basis and is limited to 100 attendees only.

### Co-organizers

Douglas English, PhD  
Chemistry and Biochemistry  
University of Maryland, College Park

Bruce Line, MD  
Diagnostic Radiology  
University of Maryland, Baltimore

Anjan Nan, PhD  
Pharmaceutical Sciences  
University of Maryland, Baltimore

# Program

---

**8:00-8:30 a.m.**      *Registration/Continental Breakfast*

**8:30-8:50 a.m.**      *Introductory Remarks*  
David A. Knapp, PhD  
Dean, University of Maryland School of Pharmacy

William E. Kirwan, PhD  
Chancellor, University System of Maryland

David J. Ramsay, DM, DPhil  
President, University of Maryland, Baltimore

Natalie Eddington, PhD  
Professor and Chair, Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy

**8:50-9:00 a.m.**      *Center for Nanomedicine and Cellular Delivery: An Overview*  
Hamid Ghandehari, PhD  
Associate Professor and Director  
Center for Nanomedicine and Cellular Delivery  
University of Maryland School of Pharmacy

## **Session I**      *Nanomedicine and Cancer Therapy*

**Moderators:**      Edward Sausville, MD, PhD  
Professor and Associate Director for Clinical Research  
University of Maryland Marlene and Stewart Greenebaum Cancer Center

William Bentley, PhD  
Professor and Chair  
Department of Bioengineering  
University of Maryland, College Park

**9:00-9:15 a.m.**      *Nanopolymer, Cancer Imaging and Radiotherapy*  
Bruce Line, MD  
Professor of Diagnostic Radiology  
Director  
Division of Nuclear Medicine  
University of Maryland School of Medicine

**9:15-9:30 a.m.**      *Nanomedicine: An Industrial Perspective*  
Larry Tamarkin, PhD  
President and CEO  
CytImmune Sciences, Inc., Rockville, Md.

# Program

---

- 9:30-9:45 a.m.**      *Novel Gene Therapy Approaches Towards Cancer*  
James Mixson, MD  
Associate Professor  
Department of Pathology  
University of Maryland School of Medicine
- 9:45-10:00 a.m.**      *Animal Models for Targeted Delivery of Nanoparticles to Tumors*  
Angelika Burger, PhD  
Associate Professor and Director  
Translational Core Laboratory  
University of Maryland Marlene and Stewart Greenebaum Cancer Center
- 10:00-10:15 a.m.**      *Coffee Break*
- Session II**              ***Nanotechnology and Drug Delivery***
- Moderators:**              Anjan Nan, PhD  
Research Assistant Professor  
Center for Nanomedicine and Cellular Delivery  
University of Maryland School of Pharmacy
- Kenneth Bauer Jr., PharmD, PhD  
Assistant Professor  
Department of Pharmacy Practice and Science  
University of Maryland School of Pharmacy
- 10:15-10:30 a.m.**      *Dendritic Biomaterials for Oral Drug Delivery*  
Hamid Ghandehari, PhD  
Associate Professor and Director  
Center for Nanomedicine and Cellular Delivery  
University of Maryland School of Pharmacy
- 10:30-10:45 a.m.**      *Microelectromechanical Systems for Oral Drug Delivery*  
Peter Swaan, PhD  
Associate Professor and Co-director  
Center for Nanomedicine and Cellular Delivery  
University of Maryland School of Pharmacy

## *Nanomedicine Research Day*

---

**10:45-11:00 a.m.**     *Hybrid Nanoparticles for Controlled Chemical Delivery: National Science Foundation-Nanoscale Interdisciplinary Research Teams Overview*  
Douglas English, PhD  
Assistant Professor  
Department of Chemistry and Biochemistry  
University of Maryland, College Park

**11:00-11:15 a.m.**     *Delivery of Agents by Modulating Junctions with Zot*  
Natalie Eddington, PhD  
Professor and Chair  
Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy

**11:15-11:30 a.m.**     *Magnetic Silica Nanotubes for Targeted Drug Delivery*  
Anjan Nan, PhD  
Research Assistant Professor  
Center for Nanomedicine and Cellular Delivery  
University of Maryland School of Pharmacy

**11:30-1:00 p.m.**     *Lunch*

### **Session III**     *Nanomedicine Engineering, Characterization, and Evaluation*

**Moderators:**     Gregory Payne, PhD  
Professor and Director  
Center for Biosystems Research  
University of Maryland Biotechnology Institute

James Polli, PhD  
Associate Professor  
Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy

**1:00-1:15 p.m.**     *Plasmon Controlled Fluorescence and Its Applications to Diagnostic Medicine*  
Joseph R. Lakowicz, PhD  
Professor and Director  
Center for Fluorescence Spectroscopy  
University of Maryland School of Medicine

# Program

---

- 1:15-1:30 p.m.**      *Cell Clinics*  
Pamela Abshire, PhD  
Assistant Professor  
Electrical and Computer Engineering and the  
Institute for Systems Research  
University of Maryland, College Park
- 1:30-1:45 p.m.**      *Electron Paramagnetic Resonance Imaging of Oxygen in the Brain*  
Gerald Rosen, PhD, JD  
Professor  
Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy
- 1:45-2:00 p.m.**      *Delivery of Nano-objects to Cellular Sub-Domains*  
Valeriy Lukyanenko, PhD  
Assistant Professor  
University of Maryland Biotechnology Institute
- 2:00-2:15 p.m.**      *Controlling Biology at the Nanoscale: Next Generation BioChips  
for Drug Discovery*  
Gary Rubloff, PhD  
Professor  
Department of Materials Science and Engineering and the  
Institute for Systems Research  
Director  
Maryland NanoCenter  
University of Maryland, College Park
- 2:15-2:30 p.m.**      *Coffee Break*
- Session IV**      ***Nanomedicine Perspectives on Development and Regulation***
- Moderators:**      Nakissa Sadrieh, PhD  
Associate Director for Research Policy and Implementation  
U.S. Food and Drug Administration, Silver Spring, Md.
- Gerald Rosen, PhD, JD  
Professor  
Department of Pharmaceutical Sciences  
University of Maryland School of Pharmacy

## *Nanomedicine Research Day*

---

- 2:30-2:45 p.m.**      *Nanomedicine Research: Translating Discoveries Into Clinical Care*  
Edward Sausville, MD, PhD  
Professor and Associate Director for Clinical Research  
University of Maryland Marlene and Stewart Greenebaum Cancer Center
- 2:45-3:00 p.m.**      *New Technology and Clinical Applications of Nanomedicine*  
Chiming Wei, MD, PhD, FACC, FAHA, FAAN  
President  
American Academy of Nanomedicine
- 3:00-3:15 p.m.**      *Potential Issues in Nanomedicine Development*  
Chang Ahn, PhD  
Chairman and CEO  
Rexahn Pharmaceuticals, Rockville, Md.
- 3:15-3:30 p.m.**      *Legal Aspects of Nanomedicine*  
Robin Wilson, JD  
Professor  
University of Maryland School of Law
- 3:30-3:45 p.m.**      *Nanomedicine: An FDA Perspective*  
Nakissa Sadrieh, PhD  
Associate Director for Research Policy and Implementation  
U.S. Food and Drug Administration, Silver Spring, Md.
- 3:45-4:00 p.m.**      *Association for Nanobiotechnology*  
Martin Woodle, PhD  
Chief Scientific Officer and Founder  
Intradigm Corporation, Rockville, Md.
- 4:00 p.m.**              *Adjourn*



