

Program for:
**Second Annual Conference of the
 American Society for Nanomedicine**

Bolger Center, Potomac, Maryland

Conference Organizers:

Lajos Balogh, Ph.D.

Raj Bawa, Ph.D.

Esther H. Chang, Ph.D.

Charles W. Flexner, M.D.

Marianna Foldvari, Ph.D.

Tia Frazier, R.N., M.S.

Sharon L. Hillier, Ph.D

Darrell J. Irvine, Ph.D

Peter Kim, M.D.

Kuan Wang, Ph.D.

Thursday, October 14, 2010

8:00 am-6:30 pm **Registration** (outside the auditorium in the Main Building)

9:00 am **Welcome and Introduction**

PART I: NANO & EMERGING TECHNOLOGIES FOR HIV/AIDS

Session 1: Covering the Basics

Chairs: **James Turpin**, *DAIDS/NIAID/NIH*
 Kuan Wang, *NLAMS/NIH*

Introduction: HIV/AIDS

9:10 am Bruce Walker, *Ragon Institute of MGH, MIT, and Harvard*
 “The Ongoing AIDS crisis: Challenges and Opportunities”

9:40 am Susan Swindells, *U. of Nebraska Medical Center*
 “Current Paradigms for Treatment and Prevention of Chronic HIV Infection:
 Opportunities for Nanomedicine”

10:10 am Discussion

10:25 am **Break & Poster Viewing**

Introduction: Nano

10:45 am Donald Tomalia, *Central Michigan U.*
 “Nanomedicine: Its Impact on Biology, Pharma Delivery, MRI Imaging and Polyvalent
 Therapies”

11:15 am Raj Bawa, *Bawa Biotech Consulting and Rensselaer Polytechnic Institute*
 “Nanotherapeutics in Drug Delivery — An Overview”

11:45 am Discussion

12:00 pm **Lunch**

Session 2: Improving Delivery of Antiretroviral Drugs, Vaccines and Biomedical Prevention Modalities

Chairs: Jeffrey Jacobson, *Drexel U. College of Medicine*
Howard Gendelman, *U. of Nebraska Medical Center*

HIV Pharmacology and Product Development Issues

1:20 pm Charles Flexner, *Johns Hopkins U. Clinical Pharmacology*
“HIV Pharmacology and Product Development, 2010”

1:40 pm Andrew Owen, *U. of Liverpool*
“Nanoparticles for Oral Antiretroviral Drug Delivery: Balancing Efficacy and Safety”

2:00 pm Discussion

Vaccines

2:15 pm Darrell Irvine, *Ragon Institute of MGH, MIT, and Harvard*
“Challenges of HIV Vaccination & New Strategies in the Vaccine Effort”

2:35 pm Jeffrey Hubbell, *U. of Zurich*
“Lymph Node-Targeting and Mucosal-Penetrating Nanoparticle Vaccines”

2:55 pm Discussion

3:10 pm **Break & Poster Viewing**

Prevention Modalities

3:30 pm Ian McGowan, *U. of Pittsburgh School of Medicine*
“Nanotechnology and Microbicides for HIV Prevention”

3:50 pm Richard Cone, *Johns Hopkins U.*
“Mucus-Penetrating Nanoparticles (MPP) for Enhanced Delivery of Vaginal and Rectal Microbicides”

4:10 pm Discussion

Session 3: Characterization of Nanomedicine and FDA Perspectives

Chair: Massimo Cardinali, *NIAID/NIH*

Characterization of Nanomedicine

4:25 pm Anil Patri, *NCI Nanotechnology Characterization Laboratory*
“Clinical Translation of Nanomedicines: Progress and Pitfalls”

FDA Regulation for Nanomedicine

- 4:45 pm Nakissa Sadrieh, *FDA Research Policy and Implementation*
 “FDA/CDER Perspective on Characterization of Nanomedicine”
- 5:05 pm Discussion
- 5:20 pm **Social Hour**
- 6:20 pm **Dinner**

Friday, October 15, 2010**Session 4: Improving Understanding of HIV Pathogenesis and Reservoir Formation**

Chairs: David Margolis, *UNC School of Public Health*
 Lajos Balogh, *Nanomedicine: Nanotechnology, Biology and Medicine*

Tools to Study HIV Structure, Function and Pathogenesis

- 8:30 am Thomas Hope, *Northwestern U. Feinberg School of Medicine*
 “Gaining Insights into Sexual Transmission by Defining Interaction of HIV with Genital Mucosal Barriers”
- 8:50 am Sanford Simon, *Rockefeller University*
 “Dynamics of Viral Host Molecules in the Assembly of HIV-1”
- 9:10 am Discussion

Identifying and Targeting the Viral Reservoir

- 9:25 am Robert Siliciano, *Johns Hopkins U. School of Medicine*
 “Understanding How HAART Works”
- 9:45 am Mansoor Amiji, *Northeastern U. College of Health Sciences*
 “Nanotechnology Advances in the Prevention and Treatment of HIV/AIDS”
- 10:05 am Discussion

Strategic Plan for the National Nanotechnology Initiative (NNI)

- 10:20 am Travis Earles, *White House Office of Science and Technology Policy*
 “The National Nanotechnology Initiative: Strategy and Direction”
- 10:40 am **Break & Poster Viewing**

Session 5: Bioimaging and Other Applications for Disease and Treatment Evaluation

Chairs: **Paula Jacobs**, *NCI Cancer Imaging Program*
Marco Schito, *Vaccine Clinical Research Branch, NIAID/NIH*

Assays for the Evaluation of the Infected Individual

11:00 am Daniel Kuritzkes, *Harvard U. Infectious Disease/Partners AIDS Research Center*
 “Current Approaches to Quantifying and Characterizing HIV-1 in Infected Persons”

11:20 am Christopher Love, *MIT Department of Chemical Engineering*
 “Microtools for Profiling Immune Responses *ex vivo*”

11:40 am Discussion

Bio-imaging — In Vivo Viral Imaging

11:55 am Jacob Estes, *NCI Center for Cancer Research, AIDS and Cancer Virus Program*
 “SIV Mucosal Transmission: Early Host-Viral Dynamics *in vivo*”

12:15 pm Jacek Capala, *NCI Center for Cancer Research, Radiation Oncology Branch*
 “Molecular Targeting of HER2 for Diagnosis and Therapy of Cancer: A Step Toward Individualized Medicine”

12:35 pm Discussion

12:50 pm **Lunch**

1:40 pm **Group Photo**

Session 6: Oral Presentations for Winners of Poster Competition

2:00 pm Poster Awards

3:00 pm **Part I Summary**
 Rutledge Ellis-Behnke, *Ruprecht-Karls-University Heidelberg & MIT*

3:30 pm **Break & Poster Viewing**

PART II: RECENT ADVANCEMENTS IN NANOMEDICINE

3:50 pm **Session 7: Translational Nanomedicine and Nanomedicine in Clinical Trials**

Chair: **Patrick Lu**, *President and CEO, Sirnaomics Inc., USA*

Translational Nanomedicine (each speaker has 20 minutes to present, and 5 minutes Q&A)

Darrell Irvine, *Ragon Institute of MGH, MIT, and Harvard*
 “Therapeutic Cell Engineering Using Cell Surface-Conjugated Synthetic Nanoparticles”

Howard Gendelman, *U. of Nebraska Medical Center*
 “Developments of Antiretroviral Nanoparticles”

4:40 pm **Nanomedicine in Clinical Trials** (each speaker has 20 minutes to present, and 5 minutes Q&A)

Marianna Foldvari, *U. of Waterloo School of Pharmacy*
 “Development of a Topical Nanodelivery System and the Phase II Clinical Trial of Biphaxis™-Interferon Alpha for Cervical HPV Infections”

Kathleen Pirollo, *Georgetown University Medical Center*
 “Results from a Phase I Clinical Trial of a Tumor-targeting Nanocomplex for p53 Gene Therapy”

Julianna Lisziewicz, *Genetic Immunity*
 “DermaVir Therapeutic HIV Vaccine: Synthetic Nanomedicine Formulation, Dendritic Cell-Targeted Topical Administration and Phase II Clinical Data.”

5:55 pm **Dinner**

Saturday, October 16, 2010

8:30 am **Session 8: Regeneration and Tissue Engineering**

Chair: **Thomas Webster**, *Brown U. Divisions of Engineering and Orthopedic Surgery*
 (each speaker has 20 minutes to present, and 5 minutes Q&A)

David Kaplan, *Tufts U. Department of Biomedical Engineering*
 “Bioengineered Silk Proteins as New Biomaterials for Medical Needs”

Kam Leong, *Duke U. Pratt School of Engineering*
 “Nanostructured Biomaterials: Relevance to Regenerative Medicine and Tissue Biocompatibility”

Thomas Webster, *Brown U. Divisions of Engineering and Orthopedic Surgery*
 “Applications of Nanotechnology for Improving Medical Device Performance: A Paradigm Shift?”

Lijie Zhang, *The George Washington University*
 “Nanomaterials for Musculoskeletal Tissue Repair and Regeneration”

10:10 am **Break & Poster Viewing**

10:30 am **Session 9: Policy, Patents and Commercialization**

Chair: **Raj Bawa**, *Bawa Biotech Consulting and Rensselaer Polytechnic Institute*
 (each speaker has 20 minutes to present, and 5 minutes Q&A)

Sara Brenner, *U. of Albany*
 “The Nanomedicine Landscape: Challenges and Opportunities from a Clinical Vantage Point”

Anil Diwan, *President and Chairman, NanoViricides Inc.*

“Recent Progress in Nanomedicines: Antivirals, Anticancer, and Other Opportunities”

Mark Hayman, *Cooley Godward Kronish, LLC*

“Evaluating Patent Landscapes”

Susan Lee, *Maryland House of Delegates*

“Maryland's Role in Advancing and Propelling Nanomedicine Forward”

12:10 pm **Lunch**

1:40 pm **Session 10: Potential Toxicity Assessment of Nanomedicine**

Chair: Paul Howard, *FDA National Center for Toxicological Research*

(each speaker has 20 minutes to present, and 5 minutes Q&A)

Paul Howard, *FDA National Center for Toxicological Research*

“Toxicology Testing in Safety Assessment of Nanomaterials”

Günter Oberdörster, *U. of Rochester Environmental Medicine*

“Nanotoxicology – A Concern for Nanomedicine?”

Speaker (to be confirmed)

2:55 pm **Conference Adjourns**