

2014 Annual Conference of the
American Society for Nanomedicine
Universities at Shady Grove, Rockville Maryland
March 28-30, 2014

Conference Organizers

Chair: Howard E. Gendelman, MD

President: Esther Chang, PhD

Lajos Balogh, PhD

Raj Bawa, PhD

Wah Chiu, PhD

Omid Farokhzad, MD

Marianna Foldvari, PhD

Gary Harris, PhD

Kuan Wang, PhD

Michelle Bradbury

Thursday, March 27, 2014

4:00-7:00 p.m. Registration Desk Open

6:00 p.m. **American Society for Nanomedicine Leadership Dinner (by invitation)**

Friday, March 28, 2014

7:00 a.m. – 5 p.m. Registration Desk Open

8:00 a.m. Welcome **Esther Chang, PhD**
Introduction to Lecture **Howard E. Gendelman, MD**

8:15 a.m. *Keynote Address: Andre Nel, MBChB, PhD, University of California, Los Angeles*
“Nanomedicine: The Key to an Engineered Approach to Medicine and Biology”

9:00 a.m. **Session 1: CNS drug and formulation design, targeted delivery and toxicology**
Co-Chairs: **Gary Lanza, MD, PhD, FACC**, Washington University, St. Louis
Kuan Wang, PhD, Academia Sinica

9:05-9:25 a.m. **Alexander Kabanov, PhD, Dr SCI**, University of North Carolina
“Drug Cancer Design: Approaches and Translations”

9:25-9:45 a.m. **Esther Chang, PhD**, Georgetown University Medical Center
“Brain Tumor-Targeting Nanomedicine Sensitizes Glioblastoma to Chemotherapy and Improves Survival”

9:45-10:05 a.m. **Bruce Hinds, PhD**, University of Kentucky
“Gated Carbon Nanotube Membranes for Transdermal Addiction Therapy”

10:05-10:25 a.m. **Steven Rannard, PhD**, University of Liverpool
“Sustained release formulations for HIV therapy”

10:25-10:45 a.m. **Jinjun Shi, PhD**, Harvard Medical School
“Self-Assembled Lipid-Polymer Hybrid Nanoparticles for Sustained siRNA Delivery”

10:45-11:05 a.m. **Wei-Yi Ong, PhD, BDS**, National University of Singapore
“Effect of Inhalation Exposure on Biodistribution of Nanoparticles, Including the Brain”

11:05-11:20 a.m. **Break**

11:20 a.m. **Session 2. Scientific, regulatory and developmental obstacles for product translations**
Co-Chairs: **Raj Bawa, PhD**, Rensselaer Polytechnic Institute: Bawa Biotech LLC

Andrew Salperstein, PhD, GSK Pharmaceuticals

- 11:25-11:35 a.m. **Scott Livingston, BA**, Livingston Securities
“Markets and nanomedicine investments”
- 11:35-11:55 a.m. **Joseph A. Frank, MD, MS**, National Institute of Mental Health, National Institutes of Health
“Stem Cell Imaging Bench to Bedside”
- 11:55-12:15 p.m. **Susan Rosenbaum, JD**, Lauren Sciences LLC
“Product Development and Translation: From Cancer to HIV and neuroAIDS”
- 12:15-12:35 p.m. **Thomas Ernst, PhD**, University of Hawaii Medical Center
“Innovation and Translation into the Marketplace”
- 12:35-12:50 p.m. **Shivani Ghaisas**, Medical College of Wisconsin (Young Investigator)
“Development of a Nanoparticle Antioxidant Therapy Platform for Traumatic Encephalopathy”
- 12:50-2:00 p.m. **Box Lunch and Poster Viewing**
- 2:00 p.m. **Session 3: Diagnostics at the Nanoneural Interface**
Co-Chairs: **Steve Jacobson, PhD**, National Institute of Neurological Disease and Stroke
Wah Chiu, PhD, Baylor College of Medicine
- 2:05-2:25 p.m. **Elad Alon, PhD**, University of California, Berkeley
“Neural Dust An Ultrasonic, Low-Power Solution for Brain-Machine Interfaces”
- 2:25-2:45 p.m. **Dipanjan Pan, PhD**, University of Illinois at Urbana-Champaign
“Ruptured Plaque with Energy-Resolved Spectral Computed Tomography and K-edge Metal Nanocolloids without Calcium Interference”
- 2:45-3:05 p.m. **Yuri Lyubchencko PhD, DrSc**, University of Nebraska Medical Center
“Electron Cryo-tomography of Cells and Protein Aggregates”
- 3:05-3:25 p.m. **Steve Jacobson, PhD**, National Institute of Neurological Disorders and Stroke
Imaging of Neuroinflammatory Disorders
- 3:25-3:45 p.m. **Linda Chang, MD**, University of Hawaii Medical Center
“MR Studies to Assess HIV-Associated Brain Injury Current and Future Perspectives”
- 3:45-4:00 p.m. **Break**
- 4:00 p.m. **Session 4: Nanotherapeutics**
Chairs: **Marianna Foldvari, PhD**, University of Waterloo
Avindra Nath, MD, National Institute of Neurological Disorders and Stroke
- 4:05-4:25 p.m. **Omid Farokhzad, MD**, Brigham and Women’s Hospital
“Targeted polymeric nanoparticles from discovery to clinical trials”
- 4:25-4:45 p.m. **Gregory Lanza, MD**, Washington University School of Medicine
“Scanning probe technologies for carotid microthrombus diagnoses using spectral CT”
- 4:45-5:05 p.m. **Jagat R. Kanwar, PhD**, Deakin University
“Nanomedicines: Past Present and Future”
- 5:05-5:25 p.m. **Christine T.N. Pham, MD**, Washington University, St. Louis
“Characterization of Nanoparticle complement interaction”
- 5:25-5:45 p.m. **Vladimir Muzykantov MD, PhD**, University of Pennsylvania,

“Endothelial Nanomedicine”

5:45-6:05 p.m. **Xiaoyuan Chen, PhD**, National Institute of Biomedical Imaging and Bioengineering
“⁶⁴Cu-Doped Nanoparticles for In Vivo Tumor Imaging and Therapy”

6:15-7:30 p.m. **Poster Session and Social Hour**

Saturday, March 29, 2014

7:30 a.m. – 6 p.m. Registration Desk Open

8:00 a.m. **Session 5: Neuroregenerative Medicine: Promise and Perils**
Co-Chairs: **Lajos Balogh, PhD**, AA Nanomedicine & Nanotechnology
Omid Farokhzad, MD, Brigham and Women’s Hospital

8:05-8:25 a.m. **KiBum Lee, PhD**, Rutgers University
“Nanotechnology approaches for controlling stem cell fate”

8:25-8:45 a.m. **Kam Leong, PhD**, Duke University
“Cell-Topography Interactions and Neuronal Differentiation”

8:45-9:05 a.m. **Matthew Kelso, PharmD, PhD**, University of Nebraska Medical Center
“Neuroprotective regulatory T cells as vehicles for nanoformulated growth factor delivery following traumatic brain injury”

9:05-9:25 a.m. **Michal Toborek MD, PhD**, University of Miami
“Perspective for nanotoxicology”

9:25-9:45 a.m. **Marianna Foldvari, PhD**, University of Waterloo
“Gene therapy approaches to regenerating the optic nerve”

9:45-10:00 a.m. **Break**

10:00 a.m. **Session 6: Bench to Bedside applications for nanomedicine**
Co-Chairs: **Jonathan Pollock, PhD**, National Institute on Drug Abuse
Elena Batrakova, PhD, University of North Carolina, College of Pharmacy

10:05-10:25 a.m. **Elena Batrakova, PhD**, University of North Carolina, College of Pharmacy
“Carriers that Break Barriers”

10:25-10:45 a.m. **George Perry, PhD**, University of Texas, San Antonio
“Mitochondria at the origin of oxidative stress”

10:45-11:05 a.m. **Surya Mallapragada, PhD**, Iowa State University,
“Nanomedicines for Neuroprotection and Neuroregeneration”

11:05-11:25 a.m. **Michelle Bradbury, MD, PhD**, Memorial Sloan-Kettering Cancer Center
“Ultrasmall Hybrid Inorganic Nanoparticle Probes for Brain Tumor Imaging”

11:25-11:45 a.m. **Gabriel Lopez-Berestein, MD**, University of Texas MD Anderson Cancer Center

11:45-12:05 p.m. **Ravi Bellamkonda PhD**, Georgia Institute of Technology and Emory University
Nanofiber and Nanocarrier Mediated Modulation of Cell Migration for Nerve Repair and Brain Tumor Therapy”

12:05-1:15 p.m. **Lunch (on your own)**

- 1:15 p.m. **Session 7: Early Career Investigators**
Co-Chairs: **Michelle Bradbury, MD, PhD**, Memorial Sloan-Kettering Cancer Center
 Sulie Chang, PhD, Seton Hall University
- 1:20-1:40 p.m. **Lajos Balogh, PhD**, Editor-in-Chief, Nanomedicine NBM (Elsevier)
 “Nanomedicine: An editor's view”
- 1:40-2:00 p.m. **Eric C. Peterson, PhD**, University of Arkansas for Medical Sciences (Young Investigator)
 “Nanomedicine and toxicology”
- 2:00-2:20 p.m. **David Leong**, National University of Singapore (Young Investigator)
 “Nanoparticle induced endothelial leakiness Mechanism and Implications to nanomedicine”
- 2:20-2:40 p.m. **Julijana Ivanisevic, PhD**, The Scripps Research Institute (Young Investigator)
 “Metabolic Phenotyping to Functionally Characterize Brain Regions”
- 3:00-3:15 p.m. **Janet Hsu, BS**, University of Maryland (Young Investigator)
 “Transport of ICAM-1-Targeted Nanoparticles Across Endothelial-Subendothelial Layers and Uptake by Neurons”
- 3:15-3:30 p.m. **Xi Zhu, BS**, Harvard Medical School (Young Investigator)
 “Self-Assembled Lipid-Polymer Hybrid Nanoparticles For The Sustained Delivery of Small Interfering RNA”
- 3:45-4:00 p.m. **Group Photo**
- 4:00-4:15 p.m. **Break**
- 4:15-4:45 p.m. **ASNM Business Meeting** (members and non members welcome)
- Special Session: Poster Viewing and Young Investigator Education Session**
 Chairs: Michelle Bradbury and Howard Gendelman
- 4:45-6:15 p.m. **Poster Viewing, Scientific Writing and Future Funding Opportunities (Board Members)**
- 7-9:30 p.m. Meet the Professor /Young Investigator Dinner (invitation only)
 Location: TBA
- Sunday, March 30, 2014
8:30 a.m. – 11 a.m. Registration Desk Open
- 9:00 a.m. **Session 8: Nanomedicine for HIV Eradication in Brain and Other Reservoirs**
Co-Chairs: **Jeymohan Joseph, PhD**, National Institute of Mental Health
 May Wong, PhD, National Institute of Neurological Disease and Stroke
- 9:05-9:25 a.m. **Andrew Owen, PhD**, University of Liverpool
 “Sustained release formulations for HIV therapy”
- 9:25-9:45 a.m. **Jerome Zack, PhD**, University of California, Los Angeles
 “A nanoparticle approach to targeting latent HIV reservoir”
- 9:45-10:05 a.m. **Stanley Schwartz, MD, PhD**, State University of New York at Buffalo
 “Nanotherapies and brain targeting”
- 10:05-10:25 a.m. **Howard E. Gendelman, MD**, University of Nebraska Medical Center
 “Nanoformulated Antiretroviral Therapy and the CNS”

10:25-10:45 **Serguei Vinogradov, PhD, DrSc**, University of Nebraska Medical Center
“Application of Targeted Nano-NRTI Cocktails against HIV Infection in the Brain”

10:45-11:05 **Jessica Reynolds, PhD**, State University of NY at Buffalo (Young Investigator)
“Multimodular particles for HIV and/or TB”

11:10-12:30 p.m. **Session 9: Round Table Discussion and Summary**
Co-Chairs: Howard E. Gendelman and Esther Chang

12:30 p.m. **Meeting Adjourned**