

Monday, March 14th (Marsico 4004)

Block 1: Introduction and Foundational Concepts of the Nanotechnologies

8:00 – 8:10 a.m. Foundational Concepts of the Nanotechnologies (*Alexander V. Kabanov, Ph.D., Dr.Sci., UNC-CH*)

Block 2: Regulatory Considerations for Nano-formulations/medicines

8:10 - 8:40 a.m. GRAS Components in Nanoformulations and Related 505.b.2 Opportunities (*Valery Alakhov, Ph.D., ReForm Bio Inc., Canada*).

8:40 – 9:10 a.m. Regulatory Considerations for Nano-formulations/medicines – A General Overview (*Rogério Gaspar, Ph.D., University of Lisbon, Portugal*).

9:10 – 9:40 a.m. Physicochemical Characterization of Nanoparticle Therapeutics/Diagnostic Agents (*Anil Patri, Ph.D., NCTR-ORA Nanotechnology Core Facility, National Center for Toxicological Research, U.S. Food & Drug Administration*)

9:40 – 10:10 a.m. Genetically Engineered Mouse Models (*David Darr, M.S., UNC-CH*)

10:10 – 10:30 a.m. Break

10:30 – 11:00 a.m. General Safety Considerations: cellular/tissue uptake and retention, clearance from tissue and blood & Administration route-specific safety considerations (*Rogério Gaspar, Ph.D., University of Lisbon, Portugal*).

11:00 – 11:30 a.m. Chemistry Manufacturing and Control (CMC) Development Challenges (*Pallav A. Bulsara, Ph.D., GlaxoSmithKline, NC*)

11:30 a.m. – 12:30 p.m. Lunch and Networking (Marsico 4004)

Block 3: Nanoformulations – Strategies and Case studies

12:30 – 1:00 p.m. Liposomes & Lipid-stabilized Nanoprecipitates (*Leaf Huang, Ph.D. and Matthew Haynes, Ph.D. candidate, UNC-CH*)

1:00 – 1:30 p.m. Antibody-drug Conjugates (*Peter D. Senter, Ph.D., Seattle Genetics, WA*)

1:30 – 2:00 p.m. Polyion Complex Micelles (*Kazunori Kataoka, Ph.D., University of Tokyo, Japan*)

Program Schedule

2:00 – 2:30 p.m.	Cheminformatics in Drug Delivery (<i>Alexander Tropsha, Ph.D., UNC-CH</i>)
2:30 – 3:00 p.m.	Break
3:00 – 3:30 p.m.	Mucus-penetrating Nanoparticles (<i>Samuel Lai, Ph.D., UNC-CH</i>)
3:30 – 4:00 p.m.	PLGA Micro/Nanoparticles (<i>Anthony J. Hickey, Ph.D., Research Triangle Institute (RTI), NC</i>)
4:00 – 4:30 p.m.	PRINT Nanoparticles (<i>Christopher J. Luft, Ph.D., UNC-CH</i>)
4:30 – 5:00 p.m.	Polymeric Micelles (<i>Alexander V. Kabanov, Ph.D., Dr.Sci., UNC-CH</i>)
5:15 p.m.	Special Reception in Marsico 2004

Tuesday, March 15th (Marsico 4004)

Block 4: Hot Topics and Emerging Technologies in Nano-medicines/theranostics

8:00 - 8:30 a.m.	Polymer-protein Conjugates/Nanozymes for CNS delivery (<i>Alexander V. Kabanov, Ph.D., Dr.Sci., UNC-CH</i>)
8:30 - 9:00 a.m.	Nanogels (<i>Tatiana K. Bronich, Ph.D., University of Nebraska Medical Center (UNMC), NE</i>)
9:00 – 9:30 a.m.	Exosomes (<i>Elena V. Batrakova, Ph.D., UNC-CH</i>)
9:30 – 10:00 a.m.	Theranostic Inorganic Nanoparticles (<i>Marina Sokolsky, Ph.D., UNC-CH</i>)
10:00-10:30 a.m.	Break
10:30 – 11:00 a.m.	Smart Systems for Protein Delivery (<i>Zhen Gu, Ph.D., North Carolina State University (NCSU) & UNC-CH</i>)
11:00 – 11:30 a.m.	Vaccine Delivery using Microparticles (<i>Kristy Ainslie, Ph.D., UNC-CH</i>)
11:30 a.m. – 12:00 p.m.	Nanoradiopharmaceuticals – Therapy and Imaging (<i>Matthew Parrott, Ph.D., UNC-CH</i>)
12:00 – 1:00 p.m.	Lunch in Marsico 4004

Program Schedule

1:00 – 1:30 p.m. Stem cell-mediated Drug Delivery and Imaging (*Shawn Hingtgen, Ph.D., UNC-CH*) – Moved from Thurs., 1:00 to Mon., 9:40

Block 5: Nano in the Clinic (pre- and post-) – Lessons Learnt and Moving Forward

1:30 – 2:00 p.m. Pharmacokinetics/Pharmacodynamics of nanoparticle and carrier-mediated agents (*William Zamboni, Ph.D., Pharm.D., UNC-CH*)

2:00 – 2:30 p.m. Bi-directional Interaction between the Mononuclear Phagocyte System and Nanoparticles in Patients and Preclinical Models (*William Zamboni, Ph.D., Pharm.D., UNC-CH*)

2:30 – 3:00 p.m. Success and Failure Stories in Nanomedicine (*Andrew Wang, M.D., UNC-CH*)

3:00 – 5:00 p.m. Roundtable with the Speakers
This is an opportunity for attendees to meet the speakers and ask questions about the videos, case studies, and topics covered in the workshop. Please use the Questions form provided and leave it in the Questions box in the classroom. This will help us to address your questions to the appropriate speakers.

Wednesday, March 16th (Meet in Marsico 2217)

Morning Lab Session:

8:00 a.m. – 12:00 p.m. Polymeric Micelles – lab practicum and data analysis, interpretation and group discussion.

12:00 – 1:00 p.m. Lunch in Marsico 2217

Afternoon Lab Session:

1:00 – 5:00 p.m. Laboratory session: Poly(Lactic-co-Glycolic Acid) (PLGA) Particles - lab practicum and data analysis, interpretation and group discussion.

Thursday, March 17th (Meet in Marsico 2217)

Morning Lab Session:

8:00 a.m. – 12:00 p.m. Laboratory Session: Liposomes - lab practicum and data analysis, interpretation and group discussion.

12:00 – 1:00 p.m. Lunch in Marsico 2217

1:00 – 5:00 p.m. Laboratory Session: Lipid Calcium Phosphate - lab practicum and data analysis, interpretation and group discussion

Friday, March 18th (Meet in Marsico 2217)

Morning Lab Session:

8:00 a.m. – 12:00 p.m. Laboratory session: Particle Characterization Tools – Dynamic light scattering and Nanoparticle tracking analysis.

12:00 – 1:00 p.m. Lunch in Marsico 2217

Afternoon Lab Session:

1:00 – 5:00 p.m. Drug-Loaded Particle Replication in Non-wetting Templates (PRINT)
Nanoparticles – Manufacture and Characterization Laboratory
Demonstration.

5:00 – 5:30 p.m. Closing remarks and Evaluation forms