

DAY 1, Sunday, September 22, 2019

7:00 am - 8:15 am Registration & Breakfast
8:15 am - 8:30 am Opening Remarks & Welcome by Daniel Anderson, MIT

Session 1 Chairs: Bing Xu (Brandeis Univ) & Omid Veisoh (Rice Univ)

8:30am - 9:00 am: *Electrostatic Nanoparticle Platforms for Deep Tissue Penetration and Delivery*
Paula Hammond, David H. Koch Professor in Engineering, MIT

9:00 am - 9:30 am *Bioengineered silk-elastin systems for biomedical utility*
David Kaplan, Stern Family Professor of Biomedical Engineering, Tufts University

9:30 am -10:00 am *New delivery vehicles for gene editing enzymes*
Niren Murthy, Professor of Bioengineering, University of California at Berkeley

10:00 am - 10:30 am Coffee Break

10:30 am - 11:00 am *Engineering the activation of natural and synthetic T cells with nanomaterials*
Darrell Irvine, Professor of Materials Science & Engineering and Biological Engineering, MIT

11:00 am - 11:30 am *Engineering exosomes to create transformative drugs*
Tony De Fogerolles, CEO, Evox Therapeutics

11:30 am - 12:00 pm *Development of a Platform for Exosome Engineering and Large-Scale Manufacturing*
Konstantin Konstantinov, Executive Vice President, Codiak BioSciences

12:00 pm - 1:30 pm Lunch Break & Poster Session

Session 2 Chairs: Rajagopal Ramesh (OUHSC) & Yizhou Dong (Ohio State Univ) & Arturo Vegas (Boston Univ)

1:30 pm - 2:00 pm *Macrophage Reprogramming with Nano-Delivery for Cancer and Inflammatory Diseases*
Mansoor Amiji, University professor, Northeastern University

2:00 pm - 2:30 pm *Avoiding the endosomal trap: Direct cytosolic delivery of proteins (including CRISPR/Cas9) through membrane fusion processes*
Vincent Rotello, Charles A. Goessmann Professor of Chemistry, University of Massachusetts at Amherst

2:30 pm - 3:00 pm *Polymeric Nanoparticles for Intracellular Delivery and Cellular Programming*
Jordan Green, Professor of Biomedical Engineering, Johns Hopkins University School of Medicine

3:00 pm - 3:30 pm Coffee Break

3:30 -pm - 4:00 pm *HiFi molecular transmission via crisscross cooperativity*
William Shih, Professor, Wyss Institute/Harvard Medical School

4:00 pm - 4:30 pm *Modulating inflammation with nanoparticle payloads*
Matthias Nahrendorf, Professor of Radiology, MGH/Harvard Medical School

4:30 pm - 5:00 pm *Non-invasive drug and gene delivery to the brain*
Justin Hanes, Lewis J. Ort Professor of Ophthalmology, Johns Hopkins University School of Medicine

5:00 pm -5:30 pm *Ultra-high capacity polymeric micelles for drug delivery*
Alexander Kabanov, the Mescal S. Ferguson Distinguished Professor, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill

5:30 pm – 7:30 pm Welcome Reception

DAY 2, Monday, September 23, 2019

7:00 am - 8:15 am Registration & Breakfast

Session 3 Chairs: Akin Akinc (Alnylam) & Phil Snyder (Vertex)

8:15 am - 8:45 am *From Microtechnology to Nanotechnology: New Ways to Discover and Deliver Medicine to Treat Disease*
Robert Langer, Institute Professor, MIT

8:45 am - 9:15 am *In Vivo CRISPR Gene Editing by Lipid Nanoparticles*
Andrew Schiermeier, Chief Operating Officer, Intellia Therapeutics

9:15 am -9:45 am *Advances in RNAi Therapeutics Platform*
Vasant Jadhav, Vice President, Alnylam Pharmaceuticals

9:45 am - 10:15 am Coffee Break

10:15 am - 10:45 am *Gene editing therapies for inherited retinal diseases*
Charlie Albright, Chief Scientific Officer, Editas Medicine

10:45 am - 11:15 am *Applications of Nanosensors to Understanding Biochemical Signaling Within the Human Body*
Michael Strano, Carbon P. Dubbs Professor in Chemical Engineering, MIT

11:15 am - 11:45 am *Pioneering new medicinal platforms for targeted delivery – an ecosystem view*
Noubar Afeyan, Founder & CEO, Flagship Pioneering

11:45 am - 1:30 pm Lunch Break & Poster Session

Session 4 Chairs: Daniel Anderson (MIT) & Sekar Kathiresan (Verve Tx) & Shawn Chen (NIH)

1:30 pm - 2:00 pm *The New Science of Therapeutics - Advanced Therapeutic Platforms*
Jay Bradner, President, Novartis Institutes for BioMedical Research (NIBR)

2:00 pm - 2:30 pm *Bringing CRISPR to the clinic*
Tony Ho, Executive Vice President, CRISPR Therapeutics

2:30 pm - 3:00 pm *Advancing the delivery of LNP-encapsulated mRNA therapeutics for the treatment of genetic diseases*
Ronald C. Renaud Jr., Chief Executive Officer, Translate Bio

3:00 pm - 3:30 pm *Industrialization of mRNA medicines*
Stéphane Bancel, Chief Executive Officer, Moderna Inc.

3:30 -pm - 4:00 pm coffee break

4:00 pm - 4:30 pm *Activity-based nano sensors as synthetic biomarkers of disease*
Sangeeta Bhatia, John J. and Dorothy Wilson Professor of Engineering, MIT

4:30 pm - 5:00 pm *Breaking the Druggability Barrier using Helicons*
Gregory Verdine, Chairman; President and CEO, Fog Pharma

5:00 pm – 7:30 pm Networking Event

DAY 3, Tuesday, September 24, 2019

7:00 am - 8:15 am Registration & Breakfast

Session 5 Late Breaking Topics/Selected Posters
Chairs: Daniel Siegwart (UT Southwestern), & Michael Mitchell (UPenn)

8:15 am - 9:00 am Late Breaking Topics

9:00 am - 10:30 am Poster Presenters

10:30 am - 11:00 am Coffee Break

Session 6 Closing Session
Chairs: Gaurav Sahay (Oregon State Univ) & Qiaobing Xu (Tufts Univ)

11:00 am - 11:30 am *Nanoparticle medicated delivery for inner ear applications*
Zhengyi Chen, Associate Professor of Otolaryngology, Massachusetts Eye and Ear/MGH

11:30 am - 12:00 pm *Engineering RNA and LNP technology as a platform for CRISPR-based in vivo gene editing*

Christopher Cheng, Director of mRNA Manufacturing & Delivery, Casebia Therapeutics

12:00 pm - 12:30 pm *Helping biological drugs to reach their targets*

Maria José Alonso, Professor of Pharmacy and Pharmaceutical Technology, University of Santiago de Compostela, Spain

12:30 pm - 12:40 pm Closing, Qiaobing Xu, Tufts University