

# SYMPOSIUM SM6

Materials in Immunology—From Fundamental Material Design to  
Translational Applications  
April 18 - April 20, 2017

## Symposium Organizers

Hao Cheng, Drexel University  
Wendy Liu, University of California, Irvine  
Minglin Ma, Cornell University  
Cherie Stabler, University of Florida

## Symposium Support

JDRF, International

## Proceedings Statement

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\* Invited Paper

SESSION SM6.1: Fundamental Material Design for Reducing Innate Immune Recognition  
Session Chair: Minglin Ma  
Tuesday Afternoon, April 18, 2017  
PCC North, 100 Level, Room 122 C

### 1:30 PM \*SM6.1.01

**Fundamental Material Design to Translational Applications for a Sphere-Templated Porous Polymer that Integrates and Heals in Many Tissues and Sites** [Buddy D. Ratner](#); University of Washington, United States.

### 2:00 PM \*SM6.1.02

**The Functional Link between Protein Adsorption and Hemocompatibility** [Kristina N. Ekdahl](#)<sup>1,2</sup>; <sup>1</sup>Rudbeck Laboratory, Sweden; <sup>2</sup>Linnaeus University, Sweden.

### 2:30 PM BREAK

### 3:00 PM \*SM6.1.03

**From Flexible Filomicelles to 'Self' Recognition** [Dennis E. Discher](#); University of Pennsylvania, United States.

### 3:30 PM \*SM6.1.04

**Zwitterionic Polymer Conjugation or Encapsulation of Proteins Enhances Pharmacokinetics and Mitigates Immune Response** [Shaoyi Jiang](#); University of Washington, United States.

### 4:00 PM SM6.1.05

**Enhancing Nanocarrier Blood Circulation by Controlling Their Topographical Structures** [Hao Cheng](#); Drexel University, United States.

### 4:15 PM SM6.1.06

**In Vitro Evaluation of Bioactive Implant Materials** [Weitian Zhao](#); École Polytechnique Fédérale de Lausanne, Switzerland.

SESSION SM6.2: Materials in Controlling Macrophage Polarization

Session Chair: Wendy Liu

Wednesday Morning, April 19, 2017

PCC North, 100 Level, Room 122 C

### 8:45 AM SM6.2.01

**Poly (2-methacryloyloxyethyl phosphorylcholine) Encapsulated Oxalate Oxidase—A Potential Anti-Hyperoxaluria Drug with Prolonged Blood Residence and Mitigated Immunogenicity** [Ming Zhao](#); University of California, Los Angeles, United States.

### 9:00 AM SM6.2.02

**High-Water-Content and Resilient PEG-Based Hydrogels and In Vivo Evaluation of Their Biocompatibility** [Minglin Ma](#); Cornell University, United States.

### 9:15 AM \*SM6.2.03

**Combinatorial Development of Materials for Islet Transplantation** [Daniel G. Anderson](#); Massachusetts Institute of Technology, United States.

### 9:45 AM BREAK

### 10:15 AM \*SM6.2.04

**Improving Selective Targeting to Macrophage Subpopulations through Modifying Liposomes with Arginine Based Materials** [Kaitlin Bratlie](#); Iowa State University, United States.

### 10:45 AM \*SM6.2.05

**Novel Strategies to Modulate the Inflammatory Response to Biomaterials** [Kara L. Spiller](#); Drexel University, United States.

### 11:15 AM SM6.2.06

**Global Gene Expression Analysis of Macrophages in Response to Changing Size and Porosity of Silica Nanoparticles** [Mostafa Yazdimamaghani](#)<sup>1,2</sup>; <sup>1</sup>University of Utah, United States; <sup>2</sup>University of Utah, United States.

SESSION SM6.3: Scaffold and Hydrogel for Immune Modulation

Session Chair: Cherie Stabler

Wednesday Afternoon, April 19, 2017

PCC North, 100 Level, Room 122 C

### 1:30 PM \*SM6.3.01

**Building a Pro-Regenerative Immune Environment with Biomaterials** [Jennifer Elisseff](#); Johns Hopkins University School of Medicine, United States.

### 2:00 PM \*SM6.3.02

**Dendritic Cell-Targeted Immunomodulation for Tolerance** [Benjamin Keselowsky](#); University of Florida, United States.

### 2:30 PM BREAK

### 3:30 PM \*SM6.3.03

**Mesoporous Silica-Based Cancer Immunotherapy** [Jaeyun Kim](#); Sungkyunkwan University, Korea (the Republic of).

### 4:00 PM \*SM6.3.04

**Methods of Controlling and Activating Dendritic Cells with Chemical Tools** [Aaron P. Esser-Kahn](#); University of California, Irvine, United States.

### 4:30 PM SM6.3.05

**Biomimetic Injectable Macroporous Scaffolds for Immune Cells Modulation** [Zhiyuan Fan](#); Drexel University, United States.

### 4:45 PM SM6.3.06

**Electroporation of HL-60 White Blood Cell Suspensions Using Nanoporous Membrane Electrodes Platform for Immune Modulation** [Bruce J. Hinds](#); University of Washington, United States.

SESSION SM6.4: Poster Session: Materials in Immunology  
Wednesday Afternoon, April 19, 2017  
8:00 PM - 10:00 PM  
Sheraton, Third Level, Phoenix Ballroom

**SM6.4.01**

**Shapes, Surfaces and Hardness in the Immune Response to MSUM** [Alicia B. Brune](#); Arizona State University, United States.

**SM6.4.02**

**A Sensor for Detecting Protein-Nanoparticle Interaction** [Christina Moeslund](#); iNANO, Aarhus University, Denmark.

**SM6.4.03**

**Au-MnFe<sub>2</sub>O<sub>4</sub> Core-Shell Nanoparticles for Drug Delivery, MR Imaging and Immune Activation** [Ravichandran Manisekaran](#); CINVESTAV, Mexico.

**SM6.4.04**

**Development of a Universal and Recyclable Virus Deactivation System for Protection against Airborne Transmissible Pathogenic Aerosols** [Ilaria Rubino](#); University of Alberta, Canada.

SESSION SM6.5: Nanomaterials for Immune Modulation  
Session Chair: Hao Cheng  
Thursday Morning, April 20, 2017  
PCC North, 100 Level, Room 122 C

**8:45 AM \*SM6.5.01**

**Self-Assembled Nanogels as Vaccine Delivery Systems** [Kazunari Akiyoshi](#)<sup>1,2</sup>; <sup>1</sup>Kyoto University, Japan; <sup>2</sup>JST ERATO, Japan.

**9:15 AM \*SM6.5.02**

**Multi-Stage Drug Delivery System for Enhanced Payload Delivery to Lymph Node Cells** [Susan N. Thomas](#); Georgia Institute of Technology, United States.

**9:45 AM BREAK**

**10:15 AM \*SM6.5.03**

**Cell Membrane-Coated Nanoparticles as a Vaccine Delivery Platform** [Liangfang Zhang](#); University of California, San Diego, United States.

**10:45 AM SM6.5.04**

**Engineering an Effective Immune Adjuvant by Designed Control of Shape and Crystallinity of Aluminum Oxyhydroxide Nanoparticles** [Tian Xia](#); University of California, Los Angeles, United States.

**11:00 AM SM6.5.05**

**A Novel Method for High-Throughput Discovery of Neo-Antigens and Corresponding T-Cell Receptors** [Songming Peng](#); California Institute of Technology, United States.

**11:15 AM SM6.5.06**

**Immunomodulatory Effects of HDL Encapsulated Copper Nanoparticle Orchestrated Anti-Cancer Drugs for Cancer Therapeutics** [Goldie Oza](#); CINVESTAV, Mexico.