



# Nanomedicines ALLIANCE

## NanoMed Digest

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Join the Nanomedicines Alliance. Contact us at [info@nanomedicines-alliance.org](mailto:info@nanomedicines-alliance.org).

- Meet with industry colleagues, government partners, and other stakeholders
- Help define the issues of science, regulation, and policy
- Participate in our ongoing advocacy, regulatory, and scientific efforts
- Join as a trial member for six months at half the annual fee

## Highlights

### IPRF Nanomedicines Working Group

The International Pharmaceutical Regulators Forum, a consortium of twenty international regulators and standard-setting organizations focusing on harmonization, exchange of information, and regulatory cooperation, has a nanomedicines working group to discuss evaluation of nanoparticle-based drug products. A [2016 information sharing chart](#) provides information on definitions, planned workshops, and regulations from eight agencies.

### NIOSH Nanotechnology Safety Guide

The US National Institute for Occupational Safety and Health in March 2016 released a [safety guide](#) for small-to-medium enterprises on protecting the nanotechnology workforce. The guide provides information on risk management and prevention, safety controls, and federal regulatory requirements.

### Center of Space Nanomedicine

The Houston Methodist Research Institute has created a [Center of Space Nanomedicine](#) to work collaboratively with the Center for the Advancement of Science in Space to conduct several experiments on the International Space Station over the next five years. The first planned experiment will study the diffusion of drug-like particles to help scientists gain insight on how medicinal particles behave as they navigate nano-scale spaces.

### CLINAM Conference

Save the date for the upcoming [CLINAM conference](#) on June 26 – 29, 2016 in Basel, Switzerland. This year's theme is "Enabling Technologies for Personalized Medicine." The conference will feature tracks on clinical and targeted nanomedicine research, translation, enabling technologies, and regulatory affairs. Nanomedicines Alliance members Dr. Marianne Ashford and Dr. Frank Malinoski will also present on emerging scientific advancements and on the synergies achieved through industry collaboration.

## Reviews and Other Publications of Interest

### [Analysis of nanoparticle delivery to tumours.](#)

Nature Review Materials, Vol. 1, Article No. 16014, April 2016. Stefan Wilhelm, Anthony J. Tavares, Qin Dai, Seiichi Ohta, Julie Audet, Harold F. Dvorak, Warren C. W. Chan.

### [Preventing diet-induced obesity in mice by adipose tissue transformation and angiogenesis using targeted nanoparticles.](#)

Proceedings of the National Academy of Sciences, Vol. 113, No. 20, May 2016. Yuan Xue, Xiaoyang Xu, Xue-Qing Zhang, Omid C. Farokhzad, Robert Langer.

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**Real-time single-molecule electronic DNA sequencing by synthesis using polymer-tagged nucleotides on a nanopore array.** Proceedings of the National Academy of Sciences, Vol. 113, No. 19, May 2016. Carl W. Fuller, Shiv Kumar, Mintu Porel, Minchen Chien, Arek Bibillo, P. Benjamin Stranges, Michael Dorwart, Chuanjuan Tao, Zengmin Li, Wenjing Guo, Shundi Shi, Daniel Korenblum, Andrew Trans, Anne Aguirre, Edward Liu, Eric T. Harada, James Pollard, Ashwini Bhat, Cynthia Cech, Alexander Yang, Cleoma Arnold, Mirkó Palla, Jennifer Hovis, Roger Chen, Irina Morozova, Sergey Kalachikov, James J. Russo, John J. Kasianowicz, Randy Davis, Stefan Roeber, George M. Church, Jingyue Ju.

**Biodegradable antigen-associated PLG nanoparticles tolerize Th2-mediated allergic airway inflammation pre- and postsensitization.**

Proceedings of the National Academy of Sciences, Vol. 113, No. 18, May 2016. Charles B. Smarr, Woon Teck Yap, Tobias P. Neef, Ryan M. Pearson, Zoe N. Hunter, Igal Ifergan, Daniel R. Getts, Paul J. Bryce, Lonnie D. Shea, Stephen D. Miller.

**Controlled nanoparticle release from stable magnetic microbubble oscillations.** NPG Asia Materials, Vol. 8, April 2016. Yu Gao, Chon U Chan, Qiushi Gu, Xudong Lin, Wencong Zhang, David Chen Loong Yeo, Astrid Marlies Alsema, Manish Arora, Mark Seow Khoon Chong, Peng Shi, Claus-Dieter Ohl, Chenjie Xu.

**Collective dynamics of diffusiophoretic motors on a filament.** The European Physical Journal E, March 2016. Mu-Jie Huang, Raymond Kapral.

**Bioproduction of gold nanoparticles for photothermal therapy.** Therapeutic Delivery, Vol. 7, No. 5, pp. 287 – 304, May 2016. Catarina Oliveira Silva, Patrícia Rijo, Jesús Molpeceres, Lia Ascensão, Amílcar Roberto, Ana Sofia Fernandes, Ricardo Gomes, João M Pinto Coelho, Ana Gabriel, Pedro Vieira, Catarina Pinto Reis.

**Direct Photocontrol of Peptidomimetics: An Alternative to Oxygen-Dependent Photodynamic Cancer Therapy.** Angewandte Chemie, Vol. 128, Issue 18, pp. 5583 – 5586, April 2016. Oleg Babii, Sergii Afonin, Liudmyla Garmanchuk, Viktoria Nikulina, Tetiana Nikolaienko, Olha Storozhuk, Dmytro Shelest, Olga Dasyukevich, Liudmyla Ostapchenko, Volodymyr Iurchenko, Sergey Zozulya, Anne Ulrich, Igor Komarov.

**Hyaluronidase Embedded in Nanocarrier PEG Shell for Enhanced Tumor Penetration and Highly Efficient Antitumor Efficacy.** Nano Letters, Vol. 16, Issue 5, pp. 3268 – 3277, April 2016. Hao Zhou, Zhiyuan Fan, Junjie Deng, Pelin K. Lemons, Dimitrios C. Arhontoulis, Wilbur B. Bowne, Hao Cheng.

**Urocanic acid-modified chitosan nanoparticles can confer anti-inflammatory effect by delivering CD98 siRNA to macrophages.** Colloids and Surfaces B: Biointerfaces, Vol. 143, pp. 186 – 193, July 2016. Bo Xiao, Panpan Ma, Emilie Viennois, Didier Merlin.

**Entrapment of Enzymes within Sol–Gel-Derived Magnetite.** Chemistry of Materials, Vol. 28, Issue 7, pp. 2248 – 2253, March 2016. Andrey S. Drozdov, Olga E. Shapovalova, Vladimir Ivanovski, David Avnir, Vladimir V. Vinogradov.

**Controlled actuation of therapeutic nanoparticles: an update on recent progress.** Therapeutic Delivery, Vol. 7, No. 5, pp. 335 – 352, May 2016. Okhil K Nag, Lauren D Field, YungChia Chen, Ajmeeta Sangtani, Joyce C Breger, James B Delehanty.

**mRNA vaccine delivery using lipid nanoparticles.** Therapeutic Delivery, Vol. 7, No. 5, pp. 319 – 334, May 2016. Andreas M Reichmuth, Matthias A Oberli, Ana Jeklenec, Robert Langer, Daniel Blankschtein.

**In vivo in silico pharmacokinetic simulation studies of carvedilol-loaded nanocapsules using GastroPlus™.** Therapeutic Delivery, Vol. 7, No. 5, pp. 305 – 318, May 2016. Jerome K George, Sandeep Kumar Singh, PRP Verma.

## Conferences and Workshops

**International Nanotechnology Congress, 1 – 4**

**June 2016, Boston, MA**

Regulatory landscape  
Biomedical applications

**Nano in Bio 2016, 31 May – 5 June 2016, Le Gosier, French West Indies**

Biosensors & nanobioelectronics  
Bio-inspired materials & drug delivery  
Nanobiomechanics & nanomedicine

Tissue engineering & regenerative medicine  
Nanotechnologies & biomedical applications

**CLINAM Conference, 26 – 29 June 2016, Basel, Switzerland**

Enabling technologies for personalized medicine  
Clinical applications  
Translation

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**Nanotechnology in Medicine: From Molecules to Humans, 3 – 8 July 2016, Herrnstein, Austria**

Nano/microparticles for diagnostics and therapeutics  
Nano/microtechnology for study of cellular and molecular dynamics  
Nanotechnology and translational medicine  
Nanotechnology and biopolymer for regenerative medicine  
Nanostructures for cell adhesion, growth, motility, and differentiation  
Nanoscale interactions for cell, tissue and organ

**International Conference on Nanosciences & Nanotechnologies,**

**5-8 July 2016, Thessaloniki, Greece**

Biological systems  
Self-assembly and self-organization  
Cell/nanomaterial interactions

**FDA Global Summit on Regulatory Science: Nanotechnology Standards and Applications, 7 – 9 September 2016, Bethesda, MD**

**International Conference on Nanomedicine and Nanobiotechnology, 28 – 30 September 2016, Paris, France**

Targeted drug delivery and nanocarriers  
Nanomedicine for cancer diagnosis & therapy  
Biological & medical nanodevices and biosensors  
Tissue engineering and regenerative nanomedicine  
Toxicology and risk assessment of nanomedicine systems  
Nano-Imaging for diagnosis, therapy and delivery  
Bionanocatalysis and nanobiosystems  
Microfluidics in nanomedicine and nanobiology

**Annual ETPN Conference, 12 – 14 October 2016, Heraklion, Greece**

**Applied Pharmaceutical Nanotechnology, 19 October 2016, Cambridge, MA**

Nanotechnology and Diagnostics  
Theranostics and Personalized Medicine  
Nanotechnology and Immunotherapy  
FDA / Regulatory Guidance  
Nanotechnology in Preclinical and Clinical Development

## Reference Section

### Nano Organizations

[National Center for Toxicological Research \(NCTR\)](#)  
[National Nanotechnology Initiative \(NNI\)](#)  
[Nano Science and Technology Consortium \(NSTC\)](#)  
[Nano Science and Technology Institute \(NSTI\)](#)  
[The Nanotechnology Institute \(NTI\)](#)

### Nano Journals

[American Chemical Society -- Nano Letters](#)  
[Institute of Physics – Nanotechnology](#)  
[Journal of Nanoscience and Nanotechnology](#)  
[NanoTrends - A Journal of Nanotechnology and its Applications](#)  
[BCC Research -- Nanotechnology Reports](#)  
[Nanomedicine: Nanotechnology, Biology, and Medicine](#)  
[Future Medicine](#)  
[Nature Nanotechnology](#)

## Contact

For further information, or if you have any questions about the Nanomedicines Alliance, please contact the Nanomedicines Alliance Secretariat at 1-202-230-5653 or [info@nanomedicines-alliance.org](mailto:info@nanomedicines-alliance.org).

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