



# 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

### NNI 2017 Budget Supplement

The US National Nanotechnology Initiative (NNI) has released a [supplement to the President's 2017 budget](#) outlining current nanotechnology activities and the future direction of the NNI. The budget supplement emphasizes the focus on commercialization at NNI, such as the implementation of Nanotechnology-Inspired Grand Challenges. NNI goals include advancing nanotechnology research and development, enabling the translation of new technologies into products, developing and maintaining a robust educational and workforce infrastructure to advance nanotechnology, and encouraging the responsible development of nanotechnology.

### QEEN Workshop Report

The National Nanotechnology Coordination Office (NNCO) has [released a report](#) on the July 2015 workshop "Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products: Addressing Environmental, Health, and Safety Implications." The workshop report discusses gaps in current characterization tools, exposure assessment methodologies, and modeling tools in the pursuit of data-based risk assessment for nanotechnology-based products.

### European Opinion on Nanotechnology in Industry

The *Official Journal of the European Union* published in February 2016 the [Opinion of the European Economic and Social Committee](#) on "Nanotechnology for a competitive chemical industry." Conclusions of the document focus on enhancing European competitiveness through promoting nanotechnology. The committee encourages research collaboration, risk assessment standardization, and promoting acceptance of nanomaterials by consumers. The opinion also noted that the European Commission should "set up an observatory to record and evaluate the development processes, applications, use (recycling) and disposal of nanomaterials," with a view toward a report identifying nanomaterial trends to 2030.

### 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.

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

## Reviews and Other Publications of Interest

### CRLX101 nanoparticles localize in human tumors and not in adjacent, nonneoplastic tissue after intravenous dosing.

Proceedings of the National Academy of Sciences, Vol. 113, No. 14, April 2016. Andrew J. Clark, Devin T. Wiley, Jonathan E. Zuckerman, Paul Webster, Joseph Chao, James Lin, Yun Yen, Mark E. Davis.

### Engineered Protein Polymer-Gold Nanoparticle Hybrid Materials for Small Molecule Delivery.

Journal of Nanomedicine and Nanotechnology, February 2016. Min Dai, Frezzo JA, Sharma E, Chen R, Singh N, Yuvienko C, Caglar E, Xiao S, Saxena A, Montclare JK.

### Reporter nanoparticle that monitors its anticancer efficacy in real time.

Proceedings of the National Academy of Sciences, Vol. 113, No. 15, April 2016. Ashish Kulkarni, Poornima Rao, Siva Natarajan, Aaron Goldman, Venkata S. Sabbiseti, Yashika Khater, Navya Korimerla, Vineethkrishna Chandrasekar, Raghunath A. Mashelkar, Shiladitya Sengupta.

### Extreme sensitivity biosensing platform based on hyperbolic metamaterials.

Nature Materials, March 2016. Kandammathe Valiyaveedu Sreekanth, Yunus Alapan, Mohamed ElKabbash, Efe Ilker, Michael Hinczewski, Umut A. Gurkan, Antonio De Luca, Giuseppe Strangi.

### Quantitative super-resolution imaging with qPAINT.

Nature Methods, March 2016. Ralf Jungmann, Maier S Avendaño, Mingjie Dai, Johannes B Woehrstein, Sarit S Agasti, Zachary Feiger, Avital Rodal, Peng Yin.

### Synergistic Photothermal and Antibiotic Killing of Biofilm-Associated Staphylococcus aureus Using Targeted Antibiotic-Loaded Gold Nanoconstructs.

ACS Infectious Diseases, Vol. 2, No. 4, pp. 241 – 250, February 2016. Daniel G. Meeker, Samir V. Jenkins, Emily K. Miller, Karen E. Beenken, Allister J. Loughran, Amy Powless, Timothy J. Muldoon, Ekaterina I. Galanzha, Vladimir P. Zharov, Mark S. Smeltzer, Jingyi Chen.

### Enhanced Cancer Immunotherapy by Microneedle Patch-Assisted Delivery of Anti-PD1 Antibody.

Nano Letters, Vol. 16, No. 4, pp. 2334 – 2340, March 2016. Chao Wang, Yanqi Ye, Gabrielle M. Hochu, Hasan Sadeghifar, Zhen Gu.

### Self-assembly of size-controlled liposomes on DNA nanotemplates.

Nature Chemistry, March 2016. Yang Yang, Jing Wang, Hideki Shigematsu, Weiming Xu, William M. Shih, James E. Rothman, Chenxiang Lin.

### Inactivation of GDP-fucose transporter gene (Slc35c1) in CHO cells by ZFNs, TALENs and CRISPR-Cas9 for production of fucose-free antibodies.

Biotechnology Journal, Vol. 11, Issue 3, pp. 399 – 414, March 2016.

### Genetic circuit design automation.

Science, Vol. 352, Issue 6281, April 2016. Alec A. K. Nielsen, Bryan S. Der, Jonghyeon Shin, Prashant Vaidyanathan, Vanya Paralanov, Elizabeth A. Strychalski, David Ross, Douglas Densmore, Christopher A. Voigt.

### Integrated in vivo and in vitro nascent chain profiling reveals widespread translational pausing.

Proceedings of the National Academy of Sciences, Vol. 113, No. 7, February 2016. Yuhei Chadani, Tatsuya Niwa, Shinobu Chiba, Hideki Taguchi, Koreaki Ito.

## Conferences and Workshops

### Bionanomaterials Conference, 8 – 11 May 2016, Varna, Bulgaria

Synthesis  
Characterization  
Toxicity  
Therapeutics

### NanoDiode Workshop, 31 May 2016, Brussels, Belgium

Stakeholder engagement

### 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 & nanomechanics  
Tissue engineering & regenerative medicine  
Nanotechnologies & biomedical applications

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

Enabling technologies for personalized medicine  
Clinical applications  
Translation

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

**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

## 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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