

Nano NEWS with NTWG

May 2018

Disclaimer: This newsletter is a product of the Nanotechnology Working Group: It does not represent the position of the American Industrial Hygiene Association.

Chairman’s Welcome

The NTWG furthers global safety and health, on its own and in collaboration with AIHA technical committees, by identifying, evaluating, organizing, developing, and sharing emerging information with AIHA members and the general public. The NTWG focuses its efforts on challenges posed by engineered nanomaterials, the development of advanced materials that exploit the novel nanoscale properties, and associated manufacturing methods and equipment. The NTWG and its members:

- Author fact sheets and *Synergist* articles
- Support the Good Nano Guide 
- Present information at AIHA and non-AIHA meetings, conferences and symposiums 
- Evaluate and provide input on the development of national and international standards.

We would welcome your participation in these efforts: If you are interested in actively participating or proposing NTWG action on an emerging issue, please contact one of the officers listed at the end of this issue.

Table of Contents

Chairman’s Welcome	1
Recent Articles of Interest	2
Significant Monthly Discussion Topics	3
Upcoming National Conferences (May 2018 – September 2018)	3
AIHCE 2018 Program	4
NTWG business for Fall AIHA meeting ((by Chair))	4
Current NTWG Projects	4
NTWG Officers	5



Recent Articles of Interest

- ◆ **WHO Guidelines on Protecting Workers from Potential Risks of Manufactured Nanomaterials** (PDF) is available on the WHO website. A summary of WHO's recommendations appears on the [NIOSH Science Blog](#).

- ◆ **INHALING NANO-TITANIUM DIOXIDE COULD HAVE EPIGENETIC EFFECTS IN FOETUS** (fetus)
Excerpt from [article in ChemicalWatch <https://chemicalwatch.com/63219/inhaling-nano-titanium-dioxide-could-have-epigenetic-effects-in-fetus>](https://chemicalwatch.com/63219/inhaling-nano-titanium-dioxide-could-have-epigenetic-effects-in-fetus):
If pregnant women inhale engineered nanomaterials (ENMs) it may cause "significant" epigenetic changes in the fetus, according to a US rodent study. (See <https://chemicalwatch.com/48231/>). Epigenetics describes molecular changes that alter gene expression without changing DNA sequence. "Because the human gestational period is nine months, we consider our exposure paradigm highly relevant to the worker population," write the researchers in the journal *Particle and Fibre Toxicology*.

- ◆ **Single-Nanoparticle Maps Pave the Way for Better, Safer Nanotechnology** [Photonics Spectra, Jan 2018](#)
GOTHENBURG, Sweden and KONGENS LYNGBY, Denmark — A method that combines electron **microscopy** and optical microscopy to map individual nanoparticle responses in different situations and contexts could pave the way for better nanomaterials and safer nanotechnology. A nanoparticle of a certain material is made up of a number of smaller grains or crystals. The number of grains and how they are arranged is crucial in determining how the particle reacts in a certain situation or with a certain substance. The research has been published in the journal Nature Communications.

- ◆ From **Just in Time to Just Next Door: 21st Century Manufacturing Challenges and Opportunities for Industrial Hygienists**. The Synergist. January 2018.
Article by NTWG members Charles Geraci and Laura Hodson

- ◆ **Multi-million Pound Project to Improve the Safety of Nanomaterials**. NANO – The Magazine for Small Science, March 2018. <https://nano-magazine.com/news/2018/3/1/multimillion-pound-project-to-improve-the-safety-of-nanomaterials>

Heriot-Watt University will lead a multi-million global project that will assess the risks of nanomaterials and develop an approach to minimize the harm they may pose to humans or the environment. A team from the [School of Engineering and Physical Sciences](#) will coordinate GRACIOUS, a project involving 23 partners from the UK, US and Asia. The aim is to reduce the need to assess individually the risks posed by the thousands of nanomaterials used in a multitude of products including clothing, medicines, cosmetics and electronics, by building a framework which allows decisions on nanomaterial safety to be made. The research is being funded by the European Commissions' Horizon2020 scheme.

GRACIOUS is one of three large European nanomaterial safety projects being led by institutions in the UK. The Heriot-Watt team is also a partner in PATROLS, led by Swansea University. This project will establish and standardize a battery of innovative,

next-generation safety testing tools that more accurately predict the adverse effects caused by long-term engineered nanomaterial exposure in humans and the environment.

The team will also work on the BIORIMA project, led by the Institute of Occupational Medicine, which will develop new approaches to assess the human and environmental safety of nanomedicines which are used to diagnose and treat diseases such as cancer and cardiovascular disease

◆ New NIOSH Documents Out on **Nanotechnology** Workplace Design, [Occupational Health and Safety, March 14, 2018](#)

NIOSH has posted four new documents addressing the design of **nanotechnology** workplaces so that the workers' exposures to nanomaterials while conducting common processes and tasks will be controlled. The four documents provide recommendations on minimizing exposures during:

- handling and weighing of nanomaterials when scooping, pouring, and dumping
- harvesting nanomaterials and cleaning out reactors after materials are produced
- processing nanomaterials after production
- working with nanomaterials of different forms, including dry powders or liquids

Significant Monthly Discussion Topics

- ◆ Discussion of Nanomaterial Import/Export Restrictions. See *Synergist* article in October 2017 issue
- ◆ Discussion of Geraci and Hodson *Synergist* (January 2018) article entitled "From 'Just in Time' to 'Just Next Door'"

Upcoming National Conferences (May 2018 – September 2018)

AIHCE – Philadelphia, PA – May 20-23, 2018

IOHA – Washington, DC – September 24 -26, 2018

ASSE – San Antonio, TX – June 3-6, 2018

Nano World Summit: Current and Future Perspectives

– Philadelphia, PA – June 6-7, 2018

ACS Annual Conference 2018: Nanoscience, Nanotechnology & Beyond

– Boston, MA -Aug 19- 23, 2018

AIHCE 2018 Program

The entire AIHce 2018 program is available at:

<https://ww5.aievolution.com/aih1801/index.cfm?do=ev.pubSearchEvents>

Search “Nanotechnology” to read the abstracts of each session. Sessions by NTWG members include:

Sunday, May 20, 2018

8:00 – 12:00 PDC 540 Nanotechnology: Old Theories and New Concepts

1:00 – 5:00 PDC 603 How to Manage and Assess Nanomaterial Risks

Monday, May 21, 2018

2:00 – 3:00 C10 Nanotechnology: Updates and Challenges for the Future, Part 1 3:15

– 4:15 D10 Nanotechnology: Updates and Challenges for the Future, Part 2

Wednesday, May 23, 2018

9:00 – 10:00 I3 Emerging Issues in IH: Law Enforcement and National Security

1:00 – 2:00 K2 Case Studies in Respiratory Deposition of Metal Fume Particles

1:00 – 2:00 K8 Additive Manufacturing: Workplace Health and Safety, Part 2

2:15 – 3:15 L2 Nanotechnology Update:

NTWG business for Spring AIHCE meeting

Business of NTWG (Spring 2018)

- 🔗 2018 Business Plan
- 🔗 Monthly minutes for 2017-18 teleconferences are available from the Secretary or the AIHA SharePoint site for NTWG at <http://community.aiha.org/communities/community-home/librarydocuments?LibraryKey=1cc4318f-4029-446c-950f-4543f594002b&LibraryFolderKey=b9d496d7-b345-445b-8a90-c1a7957235c2&CommunityKey=c9d1c840-c0f2-4fde-b81c-6c22077abe6e> .

Current NTWG Projects

If you are interested in volunteering to assist on an active project, please email the listed project lead or contact an officer.

- NTWG newsletter/communications – Project Lead: Dan Marsick, dmarsick@cox.net
- 🔗 **Value Proposition (Steve Graham):** Trifold has been approved by the Board of the AIHA as well as the Content Portfolio Advisory Group. We anticipate a printed trifold as well as digital material
- 🔗 **Christine Knezevich Fact Sheet:** (Long Paper)
 - Was submitted for review.
 - One Peer Review comment back from Stewardship and Sustainability committee.

NTWG Officers

(click the link to email)

[John Baker](#), Chair

[Amanda Archer](#), Vice -Chair

[David Abrams](#), Secretary

[Martin Barrie](#), Secretary Elect

[Paul Webb](#), Past Chair

(4/4/18)