

# Nanoscience and Advanced Materials Specialty Section

# Newsletter



Reception 2019: Flemming Cassee introducing new executive committee

## Introduction - Flemming Cassee

Dear NAMSS members,

Every year, a part of the executive committee is replaced. Some just move to the next position, some people leave and a few new members join. The 2019-2020 executive committee is presented elsewhere in this Newsletter and as the current president I wish to thank those that left, in particular Timothy R. Nurkiewicz, who served for four years including being the President of the now former Nanotoxicology Specialty Section. And also Mark David Ihrie as Student Representative and Lisa Truong as Councilor.



Aaron Erdely

## Name change - Aaron Erdely

As you are aware, we are now recognized as the Nanoscience and Advanced Materials Specialty Section (NAMSS). This became official in February 2019. The membership voted twice in favor of growing from our original name of the Nanotoxicology Specialty Section. A committee, mainly of founding members, was formed to develop the new name the Specialty Section has today. Many thanks to those who participated.

As we move forward, the NAMSS will host webinars and sponsor sessions at the Society of Toxicology annual meeting highlighting emerging technologies. Dr. Charles Geraci will be giving an upcoming webinar providing an overview of the landscape of advanced materials. Also, the NAMSS developed and sponsored a session for the 2020 meeting describing exposure and toxicity assessments of additive manufacturing. We welcome your suggestions and involvement as the NAMSS grows to encompass these new emerging areas.

## Upcoming Webinars

- Bridging the In Vitro–In Vivo Divide for Hazard Testing of Nanomaterials – Prof Shareen Doak and Prof Barbara Rothen-Rutishauser Monday, October 21, 2019 at 12:00 PM (EDT)
- Advanced Materials - Chuck Geraci, first week of December 2019

**'Nanotechnology has been moving a little faster than I expected, virtual reality a little slower.'**  
**Nick Bostrom**



10th International Conference on Nanotoxicology: Edinburgh, UK  
20th – 22nd April 2021



## Webinar 1: Bridging the *in vitro*–*in vivo* divide for

**Shareen H. Doak<sup>1</sup> & Barbara Rothen-Rutishauser<sup>2</sup>**

1. Institute of Life Science & Centre for NanoHealth, Swansea University Medical School, Singleton Park, Swansea, SA2 8PP, UK
2. Adolphe Merkle Institute, University of Fribourg, Chemin des Verdiers 4, CH-1700 Fribourg, Switzerland

There have been great developments in our understanding of nanosafety over the last decade. However, there is also now increased recognition that technical challenges remain in the use of standard *in vitro* hazard evaluation strategies, which impact their reliability and predictivity. Most hazard tests for risk assessment purposes are currently based on mammalian cells cultured as a two-dimensional (2D) monolayer, but these culture systems do not closely mimic human physiological functioning. In contrast, when cells are cultured in three dimensions (3D), the increased structural complexity results in cell-to-cell

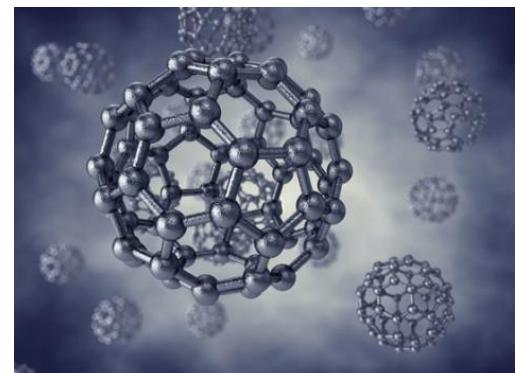
and/or cell-to-matrix cross-talk, enhanced metabolic capacity, and altered global transcriptomic and proteomic profiles leading to 3D models that are more representative of the *in vivo* environment. The application of 3D tissue constructs and complex co-culture models incorporating multiple cell types is improving our ability to report on a wider range of potential key events leading to adverse outcome effects following exposure to nanomaterials. Thus, the continued development and standardisation of such advanced *in vitro* models may provide substantial benefits in bridging the *in vitro* to *in vivo* gap for hazard assessment, potentially minimising the necessity for animal testing. An overview will be given about the current advancement of lung, intestine and liver 3D models as well as state-of-the art exposure approaches to understand the impact of various nanomaterials.

[REGISTER HERE](#)

**Monday, October 21, 2019 at 12:00 PM (EDT)**

## Executive committee 2019-2020:

<b>President:</b>	<b>Flemming R. Cassee</b>
<b>Vice President:</b>	<b>Jenny R. Roberts</b>
<b>Vice President-Elect:</b>	<b>Jared M. Brown</b>
<b>Secretary/Treasurer:</b>	<b>Jonathan Henry Shannahan</b>
<b>Past President:</b>	<b>Aaron Erdely</b>
<b>Councilor:</b>	<b>Salik Hussain</b>
<b>Councilor:</b>	<b>Todd A. Stueckle</b>
<b>Postdoctoral Representative:</b>	<b>Katelyn Siegrist</b>
<b>Graduate Student Representative:</b>	<b>Candace Nicole Wong</b>
<b>Vice Student Representative:</b>	<b>Dorothy J. You</b>



Nominations for the 2020 Executive committee can be send to Aaron Erdely at [efi4@cdc.gov](mailto:efi4@cdc.gov)  
VPE, Councilor, secretary/treasurer, student and postdoc representatives

## 2019 Award winners



**Website:**

[http://www.toxicology.org  
/groups/ss/nano/](http://www.toxicology.org/groups/ss/nano/)

**The EU Nanosafety  
Cluster has renewed its  
website:**

[www.nanosafetycluster.eu](http://www.nanosafetycluster.eu)

Outstanding Post-Doctoral Fellow Award:  
Outstanding Graduate Student Award:

Valerie C. Minarchik  
Katherine A. Roach

Outstanding Graduate Student Award Honorable Mention: Candice Wong &  
Christopher G. Canal

Best Paper of the Year: Todd A. Stueckle et al., Short-Term Pulmonary Toxicity  
Assessment of Pre- and Post incinerated Organomodified Nanoclay in Mice, ACS  
Nano, 12:2292–2310, 2018