

# Fostering EU – US cooperation in Nanosafety and SynBio

Harvard University  
Joseph B. Martin Conference Center  
5th – 6th March 2019

## 1. Context and Approach

This event takes place in the context of the BILAT USA 4.0 project, funded by the European Union, which started on 1 February 2016. BILAT USA 4.0 with the aim of enhancing and developing science, technology, and innovation (STI) partnerships between the U.S. and Europe.

The following workshop on Nanotechnologies and SynBio is one of six workshops aimed at boosting STI collaboration activities in several established priority areas (health, marine, arctic, NMP, transport research) for EU-US research and innovation cooperation.

### Context

**Nanotechnologies** offer great potential of innovation in several sectors and research investment in this area are very significant globally. This potential can be implemented only if concerns about risks are adequately addressed.

For this reason the research programmes in both the USA and EU devote a considerable part to **hazard and exposure assessment** and **safe-by-design** work. Cooperation between these efforts has existed for years, in the shape of seven Communities of Research having annual face-to-face meetings, and ought to continue and extend.

A second area of research is that of **Synthetic Biology**. Synthetic biology has the ambitious goal of making life easier to engineer. However, some kinds of standard parts, analogous to those used in other engineering disciplines, are needed. The difficulty in having biological components that behave in a robust, universal fashion is well known. Some of the challenges of the living realm to be amenable to **standardisation** are linked to typical life features such as variability, mutation events, enzyme promiscuity and, ultimately, evolution. Synthetic Biology will only reach its ambitious goals if world-wide decisions in the frame of biological standardisation are taken.

## 2. Objectives

The aim of this workshop activity is to identify collaboration priorities in Nanosafety and SynBio research thematics for the next Horizon Europe<sup>1</sup>, in order to boost STI collaboration activities in EU and the USA in these fields. Accordingly, the workshop will gather two different communities. The Nanosafety community will focus on governance and safety issues. The Synbio community will focus on the progress for the development of standards. In addition, taking advantage of the presence of the two communities, the goal is to exchange already existing knowledge and practices developed in the nanotechnologies field in relation to governance and safety. The SynBio community will participate in this discussion, hoping it may identify aspects that have interest in their own field.

The objectives can be summarized as follows:







- To extend the Nanosafety cooperation to next generations of nanomaterials with more active academic participation;
- To advance the EU-US cooperation in the development of SynBio standards, and in SynBio in general;

---

<sup>1</sup> [Horizon Europe](#) is the upcoming European Union Framework Programme for Research and Innovation, to be launched in 2021.

- To exchange knowledge and practice in risk governance and standards from nanotechnologies to SynBio

### 3. Agenda

DAY 1	
8.30-9.00	Registration – Welcome coffee
<b>9.00 – 11.00</b>	<b>Plenary Session</b>
9.00 – 9.10	Opening, welcome, objectives of the workshop <b>Philip Demokritou</b> , Director of the Center for Nanotechnology and Nanotoxicology at the Harvard T. H. Chan School of Public Health
9.10 -10.15	<p><b>Governance of technologies and RRI and current programmes in Nano and SynBio</b> <i>Moderated by: Philip Demokritou, Director of the Center for Nanotechnology and Nanotoxicology at the Harvard T. H. Chan School of Public Health</i></p> <p> · The European Perspective <b>Carmen de Vicente Coll</b>, European Commission <b>Carlos Eduardo Lima Da Cunha</b>, European Commission</p> <p> · The US Perspective <b>Lisa E. Friedersdorf</b>, Director of NNI (tbc)</p>
10.15 – 11.30	<p><b>Current US and EU running projects and next actions in Nanosafety and SYnBio</b> <i>Moderated by: Victor de Lorenzo, CNB</i></p> <p><b>Nanosafety</b></p> <p> <b>EU perspective</b> <i>The Nanosafety cluster: how have we organized collaborations among dozens of projects</i> <b>Flemming R. Cassee</b>, Senior Scientific Advisor at the Netherlands National Institute for Public Health and the Environment (RIVM) and member coordination team EU NanoSafety Cluster</p> <p> <b>US perspective</b> <i>US NIH/NIEH US NIH/NIEHS Nanotechnology Health Implications Research (NHIR) consortium</i> <b>Sri Nadadur</b>, Director of Nanoprogram at NIEHS and NHIR consortium (tbc)</p> <p><b>SynBio</b></p> <p> <b>EU perspective</b> <i>Fostering Synthetic Biology standardization through international collaboration –</i> <b>Manuel Porcar</b>, Universitat De Valencia <i>SynBio projects funded by Horizon2020 –</i> <b>Carmen de Vicente Coll</b>, European Commission</p> <p> <b>US perspective</b> <b>Patrick P. Rose</b>, Science Director for Synthetic Biology, Office of Naval Research Global (tbc)</p>
11.30 - 17.00	<p><b>Split out sessions: Reporting from projects, defining scope of cooperation</b></p> <p><b>A: Nanosafety</b> <i>Moderated by Carlos Eduardo Lima Da Cunha, European Commission</i></p> <p>Knowledge share among EU and US projects in Nanosafety focusing on Nanosafety cooperation to next generations of nanomaterials:</p> <ul style="list-style-type: none"> <li>· Grouping, leading to read-across and classification of nanomaterials and nanoforms –</li> </ul>

	<p><b>Vicki Stone</b>, Herriot Watt University (EU project GRACIOUS)</p> <ul style="list-style-type: none"> <li>Advanced and realistic tools and methods for nanomaterial safety assessment -</li> </ul> <p><b>Flemming R. Cassee</b>, RIVM, Netherlands (EU project PATROLS)</p> <ul style="list-style-type: none"> <li>From Nanosafety research to risk governance – <b>Maria Dusinska</b> (EU project RISKGONE)</li> <li>Nanoinformatics – <b>Andrea Haase</b> (EU project NanoInformatiX)</li> <li>Risk Governance - <b>Keld Alstrup Jensen</b>, Danmarks Tekniske Universitet (EU project caLIBRAte) (tbc)</li> </ul> <ul style="list-style-type: none"> <li>NIH/NHIR consortium: Project highlights from NHIR projects (tbc)</li> <li>Project highlights from NIOSH - <b>Eileen Kuempel</b>, NIOSH (tbc)</li> </ul>
	<p><b>B: Synthetic biology</b> Moderated by Manuel Porcar, Universitat de València</p> <p>How can we strengthen the cooperation in SynBio standards between EU and US? Could the cooperation between EU and US in standards advance SynBio research and results?</p> <p>Presentations from: <b>Manuel Porcar</b>, Universitat de València</p> <p><b>Megan Palmer</b>, Stanford University (tbc) <b>Igor Linkov</b>, US Army Engineer Research and Development centre (tbc)</p>
<b>13.00 – 14.00</b>	<b>Lunch break</b>
<b>17.00 -17.30</b>	Preparation for the knowledge exchange

<b>DAY 2 Knowledge and practice exchange camp</b>	
<b>Facilitators: Martina Desole, APRE - Marco Valente, Plecter</b>	
<b>9.00 – 10.30</b>	<b>Plenary session</b>
9.00 – 10.30	<p><b>Roundtable – Nano meets SynBio</b> Moderated by: <i>Martina Desole</i></p> <p>What are the most relevant questions on governance and standards that the Nano community can help the SynBio community to answer?</p> <p><b>Philip Demokritou</b>, Harvard University – <b>Mar Gonzalez</b>, OECD (tbc) – <b>Victor de Lorenzo</b>, CNB - <b>Igor Linkov</b>, US Army Engineer Research and Development centre (tbc), <b>Steffi Friedrichs</b>, AcumenIST (tbc),</p>
<b>10.30 – 16.30</b>	<b>Knowledge and practice exchange in Risk governance from Nano to SynBio</b>
12.30 – 14.00	Lunch break
16.30 – 17.00	Conclusions and future actions