## NNI hosts the 11th meeting of the U.S.-EU NanoEHS Communities of Research (CORs)

On **November 16 and 17**, **2023,** NNCO, on behalf of the NNI, hosted the 11th meeting of the U.S.-EU Nanotechnology Environmental, Health, and Safety (NanoEHS) Communities of Research (CORs). The U.S.-EU NanoEHS CORs were created as a platform for U.S. and EU nanosafety researchers to collaborate on building transatlantic research communities in seven scientific disciplines: characterization, exposure, human toxicity, ecotoxicity, databases and modeling, risk assessment, and risk management. The 2023 annual workshop attracted more than 50 attendees from Europe, South America, and Asia and sparked interesting synergies and fresh conversations between the long-standing members of the CORs and recent and new participants.

The annual COR workshops, which alternate between the United States and Europe, provide an opportunity for the CORs to connect on a regular basis and evaluate their activities in the evolving nanotechnology landscape. The 2023 workshop is the first in-person meeting in the United States since 2018. The CORs agenda, which has included workshop activity since 2016, is planned by the COR co-chairs, with coordinating support from NNCO. In his opening remarks, NNCO Director Branden Brough welcomed the attendees and thanked the CORs for providing leadership in this valuable model of international cooperation in nanosafety research. Please visit the workshop page for more information on the meeting agenda and speakers.

During the 20 years since the authorization of the NNI, contributions to nanosafety research by other countries and regions have also grown. An important action for the CORs going forward is to connect with established regional and transnational groups and forums beyond the United States and Europe. To advance that agenda, NNCO, on behalf of the COR co-chairs, invited Dr. Tae Geol Lee, of the Korea Institute of Standards and Science (KRISS), to give the workshop keynote presentation. Dr. Lee highlighted R&D activities of the Institute and its Nanosafety Metrology Center. The Center, which was established in 2014, has developed an impressive list of reference materials. Like similar centers and institutions in the United States and other regions, the Center is working to develop reference materials for nanoplastics and liposomes, the latter being important for mRNA vaccine delivery platforms. Dr. Lee also mentioned the Center's outreach to stakeholders, noting the creation of a "nanomaterials safety research club" to engage industry.

The 2023 CORs workshop continued discussions that started in 2020 on leveraging the nanosafety infrastructure (facilities, EHS data and databases, and nanosafety investigators) that has been developed over the past 20 years to improve societal well-being and to mitigate global challenges. The U.S.-EU nanosafety community is uniquely poised to address many of the pressing environmental challenges because of their expertise investigating environmental and health implications of engineered nanomaterials and experience in bridging disciplinary and international barriers to collaboration. This community is eager to apply their knowledge and skills to pressing environmental problems. Supporting this objective, COR co-chairs for Human Toxicity and Risk Management organized a panel with representatives from academia, government, and industry in a session on *Nanotechnology for Sustainable Food and Agriculture Systems*.

In their "year in review," the co-chairs of several CORs reported on activities to address research challenges on nanoplastics in the environment, indicating the importance of this issue as a bridge between traditional

safety research on engineered nanomaterials and emerging nanoscale contaminants of concern. Research findings in these areas were explored in sessions organized by the Characterization, Exposure, Ecotoxicity, and Risk Assessment CORs, which explored the EHS issues related to incidental nanoscale materials, such as nanoplastics and wildfire particulates. These global challenges and opportunities are also being considered in an upcoming refresh of the NNI's 2011 EHS Research Strategy.

The pairing of the NNI's first Nanoinformatics Conference on November 15 (see conference summary here) with this year's CORs workshop was intentional, reflecting the continued importance of data, informatics, and modeling in evaluating nanotechnology's environmental, health, and safety implications. Both NNI communities (nanosafety and nanoinformatics) share a common interest in the growth and evolution of the nanotechnology informatics knowledge framework for nanosafety evaluation and responsible nanotechnology innovation. The Databases and Computational Modeling CORs session, *Connecting Data Resources through Common Metadata and Translating Research into Standards, Guidelines, and Guidance Documents,* described a project involving European and U.S. researchers to develop machine-readable unique identifiers for nanomaterials. Other important developments in this area are the availability of the NanoCommons User Guidance Handbook as a knowledge resource from the NanoCommons data and informatics "shepherds," as well as ongoing work to harmonize knowledge for safer materials via the NanoCommons knowledge base.

The workshop ended on a high note, with a summary of an interactive exercise to develop a multidisciplinary nanoplastics research agenda. The challenges for nanoplastics research today have analogies to those facing nanoEHS researchers a decade ago. This interactive exercise asked each COR to identify three challenge areas related to nanoplastics in their community and developments from other disciplines that are important in providing answers to those key questions. A synthesis of these comments will be included in a full summary of the meeting. The CORs leadership will discuss avenues for disseminating the workshop exercise. Previous CORs workshop activities have been included in peer-reviewed journal articles.

**About the U.S.-EU NanoEHS CORS:** The U.S. -EU NanoEHS CORs first met in 2012, following the U.S.-EU Joint Workshop on *Bridging NanoEHS Research Efforts in 2011*. The Bridging NanoEHS meeting called for the development of CORs "to provide a communication platform for specific research theme, for example, materials, hazard, exposure, and risk control and to obtain maximum collaboration with minimal budgets." The 2011 meeting also called for "annual workshops to provide face-to-face meetings of researchers and a venue to continue and mature the U.S.-EU nanoEHS dialogue." Information on previous workshops can be found at https://us-eu.org/2022-nanoehs-cor-workshop/. While leadership and participation in the CORs is mainly from U.S. and EU nanosafety researchers, this meeting is open to the public. Recent workshops have discussed the two decades of progress in understanding the health and environmental implications of nanotechnology and successes in bridging transatlantic perspectives and approaches to nanosafety assessment and management. Information on previous workshops can be found at https://us-eu.org/2022-nanoehs-cor-workshop/. For more information or to be added to the listservs for any of the CORs, contact CORmembership@nnco.nano.gov.