Risk Assessment CoR Objective #1
Notes from call on 27 March 2013

Input regarding CoR as a whole:

Our proposed mission for the CoR as it pertains to meeting each of the 9 objectives in our scope is to become a touchstone resource for people to access in order to find the pulse of the developing field of nanomaterial risk assessment in the US and EU.

We propose that providing a framework of the types of information needed to meet the various objectives could in itself be a valuable output, and may realistically be the extent of what CoR members are able to contribute in absence of funding. Within the time and energy available to commit to these CoR activities, the most important goal is to enable and enliven conversations between nanotechnology risk assessment researchers that may otherwise not be possible without the CoR.

Building from this collection of resources and links to relevant groups, potential efforts may focused on pursuing resources to support new research in some of these areas of interest.

To structure this framework of resources, the website for our RA COR could potentially be organized as such:

Objective	Who has looked at this for nanotechnology in particular?	Who has looked at this for other topics that we could leverage in relation to nanotechnology?
1-9	• Links to other relevant groups • Copies of relevant publications or documents related to this CoR	• Links to other relevant groups Copies of relevant publications or documents related to this CoR

Objective #1:
"Coordinate with the Ontologies & Databases CoR on terminology and resources and enable inputs from the Ecotoxicology Testing & Predictive Models CoR, the Predictive Modeling for Human Health CoR, and the Exposure through the Life Cycle CoR to be meaningfully analyzed by methods from the Risk Assessment CoR in a manner that supports informed decision-making by the Risk Management & Control CoR."

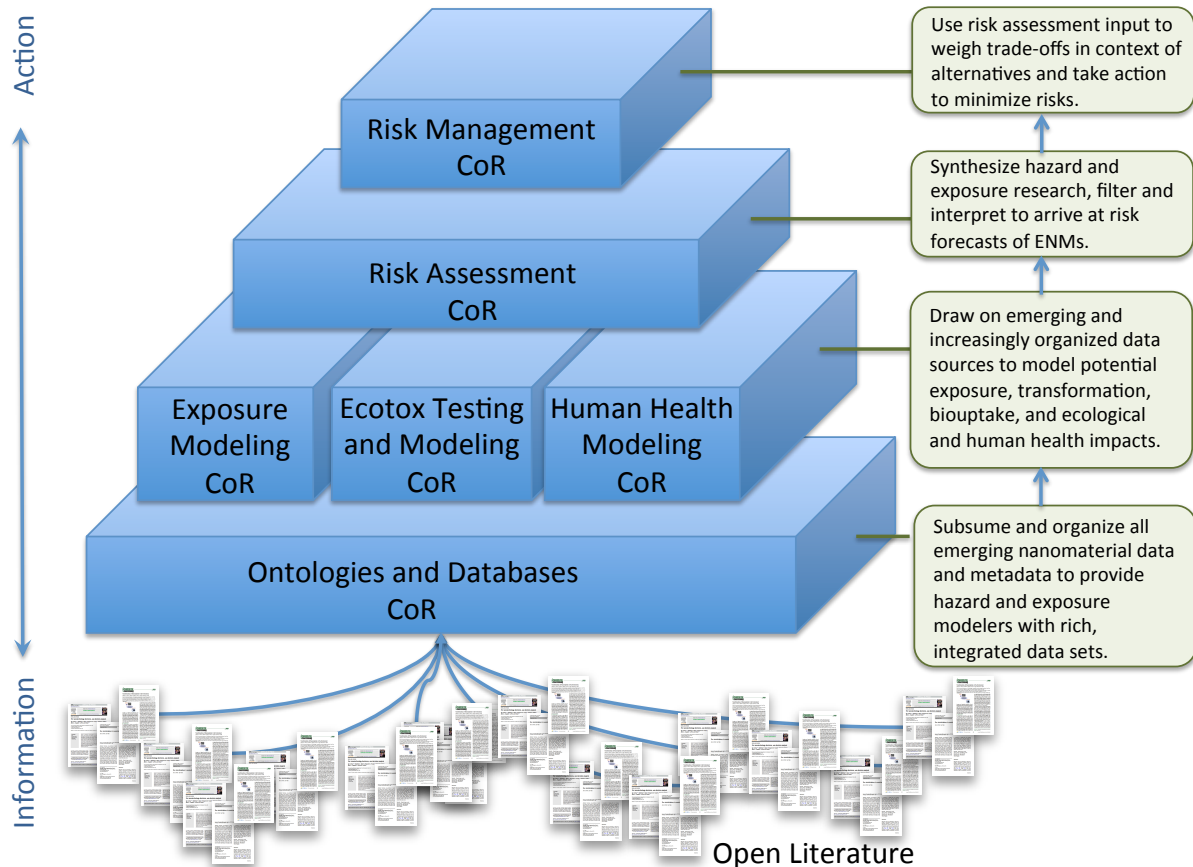Members: Derk Brouwer, Christine Hendren, Mark Hoover, Christy Powers

Objective 1 takes on the task of setting the framework for our CoR as a whole articulating hand-offs between our Risk Assessment CoR and the other CoRs. What information do we need from other CoRs to frame our direction? What inputs would be valuable from us in informing their directions?

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The figure below expresses the idealized "information to action continuum" with a streamlined flow of information from basic research through ultimate risk management actions.

Idealized Information-to-Action Continuum

Action

Risk Management CoR

Risk Assessment CoR

Exposure Modeling CoR · Ecotox Testing and Modeling CoR · Human Health Modeling CoR

Ontologies and Databases CoR

Information

Open Literature

Use risk assessment input to weigh trade-offs in context of alternatives and take action to minimize risks.

Synthesize hazard and exposure research, filter and interpret to arrive at risk forecasts of ENMs.

Draw on emerging and increasingly organized data sources to model potential exposure, transformation, biouptake, and ecological and human health impacts.

Subsume and organize all emerging nanomaterial data and metadata to provide hazard and exposure modelers with rich, integrated data sets.

To drive toward this streamlined information flow, we must articulate a framework defining what data or insights are valuable to communicate to and from each CoR, in order to shape the focus of the other CoRs. These types of hand-offs are listed below from the vantage point of our Risk Assessment CoR.

As we state above, the current scope may be limited to identifying existing nanotechnology efforts to answer these types of questions, or identifying approaches used for other topics that the nanoEHS community might leverage. Going forward, this list could also serve as a set of ideas for future research that may warrant the pursuit of dedicated resources.

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Group	Questions we have FOR the other CORs	Information We Should Provide TO the other CORs
Risk Management	• What products with nanomaterials should be looked at? • What decisions are being made in the near term that could be informed by risk assessment CoR discussion (e.g. definitions of nano? What information to require from companies?)	• What methods are being developed to rank risks of nanomaterials in a relative sense? • What specific risk forecasting needs are at the forefront of current thought and what might be their outputs? (i.e. what can risk managers expect to learn)
Exposure Modeling CoR	• What are the most important nanomaterial exposures to be concerned with (materials and pathways)	• What inputs do risk assessors need in order to harness exposure data and prioritize hazardous materials and likely routes of exposure for Risk Management? o Based on current methods o Based on any emerging methods
Eco-Tox Testing and Modeling CoR	• What are the most meaningful emerging parameters that we should be building into risk assessment approaches to predict nanomaterial eco toxicity? • What are the material parameters that go along with this? • What are the systems in which these parameters and materials are being/ need to be measured?	• What inputs do risk assessors need in order to harness eco-tox data and forecast risks of ENMs to ecosystems? o Based on current methods o Based on any emerging methods
Human Health Modeling CoR	• What are the most meaningful emerging parameters that we should be building into risk assessment approaches to predict nanomaterial effects on human health? • What are nanomaterials of primary focus in the existing and emerging human health studies?	• What inputs do risk assessors need in order to harness eco-tox data and forecast risks of ENMs to ecosystems? o Based on current methods o Based on any emerging methods
Ontology and Databases CoR	• What are the most widely accepted controlled vocabulary terms and required fields describing nanomaterials, systems and endpoints? • To what extent are databases linking to risk assessment approaches already in existence (EPA standard methods, etc.)	• What are the likely parameters that will feed into and come out of risk assessment methods or relative ranking approaches • What are the necessary meta-data for risk assessors to be able to compare studies against one another?

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