

Nanomaterials and the Environment: The Chemistry and Materials Science Perspective

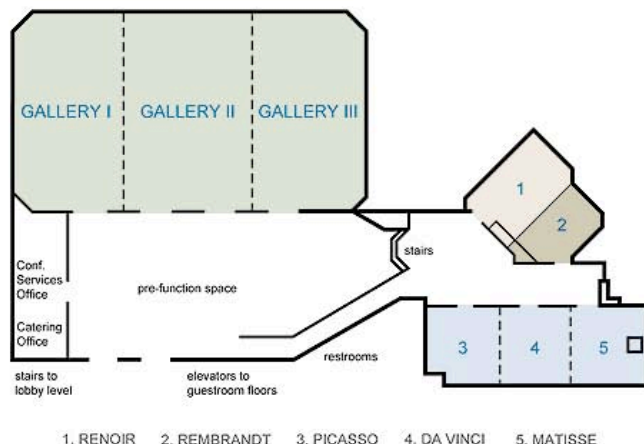
Workshop Schedule and Meeting Location Information

Meeting Location

Hilton Arlington

950 North Stafford Street, Arlington, Virginia, United States 22203

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Schedule

Monday June 27th

Arrival of all Workshop Participants

7PM Organizing Committee Only Meets with Dr. Zeev Rosenzweig to review and discuss materials collected from workshop participants, presentations for Tuesday AM and strategies to insure workshop goals are met. *Matisse Room* (#5)

Tuesday June 28th

Morning Schedule AM

8:00 – 8:30 Continental Breakfast *Gallery I*

8:30 – 8:45 Welcome Workshop Participants by Dr. Zeev Rosenzweig, NSF Program Officer Environmental Chemical Sciences Program *Gallery I*

8:45 – 9:00 Define the Goals of the Workshop in Identifying Science Drivers as well as Expectations of the Workshop and Workshop Participants: Co-Chairs Robert Hamers and Vicki Grassian *Gallery I*

9:00 – 10:40 Short Talks by Members of Organizing Committee, Gordon Brown, Howard Fairbrother, Murray Johnston and Lee Penn Based on Input from Workshop Participants *Gallery I*

Gordon Brown 9:00-9:20 to discuss

Overview of Participant Input on Fundamental Properties of Nanomaterials: *Surface adsorption and reaction processes relevant to environmental science (e.g. ROS generation)*
and

Infrastructure and Human Resource Needs in Nano/Environmental Science: *Computational tools*

Howard Fairbrother 9:20-9:40 to discuss

Overview of Participant Input on Fundamental Properties of Nanomaterials: *Influence of size, surface structure, surface coatings, compositional and structural complexity (nanocomposites) on fundamental properties*
and

Interaction of nanomaterials with biological molecules and biological systems: *Biological transformation of nanomaterials*

Murray Johnston 9:40-10:00 to discuss

Overview of Participant Input on Nanomaterial interactions with the environment: *Nucleation of nanoparticles in the environment*
and

Infrastructure and Human Resource Needs in Nano/Environmental Science: *Instrumentation*

R. Lee Penn 10:00-10:20 to discuss

Overview of Participant Input on Nanomaterial interactions with the environment: *Environmental release, transport and aggregation*
and

Interaction of nanomaterials with biological molecules and biological systems: *Nanoparticle-induced toxicity, changes in gene expression*

Vicki Grassian 10:20-10:30 to discuss

Overview of Participant Input on Nanomaterial interactions with the environment. *Chemical/Photochemical alteration and degradation of nanoparticles in the environment*

Bob Hamers 10:30-10:40 to discuss

Overview of Participant Input on Interaction of nanomaterials with biological molecules and biological systems: Molecular and chemical basis of bioavailability

10:50 – 12:30 Breakout Session I: Fundamental properties of nanomaterials

Group A. Influence of size, surface structure, surface coatings, compositional and structural complexity (nanocomposites) on fundamental properties *Da Vinci Room (#4)*

Aga, Castner, Elder, Fairbrother (lead), Johnston (scribe), Jun, Kane, Marr, Martin, Navrotsky (co-lead), Obare, Orr, Szakal

Group B. Surface adsorption and reaction processes relevant to environmental science (e.g. ROS generation) *Picasso Room (#3)*

Brown (lead), Baer (scribe), Forbes, Geiger, Gilbert, Haynes, Holden, Ivanisevic, Kim, Lead, Mason, McGuire (co-lead), Penn, Ranville, Sadik, Vecitis, Schneider

Afternoon Schedule PM

12:30-1:15 Working Lunch to Review Information from Breakout Session I for Report Out

1:30 – 2:15 Report Out by Each of the Co-Leads (Navrotsky and McGuire) from Breakout Session I with Discussion and Additional Input From All Participants *Gallery I*

2:15 – 3:45 Breakout Session II: Nanomaterial interactions with the environment

Group A. Environmental release, transport and aggregation *Da Vinci Room (#4)*

Aga, Elder, Fairbrother, Geiger, Haynes (scribe), Kane, Kim, Lead, McGuire, Orr, Ranville (co-lead), O'Bare, Penn (lead)

Group B. Chemical/Photochemical alteration and degradation of nanoparticles in the environment *Picasso Room (#3)*

Baer, Brown, Castner (co-lead), Gilbert, Grassian (lead), Holden, Ivanisevic, Mason, Schneider, Szakal (scribe), Vecitis

Group C. Nucleation of nanoparticles in the environment *Matisse Room (#5)*

Forbes (scribe), Johnston (lead), Jun, Martin (co-lead), Marr, Navrotsky, Sadik

4:00 – 5:00 Report Out by Each of the Co-Leads (Ranville, Castner and Martin) from Breakout Session II with Discussion and Additional Input From All Participants *Gallery I*

Dinner on own: Co-chairs and Organizing committee members and leads continue to refine reports from Breakout Sessions I and II based on discussion

Wednesday June 29th

Morning Schedule AM

8:30 – 9:00 Continental Breakfast outside Gallery I

9:00 – 10:30 Breakout Session III: Interaction of nanomaterials with biological molecules and biological systems

Group A. Molecular and chemical basis of bioavailability *Da Vinci Room (#4)*

Brown, Gilbert, Hamers (lead), Johnston, Jun, Kim (scribe), Lead (co-lead), Mason, McGuire, Navrotsky, Ranville, Sadik, Schneider

Group B. Nanoparticle-induced toxicity, changes in gene expression *Picasso Room (#3)*

Aga, Castner, Kane (co-lead), Marr, Martin, Obare, Orr (scribe), Penn (lead), Szakal, Vecitis

Group C. Biological transformation of nanomaterials *Matisse Room (#5)*

Baer, Elder (scribe), Geiger, Fairbrother (lead), Forbes, Haynes, Holden (co-lead), Ivanisevi

10:45 – 11:45 Report Out by Each of the Co-Leads (Lead, Kane and Holden) from Breakout Session III with Discussion and Additional Input From All Participants *Gallery I*

Afternoon Schedule PM

11:45 – 1:00 Working Lunch

1:00 – 2:30 Breakout Session IV: Infrastructure and Human Resource Needs in Nano/Environmental Science

Group A. Computational tools *Matisse Room (#5)*

Brown (lead), Gilbert, Marr, Martin, Mason (scribe), Navrotsky, Schneider (co-lead)

Group B. Instrumentation development *Da Vinci Room (#4)*

Aga, Baer, Castner, Fairbrother, Geiger (scribe), Haynes, Ivanisevic, Jun, Johnston (lead), Lead, McGuire, Ranville, Penn, Sadik (co-lead), Szakal

Group C. Chemistry leadership in environmental science *Picasso Room (#3)*

Elder, Forbes, Grassian (co-lead), Hamers (lead), Holden, Kane, Kim, Obare (scribe), Vecitis

2:45 – 3:45 Report Out by Each of the Co-Leads (Schneider, Sadik and Grassian) from Breakout Session IV with Discussion and Additional Input From All Participants *Gallery I*

3:45 – 4:30 Grand Synthesis and Coherent Summaries for Workshop Report *Gallery I*

Discussion amongst all participants of breakout session findings and to determine if there are commonalities/differences /interplay between areas

-Preparation of Final Reports by Breakout Groups

-Preparation of PowerPoint Slides to Summarize Final Reports

4:30 – 5:00 Executive Summary of Workshop and Next Steps (Hamers, Grassian and Rosenzweig) *Gallery I*

Workshop Participants Done – Thank you!

Thursday June 30th

Morning Schedule AM

8:00 – 8:30 AM Continental Breakfast for Organizing Committee

8:30 AM – 12:30 PM Organizing Committee Continues to Work on a Draft Workshop Report and Workshop Presentation as well as Prepares Executive Summary with Science Drivers and Steps Forward to Share with NSF Personnel.