### 2015 CEINT Annual Internal Meeting, May 13th & 14th

**Meeting Location:** Schiciano Auditorium, 1st floor of the Fitzpatrick Center for Interdisciplinary Engineering, Medicine and Applied Sciences, First building on the right when dropped at the Science Drive traffic circle • 101 Science Drive • Durham, NC 27708

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30</td>
<td><strong>Meet in Hotel Lobby - Bus LEAVES at 7:45 sharp</strong></td>
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<tr>
<td>8:00</td>
<td><strong>Continental Breakfast in Atrium</strong></td>
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<tr>
<td>8:15</td>
<td>Director’s welcome and introductory remarks – Mark Wiesner</td>
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<tr>
<td>9:00</td>
<td>Agenda overview and administrivia – Christine Hendren</td>
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<tr>
<td>9:05</td>
<td><strong>Session 1: Nanomaterial Design, Synthesis, Characterization and Detection</strong></td>
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<tr>
<td>10:05</td>
<td><strong>Session 2: Realistic Exposures</strong></td>
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<tr>
<td>10:15</td>
<td><strong>Break</strong></td>
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<tr>
<td>11:15</td>
<td><strong>Session 3: Fate, Transport and Transformations</strong></td>
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<tr>
<td>12:15</td>
<td><strong>Lunch</strong></td>
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#### Panel-led Discussion:
- **Panelists:** Marc Michel, Peter Vikesland, Jerome Rose
- **Panelists:** Lee Ferguson, Ben Colman, Jean-Yves Bottero
- **Panelists:** Kim Jones, Gordon Brown, Mark Wiesner

#### Presentations:
- **Marjorie Willner:** High Throughput Optofluidic SERS Interrogation
- **Xuehong Liu:** Metal Fingerprinting Approach to Quantify Single-walled Carbon Nanotube
- **Rui Serra Maia:** Structure and Physico-Chemical Characterization of a Platinum Nanocatalyst Material
- **Astrid Avellan:** Tunable Ecofriendly Alumino-germanate Nanotubes as a Model Compound for Ecotoxicity Studies
- **Matthew Chan:** High Sensitivity Detection and Characterization of Dissolved Species – Gold Nanoparticle Interaction in Water via Surface Enhanced Raman Spectroscopy
- **Theresa Dankovich:** Release and Transformations of Silver Nanoparticles in Polymeric Nanocomposites Exposed to Environmental Scenarios
- **Manuel Montaño:** Release of Polymer Additives and Plasticizers from Polymer Nanocomposites Containing CNTs
- **James Dale:** Characterization and Ecosystem Impacts of Cerium Emitted from n-ceria Diesel Fuel-borne Catalysts
- **Mathieu Therezien:** Exposure to NPs via Heterogeneous Aggregation
- **Yi Yang:** The Importance of a Nanoscience Approach in the Understanding of Major Aqueous Contamination Scenarios: A Case Study from a Recent Coal Ash Spill
- **S. M. Hossein Abtahi:** Fate and Transport of Elongated Shape Gold Nanorods in Aquatic Matrices
- **Shauna-Gaye Campbell:** Mobility of Transformed Nanomaterials through Porous Media
- **Kaiqi Fang:** Possible Reactions for CuS in the Sediment
- **Xiaoyu Gao:** Dissolution of NPs in Soil
- **Amy Dale:** Stream Dynamics and Chemical Transformations Control the Environmental Fate of Ag and ZnO Engineered NPs

**Agenda Overview and Administrivia**
- Welcome and Introductory Remarks
- Director's Remarks
- Overview of CEINT

**Panelists:**
- Mark Wiesner
- Hossein Abtahi
- Gaye Campbell
- Montaño
- Greg Lowry
- Linsey Marr
- Jie Liu
- Shauna-Gaye Campbell
- Andrew Bish
- Marjorie Willner
- Matthew Chan
- Yi Yang
- Christen Hendren
- Christine Wiesner
- Theresa Dankovich
- Manuel Montaño
- James Dale
- Mathieu Therezien
- Amy Dale

**Moderators:**
- Mark Wiesner
- Hossein Abtahi
- Gaye Campbell
- Montaño
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- Amy Dale
**Wednesday May 13th Continued**

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presentations</th>
<th>Panel-led Discussion</th>
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</table>
| 1:15  | 2:15    | **Session 4: Bioavailability, Biouptake & Bioaccumulation**<br>Chuanjia Jiang | **Effects of Natural Organic Matter on the Dissolution, Aggregation and Uptake Kinetics of Copper Oxide Nanoparticles**
|       |         | Carol Johnson                                      | **Mercury Methylation: The 3D Relationship between Bioavailability, Bacterial Gene Expression, and Methylmercury Production**
|       |         | Clement Layet                                      | **Phytoavailability of Nanoparticles, Speciation and Modelisation**
|       |         | John Stegemeier                                    | **Transformations of Engineered Nanoparticles in Natural Systems and Interactions with Plant Roots**
|       |         | Amalia Turner                                      | **An Integrated Approach to Predicting Bioaccumulation of Nanomaterials in Plants**
|       |         |                                                   | **Panel-led Discussion**
| 2:15  | 2:50    | **Session 5: Life Cycle Thinking and Risk Assessment**
|       |         | Paramjeet Pati                                     | **Life Cycle Considerations for Sustainable Nanotechnology**
|       |         | Marina Vance                                        | **Nanotechnology in the Real World: Redeveloping the Nanomaterial Consumer Products Inventory**
|       |         | Véronique Adam                                      | **Assessing the Environmental Impacts and Risks of TiO₂ ENMs using Bayesian Networks at a Site-Specific Scale**
|       |         |                                                   | **Panel-led Discussion**
| 2:50  | 3:00    | **Break**                                           | **Special sessions**
| 3:00  | 6:30    | A. All students, post-docs, scholars – CSSC Sessions, including 5:00 cocktail hour with hors d’oeuvres (see separate agenda) | **Bus transportation to Faculty dinner leaving from Science Drive Traffic Circle**
| 3:00  | 5:15    | B. Faculty: Mesocosm planning and data integration discussions | **Bus transportation from CSSC Sessions to Hotel leaving from Science Drive Traffic Circle**
| 5:30  |         |                                                   | **Bus transportation to Faculty dinner leaving from Science Drive Traffic Circle**
| 6:30  |         |                                                   | **Bus transportation from CSSC Sessions to Hotel leaving from Science Drive Traffic Circle**

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## Thursday May 14th

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<td>CSSC Leadership report out of Thursday CSSC session outcomes</td>
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### Research presentations and discussions

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<tbody>
<tr>
<td>9:00</td>
<td>Session 6: Organismal Impacts of Nanomaterials</td>
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<tr>
<td>10:20</td>
<td>Moderator: Jason Unrine Panelists: Joel Meyer, Kelvin Gregory, Jeremy Gernand</td>
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<tr>
<td>10:35</td>
<td>Break</td>
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<tr>
<td>11:50</td>
<td>Session 7: Nanomaterial Impacts in Natural and Engineered Ecosystems</td>
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<tr>
<td>1:00</td>
<td>Lunch</td>
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<tr>
<td>2:00</td>
<td>Session 8: Data Integration and Analysis</td>
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<tr>
<td></td>
<td>Overview of the Data Integration Team Goals and Activities – Christine Hendren</td>
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<td></td>
<td>Introduction to CEINT Nanoinformatics Knowledge Commons – Sandra Karcher</td>
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<tr>
<td>11:50</td>
<td>Moderator: Cole Matson Panelists: Claudia Gunsch, Ben Colman, Greg Lowry</td>
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### Panel-led Discussion

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### Presentations

- Alex Bertuccio: Natural Organic Matter Increases Tolerance to Silver Nanoparticles
- Danielle Gorka: Effect of Oxidation Time on Winged-Carbon Nanotube Phytotoxicity
- Stuart Lichtenbert: Sulfidated Silver Nanoparticles Induce Toxicogenomic Effects Distinct from Pristine Silver Nanoparticles and Silver Ions
- Eric McGivney: TiO$_2$ Nanoparticles Prevent *B. subtilis* Cell Lysis in Low Nutrient Conditions
- Temitope Adegboy: Impacts of Graphene Oxide on Bacterial Growth, Biofilm Formation, and Microbial Community Function
- Mohamed Hamidat: Relationships Between ENMs’ Design and their Environmental Impact
- Anye Wamucho: Multigenerational Effect of Silver Nanoparticles on Reproduction and Genomic Stability in *C.elegans*
- Vignesh Ramchandran: Clustering Analysis for Pulmonary Toxicity Studies in Rodents

### Panel-led Discussion

- Moderator: Jason Unrine Panelists: Joel Meyer, Kelvin Gregory, Jeremy Gernand
- Moderator: Cole Matson Panelists: Claudia Gunsch, Ben Colman, Greg Lowry

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<tr>
<td>2:00</td>
<td>Session 9: Translational Nanoscience: Implications of CEINT Research for Water Treatment Processes</td>
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<tr>
<td>2:45</td>
<td>Should the Drinking Water Industry be Concerned about Nanomaterials in our Water? – Greg Lowry</td>
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<tr>
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<td><strong>Presentations</strong></td>
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<tr>
<td></td>
<td>Danna Shan</td>
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<td></td>
<td>Removal of Carbamazepine and Tetracycline from Water by Magnetic Carbonaceous Nano-adsorbents Prepared by Ball-milling</td>
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<td>Michael Vargas</td>
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<td>Role of Filter Media on Nanoscale Formation of Colloidal Manganese Oxides During Drinking Water Treatment</td>
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<tr>
<td>2:45</td>
<td>Director’s Wrap-up and Adjourn</td>
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**Panel-led Discussion**

- **Moderator:** Mark Wiesner
- **Panelists:** Mitsuhiro Murayama, Claudia Gunsch, Liz Casman

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