Help Identify Critical Nanotechnology Opportunities for Addressing Climate Change!

Tuesday, February 21st 1pm-3pm EST via Zoom

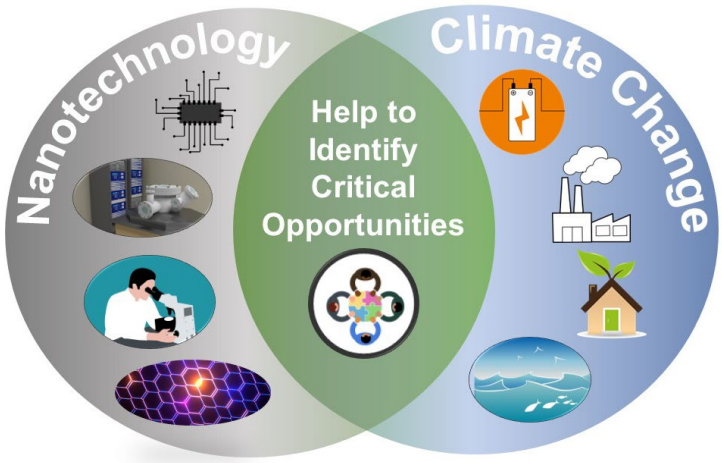
This event, hosted by the NNCI Research Community for Nanotechnology Convergence, seeks to **identify and build consensus on key R&D needs and opportunities to help address climate change using nanotechnology**. The key R&D needs and opportunities should support progress in areas categorized by numerous governmental and organizational reports including but not limited to ERVA, OSTP's game-changing application areas, and DOE's Energy Earthshots Initiative.

Specifically, the initiative seeks to identify, prioritize, and disseminate the:

i) underpinning nanotechnology/nanoscience fundamental/basic science research areas that can best support solutions to climate change challenges in both short-term and long-term,

ii) necessary characteristics of the research process, e.g. aspects of convergence including contributing disciplines, stakeholder engagement, and

iii) capabilities and expertise in open-access nanotechnology research facilities to support current and future research needs.



Agenda (Eastern Standard Time)

1:00 – 1:10 PM – **Welcome and Introduction** by *Dr. Jacob Jones, lead of the NNCI Research Community for Nanotechnology Convergence*

1:10 – 1:25 PM – **Review of NNI's Nano4Earth Kick-Off Workshop** by *Dr. Matthew Hull, Director, Nanoscale Characterization and Fabrication Laboratory (Virginia Tech)*

1:25 – 1:40 PM – **Introduction to the NSF Engineering Research Visioning Alliance (ERVA) Report, "The Role of Engineering to Address Climate Change"** by *Professor Khara Grieger, Ph.D., Environmental Health and Risk Assessment (NC State University)*

1:40 – 1:45 PM – **Enter Breakout Rooms and Introductions**

1:45 – 2:30 PM – **Breakout Rooms**

- Energy storage, transmission, and critical materials
- Greenhouse gas capture and elimination
- Resilient, energy-efficient, and healthful infrastructure
- Water, ecosystems, and geoengineering assessment

2:30 – 2:55 PM – **Report outs from Breakout Groups**, *which will feed into the workshop report*

2:55 – 3:00 PM – **Closing**

Research Area Questions	Research Process Questions	Open-Access Nanotech Research Facility Questions
What are **key research gaps** that are **worthy of long-term** (5-to-10 year) pursuit (i.e., requiring long-term research support)? What **nanotechnology/ nanoscience research** is needed to address the key research gaps identified by the previous question?	What is needed to **guide** nanotechnology research **prioritization** and **resources** in the challenging problem of climate change? (e.g., from systems-level analyses, global boundary models, and intervention scenario analysis) Who are the relevant **stakeholders** (broadly) and what **disciplines** should be engaged in the process of researching nanotechnology to address climate change? What do we know about converging diverse disciplines, sectors, industries, and stakeholders in addressing **other grand challenges** that can be used to help address climate change using nanotechnology?	Are the current open-access nanotechnology **facilities adequate to support future research needs** (including cleanrooms, materials characterization facilities, field sites, research greenhouses, pilot plants, etc.)? Do current **facility personnel** in open-access facilities (e.g., technical staff, research scientists, leadership, etc.) possess the **experience and expertise** to support future needs in this breakout session topic area?

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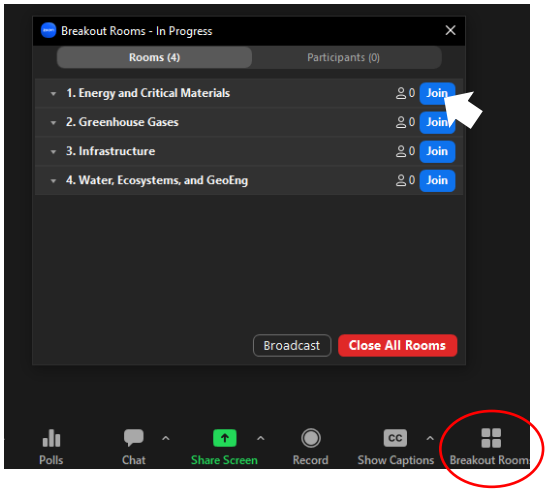
Breakout Room Functionality

Attendees will meet in small groups to provide important stakeholder perspectives on a variety of specific questions.

Discussion topics are broken down according to the categorization in the ERVA report and include:

- Energy storage, transmission, and critical materials
- Greenhouse gas capture and elimination
- Resilient, energy-efficient, and healthful infrastructure
- Water, ecosystems, and geoengineering assessment

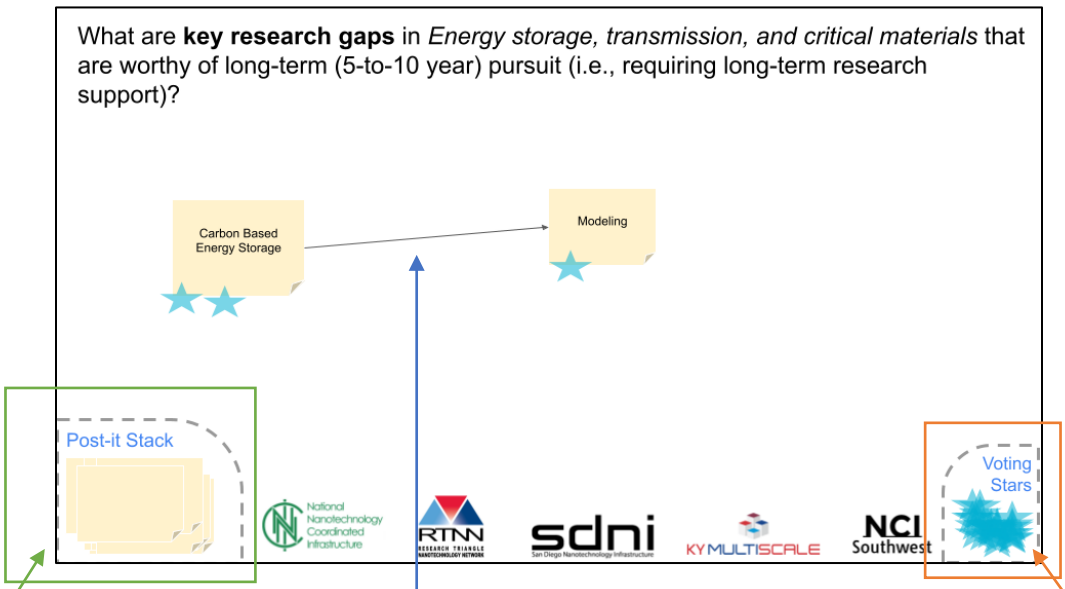
At 1:45PM EST, you will be asked to *move yourself* to a breakout room of your choice.



Within the breakout rooms, a link will be added to the Chat Box to access a shared Google Slide deck. You are encouraged to open this shared document on your personal device. If you cannot access Google Slides, your input is welcome on each question through the Chat Box.

The facilitator will share their screen on Zoom to display the Google Slide deck and to guide the discussion.

Example:



For each question, you can click and drag a "Post-it" from the bottom left on to the slide.

You may also use other features, like drawing lines to connect thoughts.

If you agree with someone else's "Post-it", you can upvote the idea by dragging a Voting Star from the bottom right.

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