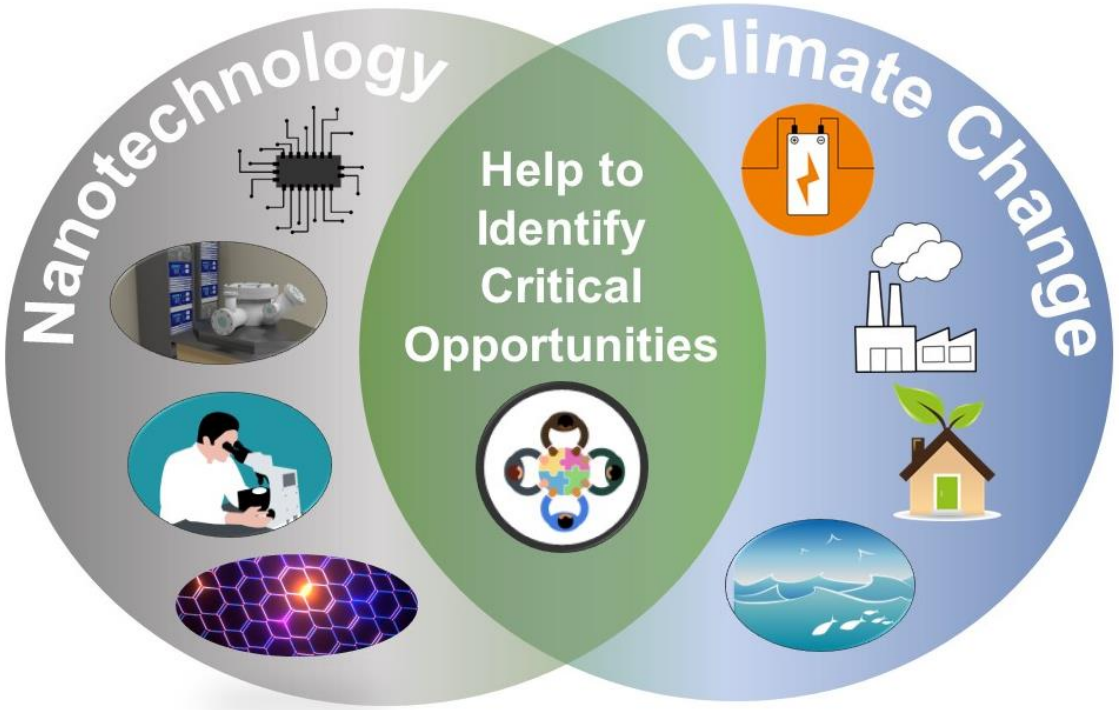
Welcome!

Identifying Critical Nanotechnology Opportunities for Addressing Climate Change



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

To address any technical difficulties, reach out to Phillip Strader through Chat

Please consider changing your **Zoom name** to include your name and institution or “anonymous” if desired for transcript purposes in breakout rooms

Some resources, including these slides and the full program agenda that was emailed to registrants is now available online at:
http://go.ncsu.edu/rc-nano

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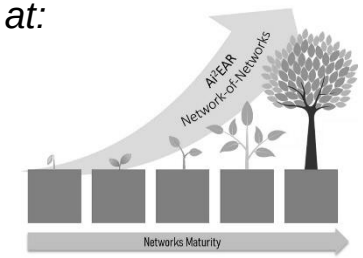
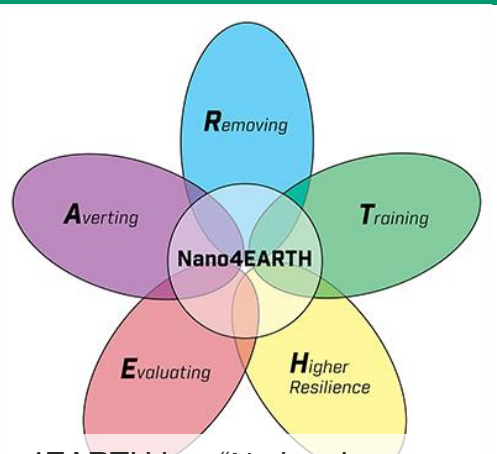


Promoting Collective Action to Address Climate Change

"U.S. Innovation to Meet 2050 Climate Goals describes 37 game-changing R&D opportunities… for near-term wins, investments in underserved communities…, and long-term transformation of the energy system."

NNI

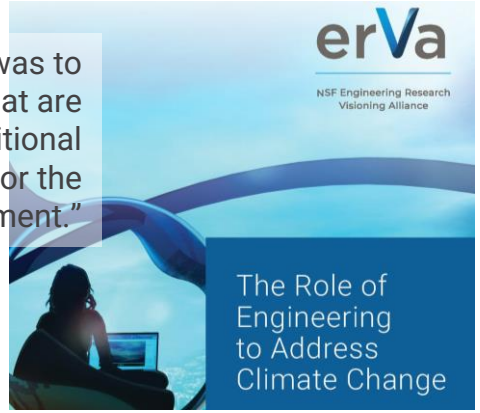


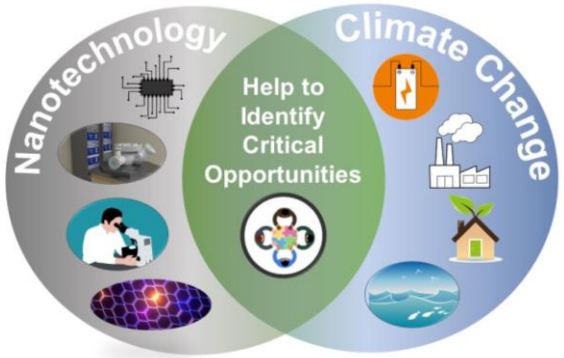
Nano4EARTH is a "National Nanotechnology Challenge to develop technologies and industries that advance the… Administration's commitment to tackling the climate crisis" – White House OSTP (Jan. 26, 2023)

ENERGY earthshots
U.S. DEPARTMENT OF ENERGY

"The climate crisis calls for a different kind of moonshot."

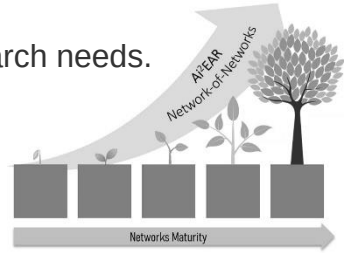
"The goal of this event was to identify specific areas that are nascent or require additional exploration with the potential for the greatest return on investment."





Complementing these, our initiative seeks to identify, prioritize, and disseminate the:

1. Underpinning **nanotechnology basic science research areas** that can best support solutions to climate change challenges in both short-term and long-term,
2. Necessary characteristics of the **research process**, e.g. aspects of convergence including contributing disciplines, stakeholder engagement, and
3. Capabilities and expertise in **open-access nanotechnology research facilities** to support the research needs.



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NNCI Focus on Nanotechnology Opportunities for Addressing Climate Change

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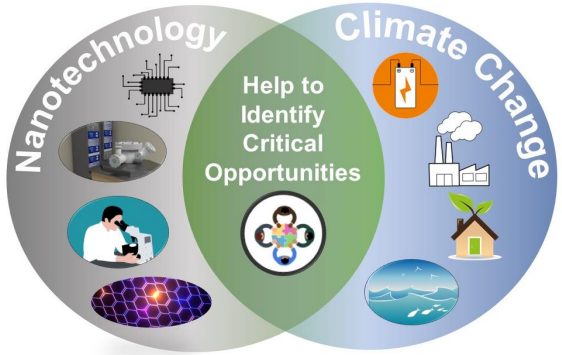


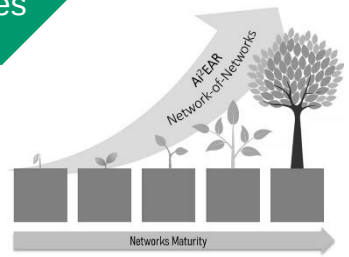
NNCI provides specialized, open-access nanotechnology resources

NNCI Research Communities are groups organized around a particular research topic, national priority, or grand challenge; they are outward facing, helping to develop products that benefit the larger scientific and engineering communities.

The 2023 goal of the Research Community for Nanotechnology Convergence is to bring together stakeholder from diverse disciplines and perspectives to work toward a common vision and public report for the future role of university open-access facilities in **Nanotechnology for Addressing Climate Change**.

TODAY

- Open invitation for stakeholder input
- Expanded working group distills input and determines, if needed, additional activities, to form a published report
- Document reviewed by other expert volunteers
- Document published in open-access location with DOI
- Informs researchers, agencies, and future open-access nanotechnology facilities



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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)*

1:40 – 1:45 PM – **Enter breakout rooms and introductions**

1:45 – 2:30 PM – **Breakout sessions** with Guiding Questions

1. Energy storage, transmission, and critical materials
   Facilitator: Nina Balke; Notetaker: Jacob Jones
2. Greenhouse gas capture and elimination
   Facilitator: Mark Spitler; Notetaker: James Custer
3. Resilient, energy-efficient, and healthful infrastructure
   Facilitator: Nicky Cates; Notetaker: Phillip Strader
4. Water, ecosystems, and geoengineering assessment
   Facilitator: Taylor Moot; Notetaker: Maude Cuchiara

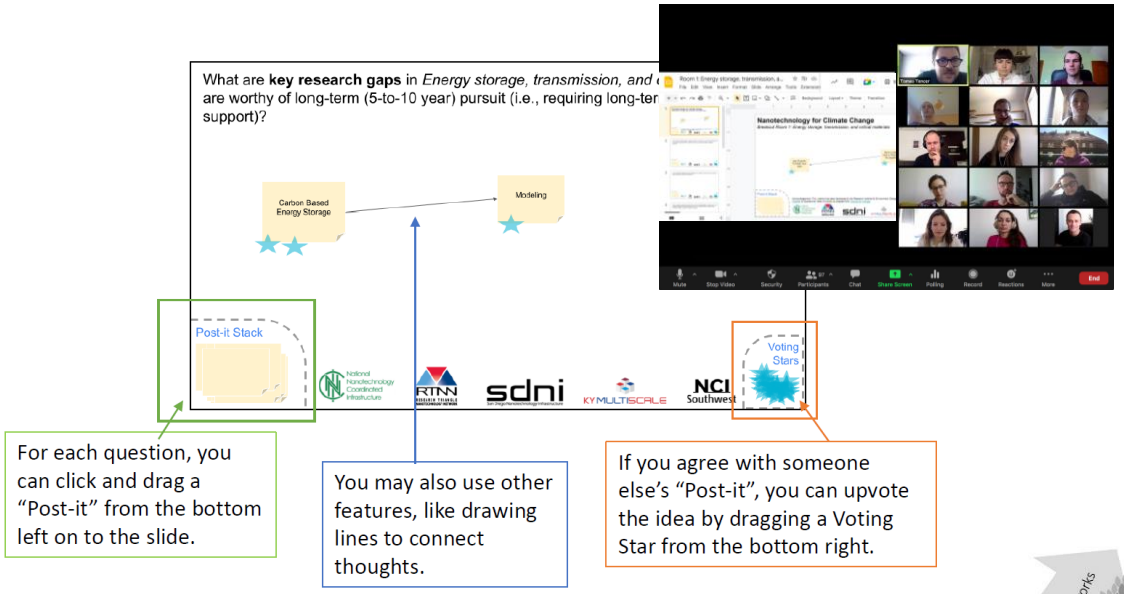
2:30 – 2:55 PM – **Report outs from breakout leads or designee**

2:55 – 3:00 PM – **Closing and Call to Action**

Breakout rooms designed to facilitate engagement using shared brainstorming document on *parallel Google Slide document*, and the use of *guiding questions* and *facilitators*

Guiding questions focus on:

- Research areas
- Research process
- Open-access research facilities



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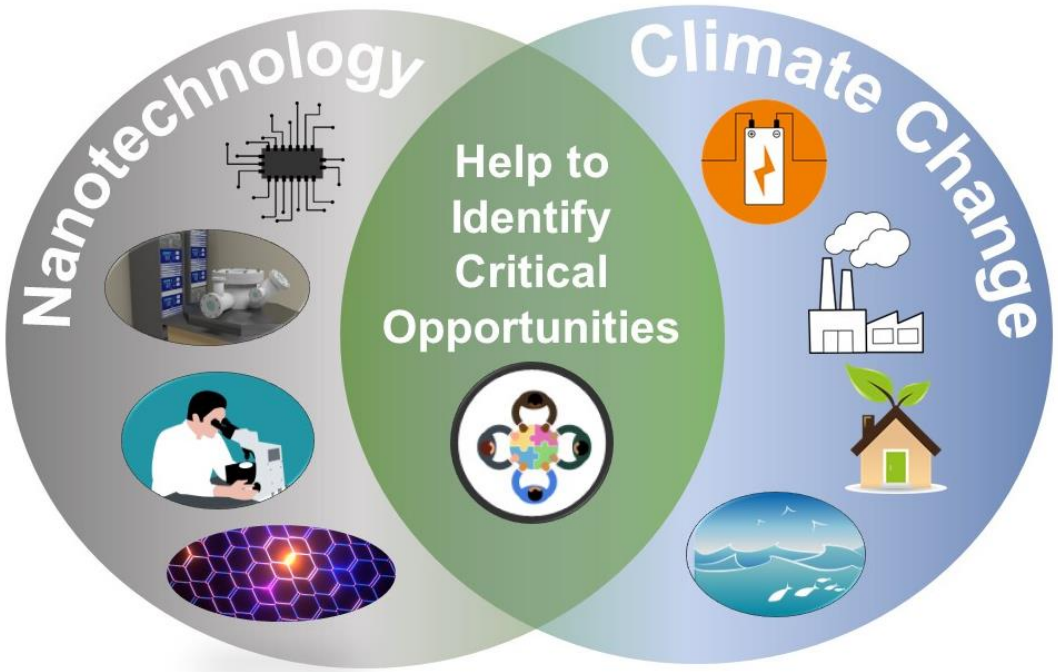
Networks Maturity

Call to Further Action – Next Steps

Email **rtnanonetwork@ncsu.edu** with interest in any of the following:

1. **Joining our expanding working group** to distill today's content into a publishable report
2. **Review the proposed report** and comment prior to publication
3. **Be notified** when this process completes



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Thank you to the Research Community working group and additional volunteers today!

Jacob Jones
RTNN
NC State

David Berube
RTNN
NC State

Maude Cuchiara
RTNN
NC State

Trevor Thornton
NCI-SW
Arizona State

Paul Westerhoff
NCI-SW
Arizona State

Elaine Hubal
NNCI Adv. Board
EPA

Ross Sozzani
RTNN
NC State

Kevin Walsh
KY Multiscale
U. of Louisville

Ana Sanchez Galiano
KY Multiscale
U. of Louisville

Anne Njathi
RTNN
NC State

Yuhwa Lo
SDNI
UC San Diego

Yves Theriault
SDNI
UC San Diego

Phillip Strader
RTNN
NC State

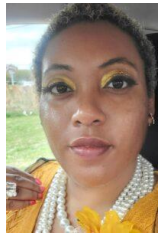
Nina Balke
NC State

Nichole Cates
Smart Material Solutions, Inc.

Mark Spitler
UNC-CH

James Custer
8 Rivers

Anna Lumpkin
NC State



Jasmine Covington
NC State

Alexandra Goodnight
NC State

Taylor Moot
RTI International

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