



WHAT'S HAPPENING IN THE CSN?



Image credit: nccu.edu

NSF Center for Sustainable Nanotechnology

WELCOME TO NEW CSN MEMBERS

Since the last newsletter, we are happy to welcome three new members of the CSN! Pictured L-R: **Abby Stitgen** (Haynes group), **Sanjoy Paul** (Cui group) and **Zita Sárközi** (Carlson group).



GOOD NEWS!



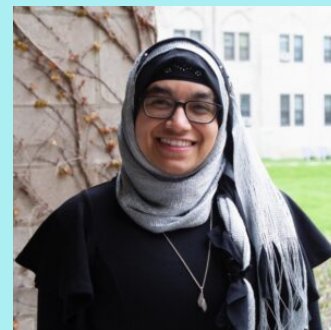
Leslie Sigmon (Fairbrother group) defended her thesis, entitled "Nanotechnology for a Sustainable Future: Investigating Photoluminescence in Carbon Dots and Agricultural Phosphorus Delivery" Friday, February 3. Congratulations, Dr. Sigmon!



Blake Hudson (Mason group) defended his thesis, entitled "Electronic Structure and Thermodynamics Modeling of Complex Metal Oxides in the Environment," on November 28, 2022. Congratulations, Dr. Hudson!



Milestones and Awards



Beza Tuga (Haynes group, left) and **Safia Jilani** (Haynes group, right) received 2023 CSN SPRING seed grants to support their research. Beza's project is in collaboration with Haynes group undergraduate **Andrea Ligocki** (middle left) and **Hye-In Kim** (Giraldo group, middle right) to investigate the uptake and translocation of dye-loaded polymers in plant leaves. Safia's project is entitled "Measuring the quantities and types of invisible work and how they impact advancement in science academia."



Congratulations to **Katie Kruszynski Earl** and **Alicia Tripp** (Hamers group) for winning the Farrington Daniels Ethical Leadership Award from the UW-Madison Department of Chemistry.

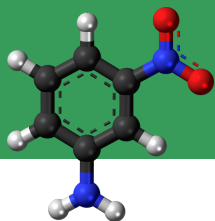
Wilanyi Alvarez-Reyes (Haynes group) passed her University of Minnesota Department of Chemistry written and oral candidacy exams. She's officially a PhD candidate!

Sara Mason accepted a nomination to serve on the Editorial Advisory Board (EAB) of *ACS Applied Nano Materials*.

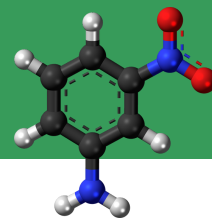


Congratulations to **Emma McKeel** (Klaper group) who started in January as the new SPRING co-chair of the Wellness, Equity, & Liberation (WEL) Committee. Belated congratulations also to **Qiang Cui** for starting as the new faculty co-chair in September. Finally, congratulations to **Caroline Anastasia** (Fairbrother group), who started her 9-month term as SPRING Board/Executive Committee Liaison in November.





CSN PUBLICATIONS



Find the most recent list of all center publications on the [CSN Google Scholar](#) page.

Xiaoxiao Yao, Riley E. Lewis and Christy L. Haynes (2022).

Synthesis Processes, Photoluminescence Mechanism, and the Toxicity of Amorphous or Polymeric Carbon Dots. *Accounts of Chemical Research*. 55 (23), 3312-3321. Read the online publication [here](#).

Deepti Sharan, Daniel Wolfson, Curtis Green, Paul Lemke, Alessandra Gavin, Robert Hamers, Z. Vivian Feng and Erin E. Carlson (2023).

Chronic exposure to complex metal oxide nanomaterials induces production of reactive oxygen species in bacteria. *Environmental Science: Nano*. Read the online publication [here](#).

Stephanie L. Mitchell, Jill S. McCourt, Diane J. Nessel-Tollefson, Gabrielle L. Kimball, Jasmine N. Mikesell, Emily J. Tollefson and Erin E. Carlson (2022).

What's in That Medicine: An Inquiry-Based Activity to Introduce Medicinally Active Natural Products and Metals. *Journal of Chemical Education*. Read the online publication [here](#).

Paige C. Kinsley, Curtis M. Green, Jaya Borgatta, Catherine E. Kruszynski Earl, Elizabeth D. Laudadio and Robert J. Hamers (2023).

Nanometer-Thick Carbon Coatings with Covalent Chemical Functionalization of Metal Oxide Nanoparticles for Environmental and Biological Applications. *ACS Applied Nano Materials*. Read the online publication [here](#).

Swapnil B. Ambade, Laura A. Kesner, Mohammed K. Abdel-Rahman, D. Howard Fairbrother and Zeev Rosenzweig (2023).

Interactions of Ti_3C_2 MXene with Aqueous Zwitterionic Biological Buffers: Implications for Applications in Biological Systems. *ACS Applied Nano Materials*. Read the online publication [here](#).

Bei Liu, Zixin Han, Qi Han, Yufei Shu, Li Li, Beizhao Chen, Zhongying Wang and Joel A. Pedersen (2022).

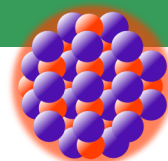
Redispersion Behavior of 2D MoS_2 Nanosheets: Unique Dependence on the Intervention Timing of Natural Organic Matter. *Environmental Science & Technology*. Read the online publication [here](#).

Milica Pavlicevic, Wael Abdelraheem, Nubia Zuverza-Mena, Tana O'Keefe, Salma Mukhtar, Gale Ridge, John Ranciato, Christy Haynes, Wade Elmer, Joseph Pignatello, Luca Pagano, Marina Caldara, Marta Marmioli, Elena Maestri, Nelson Marmioli and Jason C. White (2022).

Engineered Nanoparticles, Natural Nanoclay and Biochar, as Carriers of Plant-Growth Promoting Bacteria. *Nanomaterials*. 12 (24). Read the online publication [here](#).



Latest from Sustainable Nano



See [Sustainable-Nano.com](#) for all CSN blog posts & podcast episodes

Blog posts & podcast episodes published since the last newsletter:

- [Happy 75th Birthday to the Transistor](#) repost of "Are transistors getting too small? (How small is too small?) by Diamond Jones
- [What can frosting teach us about cell membranes?](#) by Laura Kesner
- [Happy National Periodic Table Day](#) by Miriam Krause
- [Equal Pay Day and Revisiting the Matilda Effect](#) repost of "What is the "Matilda Effect," and How Can We Improve Recognition of Women Scientists?" by Christy Haynes
- [Como la química click es como jugar con LEGOs](#) translation of post by Wiliam Biemers
- [Nanoestructuras de criaturas vistosas](#) translation of post by Jenny Orbeck
- [¿Qué tipo de nanopartícula eres tú? Toma nuestro examen para averiguar](#) translation of post by Chris Castillo & Claire Alford
- [Podcast episode 41: Stronger, Tougher, Lighter](#) interview with Prof. Suveen Mathaudhu

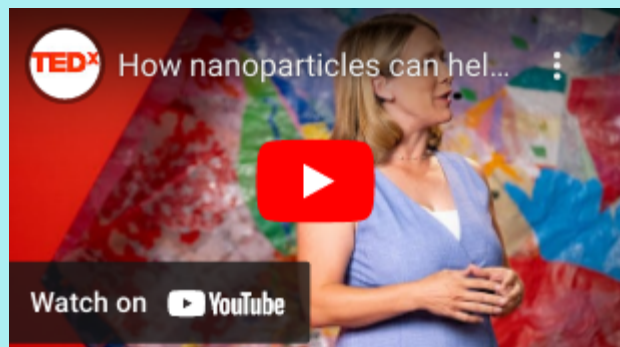


Meringue image by Jess Bailey.

Thanks to everyone who has helped with recent Nano Sostenible translations: Claire Alford, Christopher Castillo, Lissett Guadalupe Diaz, Juan Pablo Giraldo, Regina Gonzalez Lona, & Wilanyi Alvarez Reyes



CSN Media & Other Recognition



The video from **Christy Haynes'** September TEDx talk, "How nanoparticles can help solve the global food crisis," was posted on [YouTube here](#).

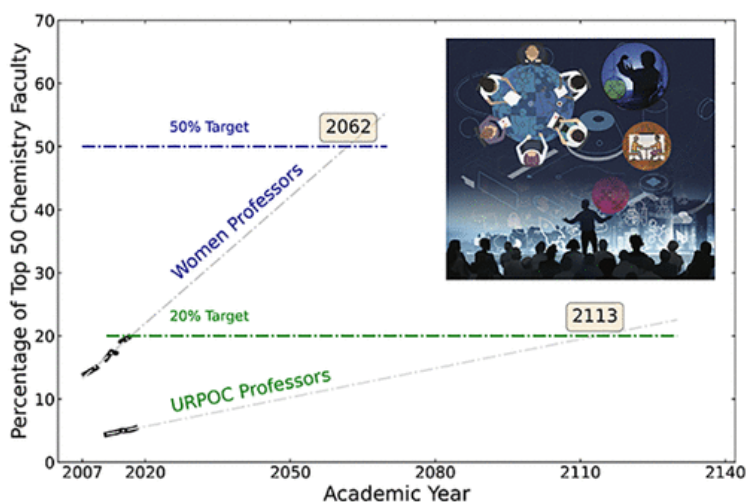


CSN Affiliate **Mike Curry** was featured in *Exeleon Magazine*. Read the feature article [here](#).



Bob Hamers was selected to chair the Provost search at UW-Madison. Read the news release [here](#).

DID YOU KNOW?



Mike Schwartz (back left), **Bob Hamers** (zoom top 2nd from right), and **Miriam Krause** (zoom below Bob) participated in the NSF Director's meeting last fall. The meeting was a chance to showcase CSN science and talk about important DEI issues.

Rigoberto Hernandez recently published an *Accounts of Chemical Research* article, "Discipline-Based Diversity Research in Chemistry." Read the online article [here](#)



CSN Talks & Presentations



CSN REV student **David Ajayi** (Haynes group, left) and SURE student **Taneeka Anand** (Murphy group, right) will be presenting on the work they did during the 2022 Summer at the National Conference of Undergraduate Research in April. David's presentation is "Investigating the Mechanism of nanoparticle toxicity by tracking H_2O_2 production with electrochemical techniques" and Taneeka's is "Conformational Effects of Gold Nanoparticle Exposure on Enzyme Creatine Phosphokinase."

Jason White attended the International Conference on Food and Nutritional Security at the National Agri-Food Biotechnology Institute (NABI) Mohali India, and the National Institute of Food Technology Entrepreneurship and Management (NIFTEM) in Sonapat India, where he gave lectures entitled "Nanotechnology and agriculture: Balancing applications and implications for global food security."



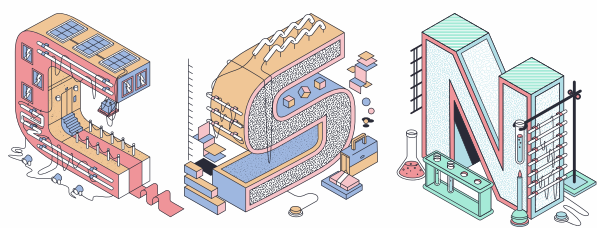
Sara Mason gave an invited talk to the Catalysis Group at PNNL in December, entitled "Theory, Modeling, and Collaboration to Study the Physical Chemistry of Environmental Interfaces." They also gave two talks at Wayne State University in the Department of Chemistry. The first was a Physical Chemistry seminar, highlighting the Mason Group's collaborative theory and model of metal release in CSN. The second was part of a graduate student organized professional development series, in which Mason spoke with participants about moving from academia into the National Lab system, and taking on leadership roles in both environments.



Jason White and **Christy Haynes** both presented at the Atlantic Basin Conference on Chemistry (ABCCChem2022) in December, in the symposium "Nanotechnology and Agriculture: A Path to Global Food Security"



The **Hernandez** group was awarded an ACCESSS Allocation for their Maximize project entitled "Nonequilibrium Molecular Dynamics Simulations, XI."



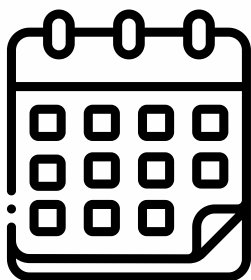
Lab Exchanges

Eric Ostovich (Klaper group, center) did a lab exchange at CAES with **Chaoyi Deng** (left), **Christian Dimkpa** (right), and **Jason White** during the last week in January. The work involved experiments involving soybean exposure to LCO.



SITE VISIT Information

- **Saturday, April 22:** Speakers and all faculty travel to Madison
- **Sunday, April 23:** Rehearsal for speakers; poster presenters and other attendees travel to Madison
- **Monday, April 24:** Site visit!
- **Tuesday, April 25:** Optional brunch for SPRINGs, everyone returns home



The CSN Site Visit will be April 24-25, 2023 in Madison, WI.

Memorial Union, image by [James Steakley](#)





Christy Haynes helping to present the Energy & U outreach show at the University of Minnesota



Jason White & colleagues at the National Agri-Food Biotechnology Institute (NABI) Mohali India



Eric Ostovich with **Chaoyi Deng** and **Jason White** during his lab exchange at CAES in January.



Jason White & **Christy Haynes** in Morocco for the Atlantic Basin Conference on Chemistry in December



Faculty gathering at the MSP airport for a site visit planning meeting on Jan 20



Hamers group goes bowling: L-R: Connor Protter, Alicia Tripp, Ben Bachman, and Katie Kruszynski Earl (shown synchronized bowling with Cesar Saucedo from Hamers group).





Presidential Event Research at HBCUs

Key Speakers:



Harold L. Martin, Sr., PhD
Chancellor
North Carolina A&T



Joseph S. Francisco, Ph.D.
President's Distinguished Professor
Penn State University



Quincy K Brown, Ph.D.
Director, Space STEM and Workforce Policy
Office of Vice President, United States



James L. Moore III, Ph.D.
Assistant Director
NSF Directorate for STEM Education



Venu (Kal) Kalavacharia, Ph.D.
Deputy Director
USDA Institute of Youth, Family and Community

Event Location: Indianapolis
Convention Center
Event Date: Sunday, March 26th
Event Time: 2 pm to 9 pm
Event Organizers:
Michael Curry (Tuskegee University)
Cynthia Burrows (University of Utah)

Join us in Indianapolis for
this CSN-sponsored event!

Panel discussions, HBCU presentations, and much more.



Don't forget to submit your abstract for the fall ACS in San Francisco, CA by April 4! A symposium in honor of Joel Pedersen is being hosted by the Environmental Chemistry Division (ENVR)

Opportunities!

Applications and abstract submission is now open for the 2023 Environmental Nanotechnology Gordon Research Seminar (GRS) (June 3-4, 2023), and the affiliated Gordon Research Conference (GRC) (June 4-9, 2023). Engage with peers and develop professional networks in an inclusive and supportive environment. [More information here.](#)



Gordon Research
Conferences
Frontiers of Science



CSN Alum Prof. **Clyde Daly, Jr.** has posted a postdoc opportunity to work with him at Haverford College. [More information here.](#)



HAVERFORD
COLLEGE



LOST IN CYBER-SPACE?

Links to frequently requested CSN documents and information sources.

Newsletter submissions:

Awards, highlights, lab exchanges, publications, FUN, etc. [link](#)

CSN Documents and Downloads

- Nanodatabase Login: [link](#)
- Nanodatabase Help page: [link](#)
- CSN calendar: [link](#)
- CSN Operations Guide: [link](#)
- CSN participants list (Names, group, and email addresses): [link](#)

CSN Reporting Forms

- Report lab exchange activities: [link](#)
- Report Outreach Activity: [link](#)
- Report Awards and Other Activities: [link](#)

CSN SuggestionOx (Completely Anonymous Feedback to Admin)

- Director (Bob): [link](#)
- Associate Director (Christy): [link](#)
- Managing Director (Mike): [link](#)
- E/O Director (Miriam): [link](#)
- SPRING Board liaison: [link](#)

ADMIN EMAILS

- Bob (rjhamers@wisc.edu)
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- Mike (mpschwartz@wisc.edu)



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