



WHAT'S HAPPENING IN THE CSN?



NSF Center for Sustainable Nanotechnology

WELCOME TO NEW CSN MEMBERS!

Since the last newsletter, we are happy to welcome four new members of the CSN! Pictured L-R: **Ben Bachman** (Hamers group postdoc), **Yang (Mike) Chen** (Mason group grad student), **Hye-In Kim** (Giraldo group postdoc), and **Safia Jilani** (Haynes group and our first official CSN Postdoctoral Fellow)



Welcome and farewell to our wonderful cohort of 2022 Summer Undergraduate Research Experience (SURE), Research Experience for Veterans (REV), and Undergraduate Research Scholar (URS) students! Most of our summer undergrads were able to attend an in-person orientation meeting at the University of Minnesota on June 15.

2022 SURE/REV/URS Participants

David Ajayi (Haynes group)
 Claire Alford (Giraldo group)
 Taneeka Anand (Murphy group)
 Abrienne Biondo (Mensch affiliate)
 Karemma Brown (Mason group)
 Keairra Brown (Mason group)
 Bailey Byrd (Green affiliate)
 Douglas Coffin (Deline affiliate)
 Kevin Rosa Dieppa (Santana affiliate)
 Juliana Davoglio Estradioto (Fairbrother group)
 Leilani Everett (Kabengi affiliate)
 Samantha Gonzalez (Daly affiliate)
 Salman Jaiteh (Haynes group)
 Sumayo Mahad (White group)
 Kelsie Neumann (Tollefson group)
 Kevin Rodriguez Otero (White group)
 Emely Peregrina (Wilkins-Yel group)
 Imani Phillips (Curry affiliate)
 Malena Rybacki (Hamers group)
 Adjoa Sakwa (Hamers group)
 Karl Schumacher (Wheeler affiliate)
 Yaren Peña Señeriz (Carlson group)
 Kha Trinh (Hernandez group)
 Alaceia Wright-Taylor (Green affiliate)



GOOD NEWS!



Stephanie Mitchell (Carlson group) successfully defended her thesis, entitled "Molecular-level characterization of resistance to engineered nanomaterials," on July 6, 2022! She has accepted a position with the [California Council on Science and Technology](#). Congratulations Dr. Mitchell!



Congratulations to **Laura Kesner** (Rosenzweig group), who successfully defended her thesis, entitled "Impact of surface properties on nanoparticle-induced phase change in phospholipid vesicles," on June 14, 2022! She has accepted a position as Clinical Assistant Professor of Chemistry at The Catholic University of America in Washington, DC.



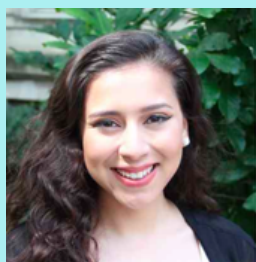
Congratulations to **Xiaoxiao Yao** (Haynes group), who successfully defended her thesis, entitled "Photoluminescence Mechanism and Agricultural Application of Carbon Dots" on July 28! She has accepted a position at Eat Just in San Francisco, CA.



Congratulations to **Curtis Green** (Hamers group), who successfully defended his thesis, entitled "Material and Medium Composition Influence on Nanomaterial Transformations in the Environment," on July 12! He has accepted a position with MilliporeSigma.



Paige Kinsley (Hamers group) successfully defended her thesis, entitled "Carbon Coatings as a Tool for Controlling Surface Chemistry of Materials," on May 31. She accepted a position as the Outreach Education Lead for the Argonne Leadership Computing Facility at Argonne National Laboratory. Congratulations Dr. Kinsley!



CSN alum **Becky Rodriguez** (Haynes group, PhD 2022) accepted a position as a research staff member in the operational evaluation division at the Institute for Defense Analysis.

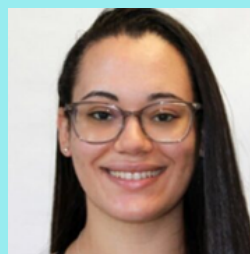


CSN alum **Emily Caudill** (Pedersen group, PhD 2019) is starting a new position as Assistant Professor of Instruction, Department of Chemistry at The University of Texas at Austin.



Sara Mason is starting a new position as Group Leader of the Theory & Computation Group for the Center for Functional Nanomaterials at Brookhaven National Laboratory.





Beza Tuga (Haynes group) won Best Oral Presentation award for her presentation at the Nanoscale Science and Engineering for Agriculture and Food Systems Gordon Research Seminar. She was also elected as the Chair of the 2024 GRS meeting!



Alessandra Gavin (Carlson group, right) and **Beza Tuga** (Haynes group, left) won honorable mentions for their presentations at the University of Minnesota Chemistry Department's [Graduate Student Research Symposium](#) featuring presentations from 3rd-year graduate students.

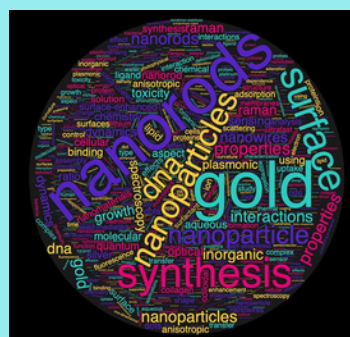


Erica Svendahl (Wheeler group SURE student) won an award for her poster "The Impact of Nanoparticle Surface Charge on the Algae *Raphidocelis subcapitata*" at the 15th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials ([ICEENN](#)) in Montreal, Quebec.

Cathy Murphy was awarded the 2022 Centenary Prize from the Royal Society of Chemistry, "for pioneering work on the growth, size and shape control, biological applications and environmental implications of gold nanocrystals, and for excellence in communication." [Read an interview with Cathy here.](#)

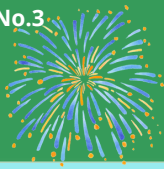


Congratulations to CSN Wellness, Equity, & Liberation Consultant **Dr. Della Mosley** for winning the Early Career Award for Distinguished Contributions to Psychology in the Public Interest. She presented an invited address at APA 2022, entitled "Toward Liberation and Black Wellness: A Biomythography."

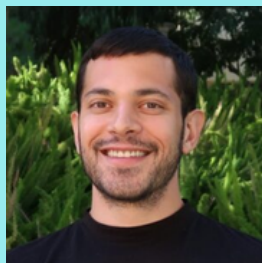


Randy Goldsmith was selected as a "Polymath" by the [Schmidt Polymath program](#) to "pursue the development of new fabrication strategies to create novel devices capable of dramatically altering the properties of light."





MILESTONES & AWARDS



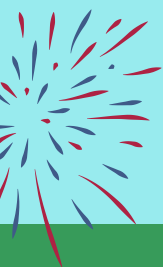
Chris Castillo (Giraldo group), has passed his qualifying exam and is now a PhD Candidate.



Jason White was elected as the Co-Chair for the 2026 Nanoscale Science and Engineering for Agriculture and Food Systems Gordon Research Conference (GRC)



Katie Kruszynski Earl got married on May 7th! She and her new husband Nick celebrated with a small gathering of family and friends.



CSN Publications

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

Morgan E. Howe, Melony M. Kim and Samuel Pazieni (2022)

Graduate Student Women's Perceptions of Faculty Careers: The Critical Role of Departmental Values and Support in Career Choice. JACS Au. 2 (6), 1443-1456. Read the online version [here](#).

Kyoungtea Kim, Su-Ji Jeon, Peiguang Hu, Caroline Anastasia, William F. Beimers, Juan Pablo Giraldo and Joel A. Pedersen (2022)

Sulfolipid density dictates the extent of carbon nanodot interaction with chloroplast membranes. Environmental Science: Nano. Read the online version [here](#).

Xiaoxiao Yao, Yinhan Wang, Fangjia Li, Joseph J. Dalluge, Galya Orr, Rigoberto Hernandez, Qiang Cui and Christy Haynes (2022)

Unconventional aliphatic fluorophores discovered as the luminescence origin in citric acid-urea carbon dots. Nanoscale. 14 (26), 9516-9525. Read the online version [here](#).

Zeke A. Piskulich and Qiang Cui (2022)

Machine Learning-Assisted Phase Transition Temperatures from Generalized Replica Exchange Simulations of Dry Martini Lipid Bilayers. The Journal of Physical Chemistry Letters. 6481-6486. Read the online version [here](#).

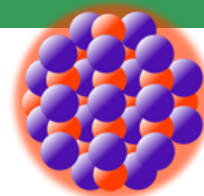
Hyunho Kang, Jihyeon Lee, Tana O'Keefe, Beza Tuga, Jr Christopher J. Hogan and Christy Haynes (2022)

Effect of (3-Aminopropyl)triethoxysilane on dissolution of silica nanoparticles synthesized via reverse micro emulsion. Nanoscale. Read the online version [here](#).





Latest from Sustainable Nano



See Sustainable-Nano.com for all CSN blog posts & podcast episodes



SEM image of pollen from
Huang et al. 2017

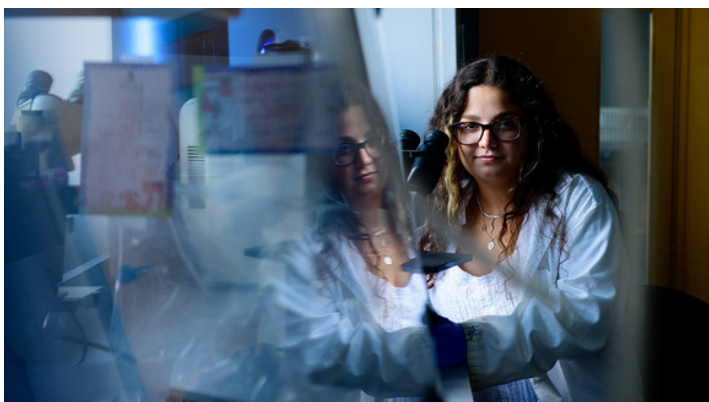
Blog posts published since the last newsletter:

- [Nano in the Environment: Allergens](#) by Curtis Green (Hamers group)
- [Why I Think Grad Students Should Give Campus Mental Health Services A Try](#) by Emma McKeel (Klaper group)
- [Accidental nanoparticles in the environment: the nanoplastic pollution problem](#) by Zeke Piskulich (Cui group)

Don't forget about Twitter!
@SustainableNano



CSN Media & Other Recognition



Abrienne Biondo '24 works with cells that are used for exposure experiment. Image from the Lafayette News, Aug 10, 2022.

CSN Alum **Arielle Mensch's** (PhD 2017) group was highlighted in a [Lafayette News article](#) entitled "Studying nanoplastics and antibiotics in aqueous environments," which also featured CSN SURE student **Abrienne Biondo**.

CSN Affiliate **Mike Curry** was featured in *Top 100 Magazine's* list of Innovators and Entrepreneurs. This [Tuskegee University press release](#) provides more about Mike's story.



CSN Media & Other Recognition

A CSN study recently published in *Nature Nanotechnology*, "Cross-species transcriptomic signatures identify mechanisms related to species sensitivity and common responses to nanomaterials" ([Curtis et al, 2022](#)), was highlighted in a [University of Wisconsin-Milwaukee press release](#).

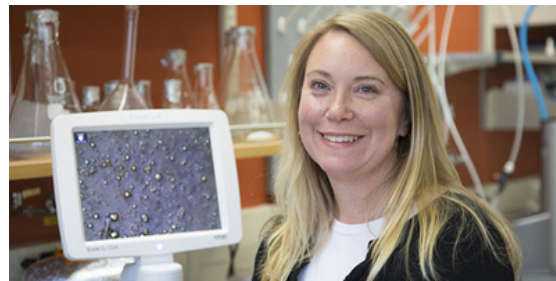
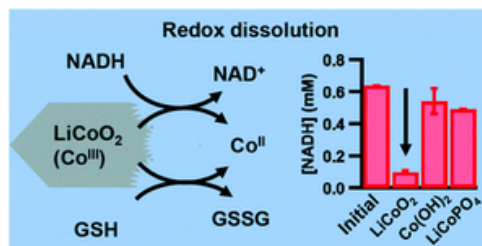


Image credit: UW-Milwaukee



The editors of *Environmental Science: Nano* selected a CSN publication, "Reciprocal redox interactions of lithium cobalt oxide nanoparticles with NADH and GSH: toward a mechanistic understanding of nanoparticle-biological interactions" by Henke et al, 2021, as one of the [best papers published in RSC Environmental journals in 2021!](#)

Dr. Della was recently featured on the Therapy for Black Girls podcast interview with Dr. Joy Harden Bradford, [Session 272: Navigating Academia as a Black Woman](#)



Juan Pablo Giraldo was recently featured in a National Nanotechnology Initiative's NanoTube channel on YouTube for a Nano Matters podcast episode entitled "[Monitoring Plant Health with Optical Nanosensors: A Conversation with Juan Pablo Giraldo.](#)"



Rebecca Klaper was recently featured on UW-Milwaukee's Curious Campus podcast, in an episode called "[Nanomaterials, freshwater sciences and the Great Lakes](#)".

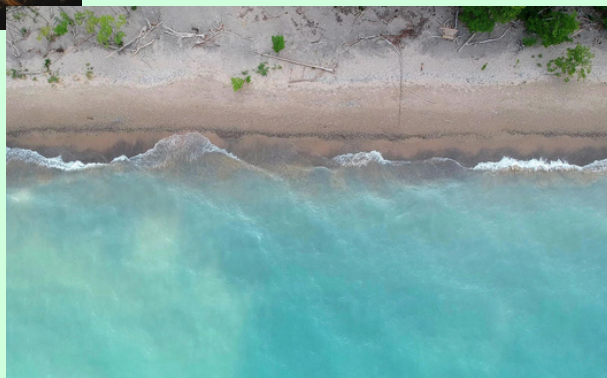
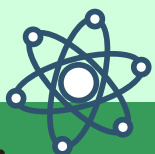
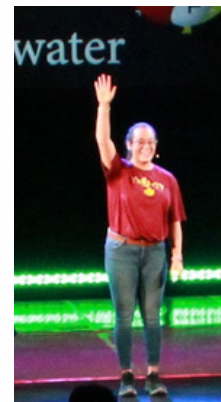


Image credit: Seth Amland (UW-Milwaukee)



CSN Communication

The **Haynes** group had an active summer for communication and outreach! **Tana O'Keefe, Riley Lewis, Beza Tuga, and Eleni Spanolios** presented CSN work at the Industrial Partnership for Research in Interfacial and Materials Engineering (IPRIME) at the University of Minnesota. **Christy** (left) participated in "Energy and U" for ~1600 3rd-5th grade students, teaching them about the first law of thermodynamics with dancing and combustion reactions. **Wilanyi Alvarez Reyes** (right) presented the first-ever Spanish language version of the show for another 700 elementary students.

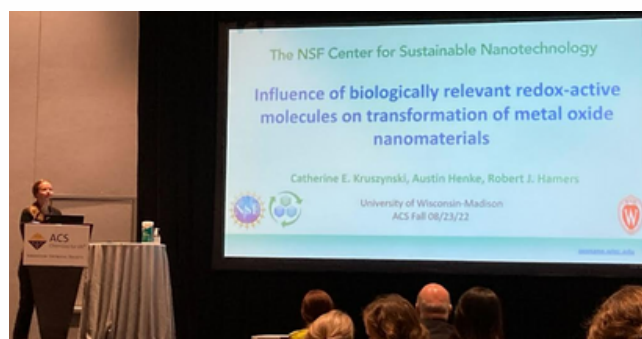


On July 26th, the group hosted ~20 high school students participating in the American Indian Student Experience camp to solve a chemistry-focus "whodunnit" using a range of analytical chemistry techniques (right). Then, on August 4th, the Haynes group and friends hosted a K-8 "Chemistry Day" at Keystone Community Center, complete with hands-on activities, explosive demonstrations, and liquid nitrogen ice cream (below).



CSN members attended the 15th ICEENN at the University of Montreal and presented talks and posters: **Jason White** presented "Tuning agrochemical chemistry at the nanoscale to enhance stress tolerance, crop nutrition and yield." Also in attendance were **Eric Ostovich** (Klaper group, "Assessing Nano-Induced Sub-Cellular Perturbations of Lithiated Cobalt Oxide Nanomaterials to the Green Algae *Raphidocelis subcapitata*,"), **Emma McKeel** (Klaper group, "The Impact of Nanoparticle Surface Charge on the Algae *Raphidocelis subcapitata*"), CSN affiliate **Korin Wheeler** ("Development of a fluorescence anisotropy assay to monitor biomolecular corona formation"), and **Erica Svendahl** (Wheeler group, "Insights into protein corona formation across organisms and environmentally relevant conditions").

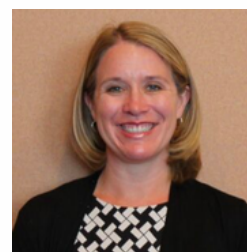
Katie Kruszynski Earl presented her CSN research at ACS in Chicago! This was her first time giving a talk at a big conference and she thinks it went pretty well! [A full list of CSN presentations at ACS is here.](#)



CSN Communication



Andrew Northwick (Carlson Lab) and **Eleni Spanolios** (Haynes Lab) presented flash talks about their CSN work at the Chemical Biology Interface Training Grant Symposium at the University of Minnesota.



Christy Haynes gave a talk about CSN spin-off work on nanoparticle-enabled PFAS remediation at the National Resource Research Institute in Duluth, MN.



UIUC Chemistry organized a departmental faculty retreat on August 15h hosted by their department chair, **Cathy Murphy**. They contracted with **Rigoberto Hernandez**, who was assisted by Dr. Vartika Saman, to run a 6-hour workshop on Managing Diversity Equity & Inclusion. Over 30 faculty members participated in this highly interactive workshop. Yet another example of how DEIB is not just infused throughout our center, but it's also contagious!

Lisset Diaz (Klaper group) has a new opportunity to volunteer as a Milwaukee Riverkeeper Ambassador, which involves connecting with the community of Milwaukee to protect, restore, and advocate for local watersheds.

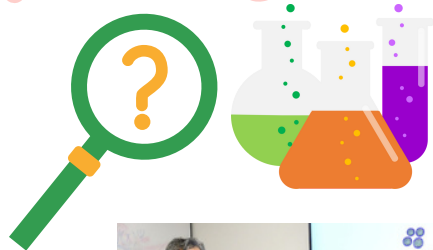


Jason White has given multiple presentations since our last newsletter:

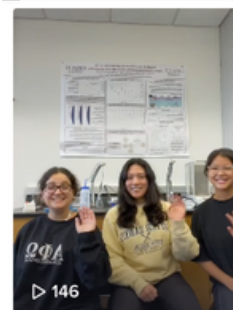
- "Nanotechnology-enabled agriculture: A path to global food security?" for the International Institute for Environmental Studies, which is based out of Trent University (Ontario, Canada)
- "Biocompatible nanofertilizers for targeted delivery and programmed release of essential mineral ions in crops" for the Novo Nordisk Foundation Challenge program at the University of Copenhagen
- "Nanotechnology-enabled agriculture: Crop nutrition and food security?" for the International Network for Researching, Advancing, and Assessing Materials for Environmental Sustainability (INFRAMES)
- "Tuning Agrochemical Chemistry at the Nanoscale to Enhance Stress Tolerance, Crop Nutrition, and Yield" for the University of Vienna, Centre for Microbiology and Environmental Systems Science, EDGE Environmental Geosciences Seminar Series
- "Nanotechnology-enabled Agriculture: A Path to Global Food Security?" at the 2022 Global Summit: Nanotechnology for a Healthier and Sustainable Future, University of Waterloo (Ontario, Canada)



DID YOU KNOW?



Videos



The lab of **Arielle Mensch** (CSN PhD 2017) is on TikTok! Check it out at [tiktok.com/@atthebenchwithmensch](https://www.tiktok.com/@atthebenchwithmensch)



Rigoberto Hernandez is a candidate for President of the American Chemical Society. The election will take place from September 26th to October 20th. Whether or not Rigoberto wins, we've been happy to see him engage the chemistry community on the importance of promoting chemistry to solve real-world problems and providing access (and belonging!) for everyone in our community. [Details of his platform are available here.](#)



Rigoberto Hernandez also chaired and organized the [National Diversity Equity Workshop](#) held August 1-2 in Alexandria, VA, in collaboration with [OXIDE](#) Associate Director Prof. Dontarie Stallings and Research Program Manager Dr. Vartika Saman. Nearly 40 department chairs and heads participated and engaged in analyzing barriers and solutions to advancing diversity equity in chemistry.

Opportunities!

The University of Maryland, Baltimore County is having a virtual open house for Chemistry and Biochemistry graduate programs! October 7 from 3:00-5:45 pm Eastern. [Complete this form](#) to let them know you plan to attend.



CSN alum **Clyde Daly** is looking for a postdoc! Daly group has an open position for a postdoctoral scholar or research technician! This person will help with atomistic force field development and MD simulations of CO₂ in polymeric ionic liquids.



If you're looking for a postdoc/research tech position Dr. Daly would love to chat more about this opportunity!
Email: cdaly2@haverford.edu



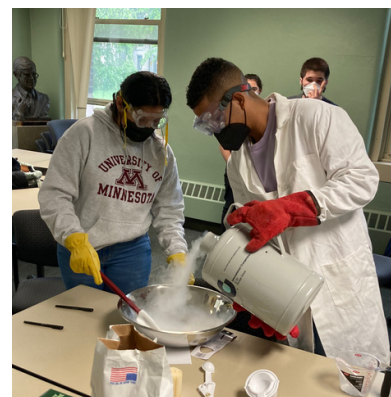
Fun!



CSN at the GRC!



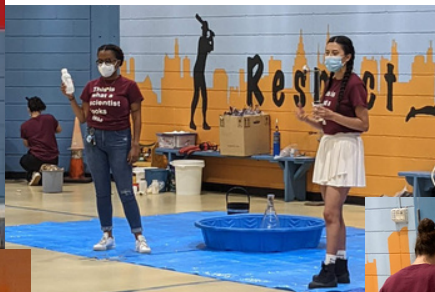
CSN postdoc Safia Jilani (Haynes group) tweeted this photo when she officially accepted her CSN position



As part of our June 15 orientation meeting, SURE/REV students tested several different recipes for dairy-free liquid nitrogen ice cream (you can see one example on page 1)



More from the Haynes group outreach at Keystone Community Center



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](#)
- New CSN Presentations: [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

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