

What's happening in the CSN?

January 26, 2018

Volume 3, Issue 4

Sustainable Nano Reader Question

Here's a recent submission from our "Ask a Scientist!" button on the blog. Please contact Miriam if you have any thoughts on how to respond!

I have an idea to make the natural dye (the pigment powder from natural source such as turmeric powder give yellow or indigo give blue) for fabric into nano size. I hope fabric fiber can absorb the nano sized dye better than the normal dye and might not need a mordant in the dyeing process (the substance help the fiber to absorb the dye). My questions: 1. Is it worthwhile to make the nano dye or the result of dyeing is not much different to the normal size of general dye ? 2. What equipment / machine can I make the dye in nano size?

Celebrations

Welcome to New CSN Members

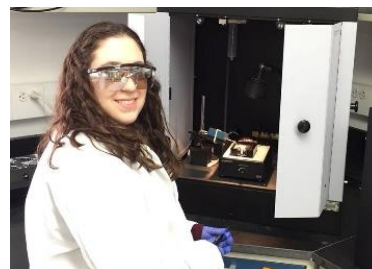
Xiaoxiao Yao joined the **Haynes group** at the University of Minnesota in November 2017. She completed her bachelor's degree at Sun Yat-sen University in Guangzhou and the Hong Kong Polytechnic University. Now in the Haynes group, she will do research on carbon dots.



The CSN welcomes **Prof. Karen Goldberg** to our External Advisory Board! Prof. Goldberg was the Director for the Center for Enabling New Technologies Through Catalysis (CENTC), which was the very first Center for Chemical Innovation (they just completed Phase II after a super successful 10 year run). She recently joined the Department of Chemistry at the University of Pennsylvania, where she is also the first Director of the new Vagelos Institute of Energy Science & Technology. Check out [Prof. Goldberg's Wikipedia page](#) to learn more about her contributions to catalysis and organometallic chemistry.

Good News!

Congratulations to **Isabel Foreman-Ortiz (Pedersen group)** for being selected as the newest Student Seed Grant recipient! Her winning proposal was entitled "Giant Unilamellar Vesicles (GUVs) as a Microscopy Model for the Nano-bio Interface."



Milestones and Awards

Emily Caudill (Pedersen group) was selected as a Wisconsin Institute for Science Education and Community Engagement ([WISCIENCE](#)) Teaching Fellow for 2018. Congratulations, Emily!



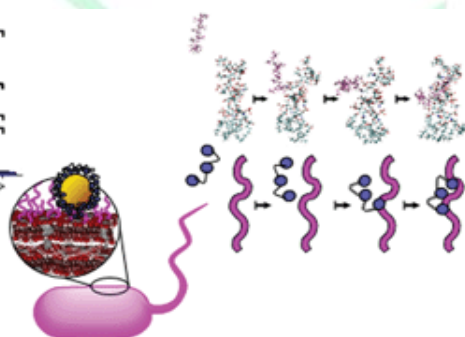
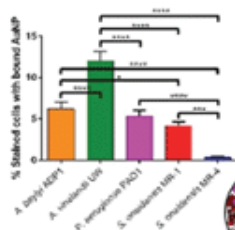
Congratulations to **Demetrius Finley (Curry group)** for being selected to receive a travel award for the 2018 Emerging Researchers National Conference in STEM in Washington, DC (February 22-24). The title of Demetrius' talk is "Investigation of Nanocellulose Beads as an Agricultural "NanoCAB" Nutrient (i.e, Cu, Zi, or Mg) Delivery System."

Congratulations to **Peter Clement (Haynes group)** on passing his PhD candidacy exam on January 18, 2018.



CSN undergraduate researcher **Katie Landy (Haynes group)** won an I. M. Kolthoff award from the ACS Division of Analytical Chemistry. Katie will be recognized for her award at the Spring 2018 National ACS meeting in New Orleans.

CSN Productivity



Joseph T. Buchman, Ali Rahnamoun, Kaitlin M. Landy, Xi Zhang, Ariane M. Vartanian, Lisa M. Jacob, Catherine Murphy, Rigoberto Hernandez and Christy Haynes. Using an environmentally-relevant panel of Gram-negative bacteria to assess the toxicity of polyallylamine hydrochloride-wrapped gold nanoparticles. *Environmental Science: Nano*. Check out the online article [here](#).

CSN Talks and Presentations

Christy Haynes performed the "Energy and U" demonstration show for 1200 3rd-6th graders at the University of Minnesota; this outreach was featured on the local news in the Twin Cities. Christy also gave a talk on CSN work at the University of Minnesota, Duluth on January 19, 2018.



Miriam Krause presented a webinar on January 25 for the National Nanotechnology Initiative's Teaching Nano & Emerging Technologies series, entitled "Connecting Classrooms and Researchers with the Sustainable Nano Blog."

Student Board/Executive Committee Liaison Elections

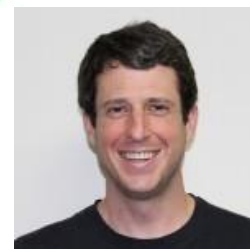
It's time to elect our next Student Board/Executive Committee Liaison! Thank you to **Becky Curtis (Klaper group)**, our outgoing liaison. Three people have accepted nominations to run for the position for the upcoming term, which will run from February through October of 2018: **Ricky Brown (Rosenzweig group)**, **Diamond Jones (Mason group)**, and **Stephanie Mitchell (Carlson group)**. Thank you all very much for volunteering to take on this role!

All trainees who are currently actively supported by the CSN are invited to vote and should soon receive an email from Condorcet Internet Voting regarding a "CIVS poll." This email will contain a unique link for casting a ballot. Voting will close at 8pm Central on Wednesday, January 31. If you have any questions, or if you don't receive a ballot email, contact Miriam.

Here is an introduction to our nominees (in alphabetical order):

Ricky Brown

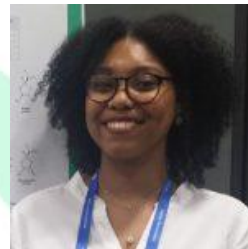
Hi everyone, I'm a fifth year grad student in the Rosenzweig lab at the University of Maryland Baltimore County. Before starting grad school, I finished my bachelor's degree from UMBC with a biochemistry major. Between my bachelors and PhD program, I broadened my horizons by working in the mental health field at a treatment center for alcoholism and addiction. I apply the lessons I learned from there to all areas of my life. It opened my eyes and heart to people from very different backgrounds as well as gave me the skills to deal with difficult personalities (not that I need those skills for interacting with PIs). Currently, I am working on the synthesis of InP-based quantum dots and their application towards bioimaging. I've been lucky enough to have participated in the CSN since the end of Phase 1, when I was a brand new graduate student. Along the way, I've participated in lab exchanges where I traveled to the Hamers group in Madison, WI and last winter, I spent two weeks working in the Murphy group in Champaign-Urbana, IL. It's been a unique



opportunity to see the center grow and change along the way. I hope that I can share this perspective with other CSN members, while I also further develop interpersonal skills as the Student Board Liaison. The biggest strength of the center lies in our ability to connect, professionally and personally. Any time we can remove barriers to communication, whether geographical or personal, our science can only grow.

Diamond Jones

Greetings fellow CSN members! My name is Diamond Jones and I am a second year graduate student in Sara E. Mason's research group. I have been in the CSN for almost a year and a half. I am from Cleveland, Ohio and earned my B.A. in chemistry from Eastern Michigan University in Ypsilanti, Michigan. There I did computational work on organic compounds that are used in many pharmaceuticals with Dr. Maria C. Milletti as my mentor. Now that I am in the center, I am excited to be doing computational chemistry on materials that impact the environment alongside amazing scientists from all over the country. The great work that we have, and will, accomplish in the CSN is largely due to immense and effective communication between members. Being on the student board and moderating our meetings has shown me, first hand, how important this communication is, and has allowed me to feel more connected to CSN members. I am able to communicate the concerns of others and would be honored to serve as the student board-executive committee liaison.



Stephanie Mitchell

Greetings fellow trainees! My name is Stephanie and I am a 3rd year graduate student in Erin Carlson's lab at the University of Minnesota. I previously attended Butler University in Indianapolis where I studied chemistry, math and biology. My current research applies a variety of analytical techniques to understand how bacteria respond to nanoparticles. I've been a CSN trainee since January 2016 and because our lab was new to the CSN, I have been the student board representative since our joining, which has helped me feel connected to the CSN and understand the voice and role of the trainees. During my time on the student board, I've enjoyed participating on the Community Building Committee (formally the Onboarding Committee), planning fun events for the students and meeting our new trainees! I hope I can help to continue strengthen the role of the students and the effectiveness of the student board as the CSN grows and evolves. I will do my best to continue the strong tradition of transparent communication and be a platform for trainees to share their ideas. Outside of the lab, I enjoy reading, exploring on my bicycle, and cooking/eating (primarily eating).



From the Diversity Committee

There are a number of diversity-related activities that we would like to call to the attention of everyone in the center. In early January **Bob Hamers, Miriam Krause, and Mike Schwartz** participated in a 2-day NSF-sponsored workshop, working with other center directors, E/O directors, and managing directors to explore ways of developing and implementing new diversity initiatives through an NSF program called “[INCLUDES](#)”. While nothing is yet definitive, our interactions at the workshop are leading us to explore new avenues of how to leverage the Center’s scientific research and informal science education activities/professional development programs by partnering with other efforts.

Also please note that the CSN has approved a new effort to fund both an undergraduate student and their faculty mentor for summer research, as a way of engaging with faculty who are either under-represented groups or who are at minority-serving institutions. If you know faculty from underrepresented institutions or who are from underrepresented groups and who you think might be interested in engaging with the CSN, please bring this to the attention of Bob, Christy, Miriam, or Mike. Bob is also planning to visit several research universities in Puerto Rico who have a strong track record of sending excellent REU students to CSN participating institutions.



Teams of INCLUDES attendees were asked to represent the future of diversity in science using a box of colorful stuff. Bob’s team outlined a bold plan of glitter, balloons, and feathers that will definitely require a full explanation at the All-hands meeting.

Latest from Sustainable Nano

See sustainable-nano.com for all the CSN blogs and podcasts

CSN Blog posts and podcast episodes since the last newsletter

- Dec 14: [The Sustainable Nano Guide to Holiday Gift Lists](#) by Miriam Krause
- Dec 20: Podcast Ep 22. [On Thin Films and Nobel Prizes: Margaret Schott Profiles Katharine Burr Blodgett](#) interview by Liz Laudadio
- Dec 28: [Bringing the Year in with a Bang!](#) by Natalie Hudson-Smith
- Jan 12: [¿Alguna vez has escuchado cantar a un limón? Música y química](#) (Nano Sostenible translation of “Have You Ever Heard a Lemon Sing? Music and Chemistry” by Alicia McGeachy)
- Jan 17: [¿En qué consiste el “efecto Matilda” y cómo podemos contribuir a que se reconozca más el trabajo de las científicas?](#) (Nano Sostenible translation of “What is the “Matilda Effect,” and How Can We Improve Recognition of Women Scientists?” by Christy Haynes)

Fun!



The Hamers group celebrated the holidays in style, with themed sweatshirts!

Back row (L-R): **Zack Jones**, Jason Bandy, Ben Bachman, Austin Henke, **Jaya Borgatta**, **Curtis Green**, **Kelly Zhang**, Shuo Li, Sarah Guillot, Melinda Shearer, and Claudia Yan.

Front row (L-R): Katherine Delamater, **Liz Laudadio**, Kayla Lloyd, **Paige Kinsley**, **Bob Hamers**.

Opportunities

Participate in the Chicago Museum of Science & Industry's Black Creativity Career Showcase!

Saturday, February 24, 2018 10 a.m. to 2 p.m.

MSI is inviting African American scientists, engineers and artists to talk with the public at a hands-on innovation station during the Black Creativity Career Showcase. This is an opportunity to inspire Museum guests about creativity and innovation! Innovation stations invite youth and families to discover:

- What's innovative about your work or field
- Your personal journey into a science, engineering or art-based career
- The connection your work has to the real world and everyday life

Alicia McGeachy (Geiger group) is interested in organizing a CSN presence at this event. For more information see the [website](#) and contact Alicia (aliciamcgeachy2013@u.northwestern.edu) if you want to get involved!

U.S. Air Force Research Laboratory (AFRL) - 2018 AFRL Repperger Research Internship Program

Applications must be submitted by January 21, 2018 – Apply [here](#).

This civilian research opportunity is a 10-week summer program intended for MS/PhD candidates pursuing degrees in STEM. Each year the laboratory will appointment a couple exceptional undergraduate students into the program. ***To qualify, applicants must be pursuing their Master or PhD (some outstanding bachelor students will be considered as well), have a minimal 3.2 GPA in a STEM discipline and be a U.S. citizen.*** Selected participants will receive a **\$12,000 stipend** for the internship which runs from June 4 - August 10, 2018.

Please remember we have a lot more opportunities available with the Department of Defense! Please explore the [U.S. Army Research Lab Summer Journeyman Fellowship](#) (BS-PhD candidates) and additional summer and postgraduate opportunities (Bachelor–Postdoctoral opportunities) that are posted to the [ORAU Maryland website](#) (currently over 200 open research opportunities), or email Recruiter@orau.org.

STEM for All Video Showcase: “Transforming the STEM Education Landscape”

[Registration](#) to present will end on February 15th (earlier if they receives more than 250 registrations.)

Do you have an NSF or other federally funded project aimed at improving STEM or CS learning and teaching in formal or informal environments? If so, you are invited to be a presenter in this year’s [STEM for All Video Showcase](#)! **Don’t miss out!** The interactive, online Video Showcase will take place May 14th – 21st 2018. During this weeklong event, approximately 200 innovative STEM Educational projects, funded by the National Science Foundation (NSF) and other Federal agencies, will be featured. Presenters will share their 3-minute video and discuss it with researchers, practitioners, policy makers, and the public at large.

Videos should address at least one of the following:

- Partnerships that advance education.
- Broadening participation & access to high quality STEM experiences.
- Innovative practices transforming education.
- Research informing STEM learning and teaching.

[Last year’s STEM for All Video Showcase](#) hosted 171 videos from 36 states. All videos and discussions are still accessible. Over 51,000 unique visitors from over 189 countries have visited the showcase, viewed the videos and the related discussions. Presenters found this to be a worthwhile investment of their time and reported that they learned about related work in the field, made new contacts and collaborations, received valuable feedback, and reached audiences interested in using their resources. *Read this attached letter for full details:* [ShowcaseLetter_2018.pdf](#)

Have questions? Email contact@stemforall.videohall.com

Looking Ahead

CSN Professional Development Activity: “Non-Traditional Chemistry Careers Panel”

Thursday, January 31 at 2:30 CST. Curious about career options in chemistry other than academia and industrial bench science? We have gathered a panel of four chemists with a range of backgrounds and occupations to talk with us about their career paths:

- Christin Morrow, Organizational Project Manager -- Alcon R&D Intern Program
- Chris Parsons, Director of Education, Outreach, and Diversity -- Center for Chemical Innovation
- Quinn Spadola, Staff Scientist, Education & Outreach Coordinator (AAAS Fellow alum) -- National Nanotechnology Coordination Office
- Kazuya Toyama, Patent Agent -- Suiter Swantz Intellectual Property

Engaging Scientists and Engineers in Policy (ESEP) webinar: “Engaging Rising Scientists in Policy.”

Wednesday, January 31 from 3:00 to 4:00 pm ET. In this talk, Leah Pagnozzi from Cornell University and Richard Prince from the University of California, Irvine will discuss their experiences in involving rising scientists in science policy and advocacy. Scientists have a critical role to play in society outside of the lab, and they can begin at any time including during their graduate education. At Cornell, Leah started a program, Take a Politician to Work Day, to get politicians interested in research and to teach scientists how to communicate with this unfamiliar audience. On the other side of the continent, Richard took the scientists to visit the politicians. He has led several advocacy trips to Sacramento and Washington D.C. so that other students can get real world experience in science advocacy, and he started a program that connects students with local politicians as policy advisors in the community. **Register for the webinar [here](#).** Not able to join? Check out past ESEP webinars on [YouTube](#)!

Upcoming Gordon Conferences

GRC & GRS for Nano-Enabled Technologies to Improve Efficiency, Quality, and Health in Food and Agriculture.

June 3-8, 2018 at Mount Holyoke College, South Hadley, MA.

Applications are due by May 6, 2018. Website [here](#).

Environmental Nanotechnology GRC and GRS (The CSN’s own Rebecca Klaper is Chair!)

June 2-7, 2019 at Jordan Hotel at Sunday River, Newry, ME.

GRS: June 1-2 in same location. More information coming soon!

Supporting the CSN

Are you or your family members interested in supporting the CSN by making a donation? Donations are tax-free and all aspects are professionally managed by the University of Wisconsin Foundation, UW-Madison’s official philanthropic foundation. Gifts made to the UW Foundation can be used to support many (but not all) of the CSN activities that we can’t fund using federal grants. If you or someone you know might be interested in making a donation, please direct them to the [UW Foundation’s donation site](#) and ask them to donate specifically to “**Fund #112220006, Center for Sustainable Nanotechnology**”. Better yet, make it a recurring gift!

Lost in Cyber-Space?

HOME ABOUT US OUR TEAM NEWS EDUCATION & OUTREACH WORKING WITH THE CSN PUBLICATIONS RESEARCH MEMBERS

Links to frequently requested CSN documents and information sources

For these documents and more, visit the [Center Resources page](#) on the [CSN website](#) (requires login though Members page, contact [Miriam](#) if you need help).

Newsletter submissions (awards, highlights, lab exchanges, publications, FUN, etc.): [link](#)

CSN Documents and Downloads

- CSN calendar (RFA, All-hands, professional development): [link](#)
- CSN Operations Guide 2.3: [link](#)
- CSN participants list (Names, group, and email addresses): [link](#)
- CSN Projects Documents (Spring 2017 version): [CSN Projects](#) - [% Effort sheet](#)

CSN Reporting Forms

- Report lab exchange activities: [link](#)
- New CSN Publications: [link](#)
- New CSN Presentations: [link](#)
- Report Outreach Activity: [link](#)
- CSN Safety Verification form: [link](#)
- Nanoparticle availability (Listing of NPs available center-wide): [link](#)

CSN Feedback Forms

- Requests for the Executive Committee (meeting agenda): [link](#)
- SuggestionOx (completely anonymous comments/suggestions to CSN staff):
Director (Bob): [link](#)
Associate Director (Christy): [link](#)
Managing Director (Mike): [link](#)
E/O Director (Miriam): [link](#)

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

