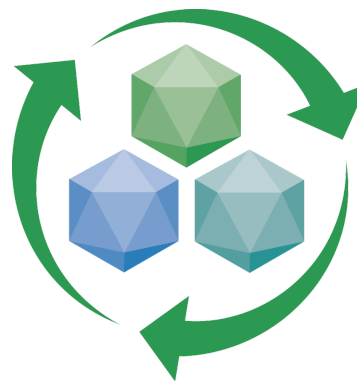


What's happening in the CSN?

October 4, 2017

Volume 3, Issue 1



Celebrations

Welcome to New CSN Members

We have a number of new members to welcome! Since the last newsletter, graduate students **Manal Alwohaibi** (Curry group), **HanByul Chang** (Geiger group), **Hyunho Kang** (Haynes group), and **Laura Satterfield** (Rosenzweig group) have formally joined the Center, along with postdocs **Chenyu Wang** (Hamers group) and **Chuanxin Ma** (White group), and technician **Nicklaus Neureuther** (Klaper group). We also have two new undergraduate assistants, Zach Kremer (Madison) and Graham Andrews (Minnesota). Welcome all!



Manal Alwohaibi



HanByul Chang



Hyunho Kang



Laura Satterfield



Chenyu Wang



Chuanxin Ma



Nicklaus Neureuther

Even though they've been participating in Center collaborations and activities for several months, the the Connecticut Agricultural Experiment Station (CAES) and PIs **Jason White** and **Wade Elmer** are officially part of the CSN (as of the beginning of Year 3 on September 1)! The CAES put out a [press release](#) on September 12:

New Haven, CT – Two researchers at The Connecticut Agricultural Experiment Station, Dr. Jason C. White, Head of the Department of Analytical Chemistry and Vice Director, and Dr. Wade Elmer, Head of the Department of Plant Pathology, have received a two-year grant from Center for Sustainable Nanotechnology (CSN) to conduct research on the use of nanoscale nutrients to suppress crop disease and enhance yield. The focus of the new CSN project will involve the direct synthesis of customized nanoscale micronutrients to suppress soil pathogens which significantly reduce crop production and result in billions of

dollars in annual losses in the United States. CAES investigators have found that nanoscale forms of these plant nutrients are more effective at suppressing disease, improving nutritional status and enhancing crop growth than are conventional products. A summary of CAES's research can be found in a recent article in the publication UNDARK (<https://undark.org/article/nanoscale-connecticut-agriculturalstation/>). This research will help to safely optimize food production and enhance global food security. The CSN is a NSF Center for Chemical Innovation that is now in its third year and includes investigators from 11 universities and the Department of Energy Pacific Northwest National Laboratory.

Good news!

Margy Robinson (the 50th Ph.D. from the **Hamers** lab!), **Mimi Hang** (Hamers group), and **Laura Olenick** (Geiger group) successfully defended their theses!

Margy's thesis was titled "Background-free Imaging of Nanoparticles in Complex Environments" and Mimi's thesis was titled "Investigating and controlling technologically relevant complex metal oxide nanomaterials to mitigate environmental impact."



Bob & Margy



Bob & Mimi

Laura's thesis was titled "Sum Frequency Generation Spectroscopy of Interactions at Model Biointerfaces."



Franz & Laura

Stay tuned, as we hope to have another good news announcement from Laura soon!

Milestones and awards

Our external evaluator, **Dr. Lizanne DeStefano**, was recognized as a Georgia Power Professor of Excellence. As the the [Georgia Power Facebook post](#) says, “Her research interests include the evaluation and sustainability of innovative STEM programs; multi-site initiatives; and programs serving special populations, such as students with disabilities or those at risk for academic failure.” Congratulations, Lizanne!



Photo from Georgia Power Facebook page

Jason White and **Wade Elmer** were featured in a recent Undark.org article entitled “In Connecticut, a Nanoscale Agricultural Experiment With Global Potential: Researchers are experimenting with nano-sized nutrients that might help curb chemical fungicide use and transform agriculture on the cheap.” See the full article [here](#).

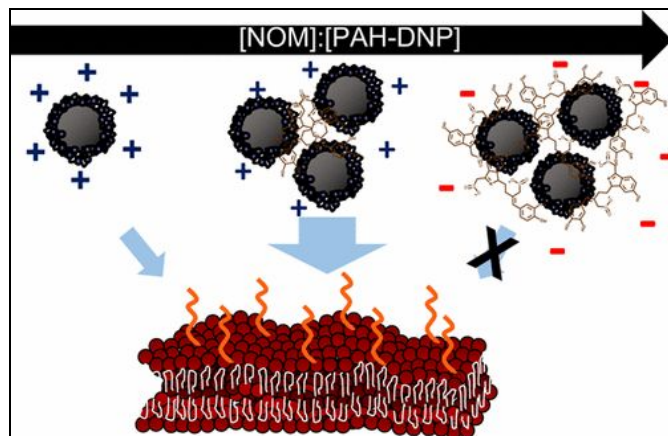


Alicia McGeachy (Geiger group) was recently featured in a *C&E News* sponsored article entitled “How to empower the next generation of chemists - The chemical industry can take several approaches to build a dynamic and diverse 21st-century workforce.” Read more [here](#).

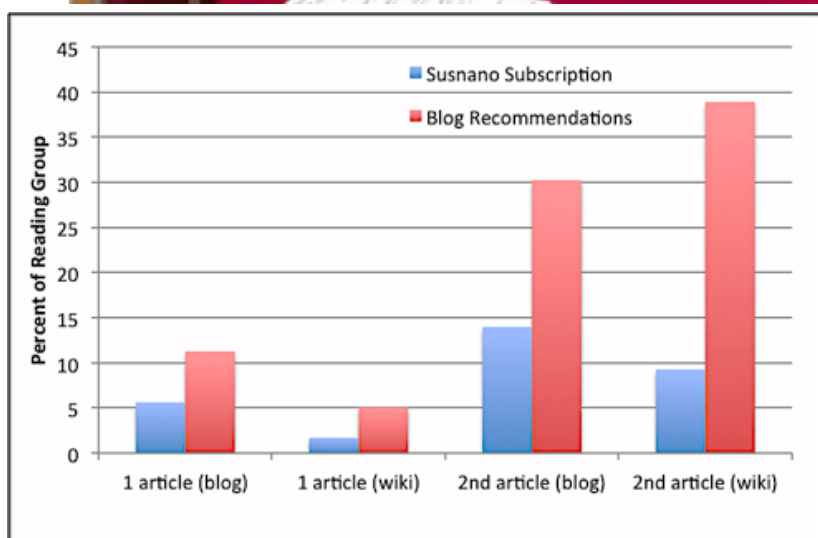
Alicia has also been granted a Student Travel Award to attend the NOBCCHE conference in Minneapolis this November. Congratulations, Alicia!

CSN Productivity

Arielle C. Mensch, Rodrigo Tapia Hernandez, Joshua E. Kuether, Marco D. Torelli, Z. Vivian Feng, Robert J. Hamers and Joel A. Pedersen (2017). Natural Organic Matter Concentration Impacts the Interaction of Functionalized Diamond Nanoparticles with Model and Actual Bacterial Membranes. *Environmental Science & Technology*. ASAP. doi: [10.1021/acs.est.7b02823](https://doi.org/10.1021/acs.est.7b02823)



Students from the **Carlson** and **Haynes** labs worked with **Miriam** to collect data at the Minnesota State Fair last month. A total of 233 volunteers took our “survey” for the study: half read a blog post and the other half read a Wikipedia article. With only preliminary analysis so far, it looks like the articles had little effect on nanotechnology knowledge or explicit science attitudes, but those who chose to read a second article (another blog post) were much more likely to indicate engagement by subscribing to Sustainable Nano updates or requesting a list of recommended science blogs. This could just mean that these participants were already more engaged and said they wanted to read a second article for the same reason they signed up for the emails! But among those who did *not* want to read the second blog post, those in the blog reading group demonstrated greater engagement than those in the Wikipedia reading group (5.6% vs 1.7% for blog subscriptions and 11.3% vs 5.0% for the recommendation list). Stay tuned for more as we dig further into the data! (And let Miriam know if you want to be involved.)



Top: L-R **Stephanie Mitchell**, **Natalie Hudson Smith**, **Miriam Krause**, & **Linus Pomerantz** (not pictured: **Joe Buchman**, **Sunipa Pramanik**, & **Emily Tollefson**) - [Miriam @mirk47 tweeted](https://twitter.com/mirk47): Doing research at the #MNstatefair! Come see us at D2D building near Cosgrove & Dan Patch

Lab Exchanges

Don't forget that our goal is to have every trainee do at least one CSN lab exchange each year. You can use the All-Hands meeting as an opportunity to start planning with prospective visitors/hosts!

Joe Bennett's visit to Tuskegee



Left photo (L-R): **Megan Taylor**, Rodria McGruder, **Aiesha Ethridge**, **Joe Bennett**, and Tamia Tolson. [Dr. Mason @UlchemSEM tweeted](#): Dr. Joseph Bennett [@uiowachem](#) Mason Group visits [@TuskegeeUniv](#) for [@SustainableNano](#) lab exchange and invited talk on DFT/Materials discovery

Mike Schwartz's visit to Northwestern



L-R: **Tianzhe Li**, **Franz Geiger**, **Naomi Dalchand**, **Alicia McGeachy**, **Laura Olenick**, **Mike Schwartz**, **Merve Dogangun**, and **Jo Machesky**

Liz Laudadio's visit to Iowa

Liz Laudadio visited the Mason group, and although they forgot to take a picture, Liz learned about Mason group DFT capabilities, observed some calculations done in dMol and quantum espresso, got an introduction to the Materials Project, and had some in-depth conversations and planning about collaborative efforts.

CSN Talks and Presentations



From left to right: Innovation Council member **Steve Oldenburg**, **Christy Haynes**, **Peter Clement**, **Autumn Qiu**, and **Bo Zhi** after Dr. Oldenburg gave a talk at the University of Minnesota Institute for Engineering in Medicine

Christy Haynes also gave invited seminars featuring CSN work at the University of North Carolina, Chapel Hill (09/18/2017), the University of Virginia (09/22/2017), and the Hispanic Engineering Science and Technology Week (HESTEC) at the University of Texas, Rio Grande Valley.

New CSN Capabilities

Sara Mason received another XSEDE allocation for her project "Density Functional Theory Calculations for Nanomaterials in Energy Applications and the Environment." The award includes the following very precise resources: PSC Regular Memory (Bridges): 1,043,401.0 SUs, PSC Storage (Bridges Pylon): 500.0 GB, SDSC Dell Cluster with Intel Haswell Processors (Comet): 1,185,094.0 SUs, SDSC Medium-term disk storage (Data Oasis): 500.0 GB. For any non-computational chemists out there, the NSF says, "The allocation of SU/GBs awarded to this PI would amount to *approximately* an additional \$82,244.05 to support the scientific goals of the project." Congrats, Sara!

The Latest from Sustainable Nano

See sustainable-nano.com for all the CSN blog posts and podcast episodes.

CSN Blog Posts

- Aug 10: [Graphene Oxide: A new tool in the war against bacteria](#) by **Laura Olenick**
- Aug 18: [Royal Rife's Universal Microscope \(and Why It Can't Exist\)](#) by **Natalie Hudson-Smith**
- Aug 25: [De-Jargonification of Scientific Explications \(AKA How to Say Stuff More Simply\)](#) by **Miriam Krause** (with help from **Natalie Hudson-Smith, Arielle Mensch, & Stephanie Mitchell**)
- Sept 1: [Solar Eclipse 2017 - A Multi-Sensory Experience](#) by **Caley Allen** (with photo contributions from across the CSN)
- Sept 7: [Electrocuting a Pickle: Demonstrating Major Concepts in Science](#) by **Cathy Murphy**
- Sept 22: [Using Nanoparticles in Glazes](#) by REU student **Nikita Rozanov**
- Sept 28: [Have You Ever Heard a Lemon Sing? Music and Chemistry](#) by **Alicia McGeachy**

CSN Podcast Episodes

- Ep 17. [Putting Science to Work for Society: A Visit to the Connecticut Agricultural Experiment Station](#) - interview with **Jason White** by **Natalie Hudson-Smith** and **Jaya Borgatta**
- Coming this week! Ep 18. Emerging Contaminants (interview with **Rebecca Klaper**)

Fun!



The Haynes group's annual trip to the Minnesota State Fair. Clockwise from right: **Joe Buchman, Peter Clement, Clark Burdick, Jiayi He, Amani Lee, Natalie Hudson-Smith, Bo Zhi, Shengyang Wang, and Christy Haynes**



Rigoberto Hernandez gave his talk as the recipient of the ACS Georgia Local Section Herty Award (announced in the *What's Happening* vol 2 issue 7 from April). Congrats again, Rigoberto!

Photo from
[ACS Georgia Local Section Facebook page](#)

Christy Haynes attended the [Blavatnik Awards](#) in New York as a finalist for the 2017 Chemistry Award (announced in the *What's Happening* vol 2 issue 8 from June). Congrats again, Christy!



Left photo from the [Blavatnik Awards Facebook page](#), right courtesy of Christy, below from the [@BlavatnikAwards twitter feed](#)



Opportunities

TODAY Oct 4 at 3:00 Eastern: The Story of a Patent

PFI (Preparing Future Innovators) hosted by CCE & CCHF

Join us for a candid discussion with biochemist Jenny Yang and intellectual property attorney Nigam Acharya to learn what any chemist or chemical engineer needs to know when it comes to patent law and process. The two will share their personal experiences taking academic innovations through the patent process. Come ready with questions, in person or online.

Register online: goo.gl/ecGhN7

Monday, Oct 9 at 2:00 Eastern: Nano 2.0: Multi-scale Nanomaterials

ACS Webinar

Celebrate National Nano Day with nanotechnology pioneer Teri Odom of Northwestern University as she shares how assembling nano super-structures opens possibilities for new classes of multi-scale nanomaterials with unprecedented physical characteristics.

More information and registration at

<https://www.acs.org/content/acs/en/acs-webinars/technology-innovation/nano.html>

Thursday, Oct 12 at 2:00 Eastern: Metacommunication: Conveying Passion and Engaging Others

ACS Webinar

How you deliver your content can be the difference between engaging your audience, or standing in front of a sea of faces staring at their smartphones. Audiences respond to seminars, lectures, and speaking engagements that include stories told by passionate, intelligent experts. Join Matt Grandbois of Dow Chemical to discover how to tap into your inner scientific passion to create engaging experiences that will make your science and your data reach a larger audience.

More information and registration at

<https://www.acs.org/content/acs/en/acs-webinars/professional-development/metacomm.html>

Looking Ahead

- **All-hands meeting!** October 6-7, University of Illinois at Urbana-Champaign
- **Student Board meeting:** Monday, Oct 9 at 10:30 Central
- **Diversity Committee meeting:** Tuesday, Oct 10 at 11:00 Central
- **All-faculty meeting:** Thursday, Oct 12 at 11:00 Central
- **Student Seed Committee meeting:** Thursday, Oct 12 at 2:00 Central
- **Arielle Mensch's Thesis Defense:** Friday, Oct 13 at 12:00 Central
- **SACNAS conference:** Oct 19-21 in Salt Lake City, UT
- **National Chemistry Week:** Oct 22-27
- **Professional Development - CSN Alumni Panel:** week of Oct 23 – exact time TBA
- **NOBCChE conference:** Oct 30-Nov 3 in Minneapolis, MN

Lost in Cyber-Space?

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.