

What's happening in the CSN?

April 9, 2018

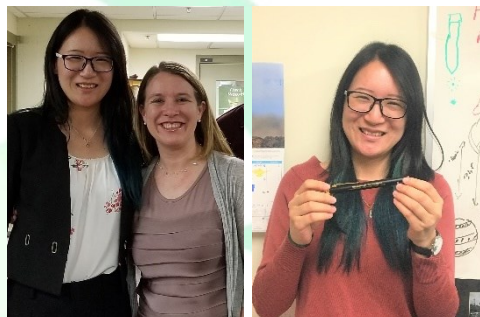
Volume 3, Issue 6



Celebrations

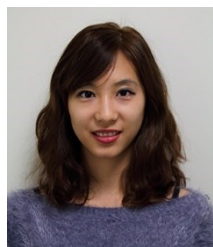
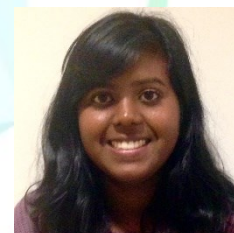
Good news!

Congratulations to **Dr. Tian (Autumn) Qiu** (with Ph.D. advisor **Christy Haynes**, left picture) for successfully defending her thesis, titled "Bacterial Response to Nanoparticles at the Molecular Level"! She will be departing in a couple months to begin a Beckman Postdoctoral Fellowship at the University of Illinois. Autumn celebrated with her CSN graduation gift (right picture), a bright green laser pointer inscribed with "Congratulations Dr. Tian (Autumn) Qiu! From the Center for Sustainable Nanotechnology." We know she will put this laser pointer to good use presenting all her exciting future research results!



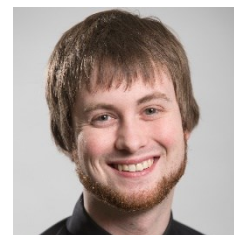
Milestones and awards

Leslie Sigmon (Fairbrother group) has been selected as an awardee for the NSF Graduate Research Fellowship Program (GRFP)! **Peter Clement (Haynes group)** and **Naomi Dalchand (Geiger group)** were also recognized with honorable mentions. Congratulations to Leslie, Peter, and Naomi! Kudos as well to everyone who submitted a GRFP proposal – they require a lot of hard work and thought, and those of us who have served on review committees can attest that there are many more outstanding proposals than awards for this extremely competitive program, so many excellent proposals are not funded.



Congratulations to Kelly Zhang on being named a recipient of this year's **Paul Bender Memorial Award** by the UW-Madison Department of Chemistry! Kelly is being recognized particularly for her CSN work investigating the morphology and dynamics of polymer-wrapped nanoparticles using most of the alphabet soup of NMR techniques, which you can read in her Analytical Chemistry paper linked [here](#).

Joe Buchman (Haynes Group) was awarded a travel grant from the Minnesota section of the ACS, which provided support to attend the ACS conference in New Orleans. Congrats Joe!

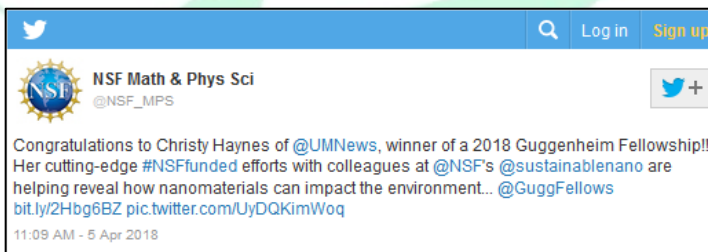


Emily Caudill (Pedersen Group) was also awarded a \$500 travel scholarship from the [Graduate Student Symposium Planning Committee](#) who organized the "Finding our Place at the Bottom: A Symposium in Memory of Richard Feynman" symposium. The award covers some of her expenses for the ACS New Orleans meeting. Congratulations Emily!

Congratulations to **Meghan Cahill (Haynes group)**, an undergraduate researcher co-mentored by **Natalie Hudson-Smith** and **Peter Clement**, on being chosen as a winner of the Thomas DuBruil Undergraduate Research Award for 2018!

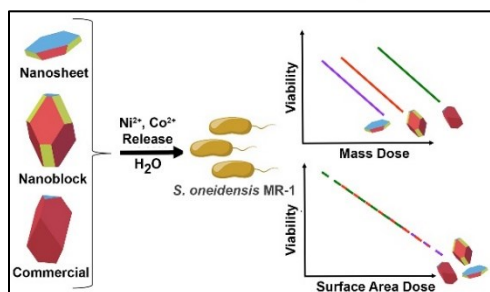
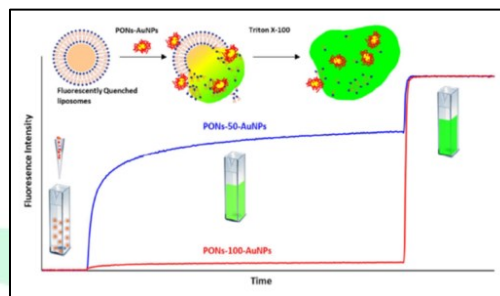


Congratulations to **Christy Haynes**, who has been awarded a prestigious [Guggenheim Fellowship](#), which will help fund her sabbatical in Spain next year. The Guggenheim Foundation website states that "Fellowships are intended for individuals who have already demonstrated exceptional capacity for productive scholarship or exceptional creative ability in the arts."



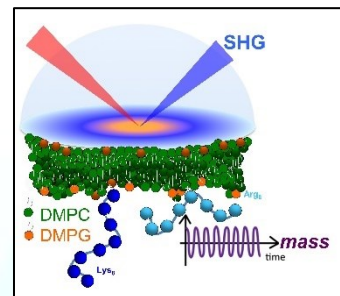
CSN Productivity

Zheng Zheng, Julia Saar, Bo Zhi, Tian (Autumn) Qiu, Miranda Gallagher, Howard Fairbrother, Christy Haynes, Karen Lienkamp and Zeev Rosenzweig (2018). **Structure-Property Relationships of Amine-Rich and Membrane-Disruptive Poly(oxonorborene)-Coated Gold Nanoparticles.** *Langmuir*. Read the online article [here](#).



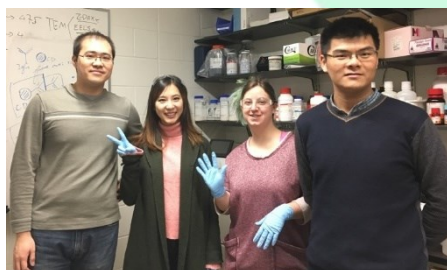
Mimi Hang, Natalie Hudson-Smith, Peter Clement, Yongqian (Kelly) Zhang, Chenyu Wang, Christy Haynes and Robert Hamers (2018). **Influence of Nanoparticle Morphology on Ion Release and Biological Impact of Nickel Manganese Cobalt Oxide (NMC) Complex Oxide Nanomaterials.** *ACS Applied Nano Materials*. Read the online article [here](#).

Alicia McGeachy, Emily Rose Caudill, Dongyue Liang, Qiang Cui, Joel A. Pedersen and Franz Geiger (2018). **Counting Charges on Membrane-bound Peptides.** *Chemical Science*. Read the online article [here](#).



Lab Exchanges

Hamers group researchers **Kelly Zhang** and **Chenyu Wang** visited the **Haynes lab** at the University of Minnesota in March. Kelly used a Growth Based Viability (GBV) assay to measure toxicity of *Shewanella* exposed to functionalized diamond nanoparticles with **Natalie Hudson-Smith**. She also investigated association of diamond nanoparticles with *Shewanella* using darkfield microscopy and collected preliminary TEM data with **Bo Zhi**. Chenyu worked with **Joe Buchman** to compare toxicity of NMC 622 and NMC 333 nanoparticles towards *Shewanella*, with preliminary results indicating that both formulations had similar effects. Chenyu said "I feel it is quite essential for people with materials background to know



Bo Zhi, Kelly Zhang, Natalie Hudson-Smith, Chenyu Wang



Megan Cahill, Natalie Hudson-Smith, Kelly Zhang, Chenyu Wang, Stephanie Mitchell

more about the concerns from the people with biochemistry background. Also this lab-exchange makes me realize the complexity of bio experiments and better understand the key factors of nanoscale materials in the toxicity study.”

Managing Director **Mike Schwartz** visited the University of Minnesota to attend Autumn’s thesis defense (see above). Mike also visited the Hagfors Center for Science, Business, and Religion at Augsburg, which is where **Vivian Feng’s** new lab space is located.



Celebrating Autumn’s defense with (L-R) Becky Rodriguez, Autumn, Christy, and Mike

CSN Talks and Presentations

The CSN had its first Center-wide outreach event at the [Maryland Science Center’s Nanotech Day](#), which took place during the All-hands meeting in Baltimore. Volunteers from every CSN lab provided 6 hands-on demonstrations during the event (see the “Fun” section below for more pictures from the event).

Event Calendar

- ☒ All Types
- ☐ For Adults
- ☐ For Kids
- ☐ For Educators
- ☐ For Members

Filter Events List

Nanotech Day

Who: Adults, Educators, Families & Kids, Members

Where: Maryland Science Center

When: March 4, 2018 11:00 am - 3:00 pm

How Much? free with paid admission

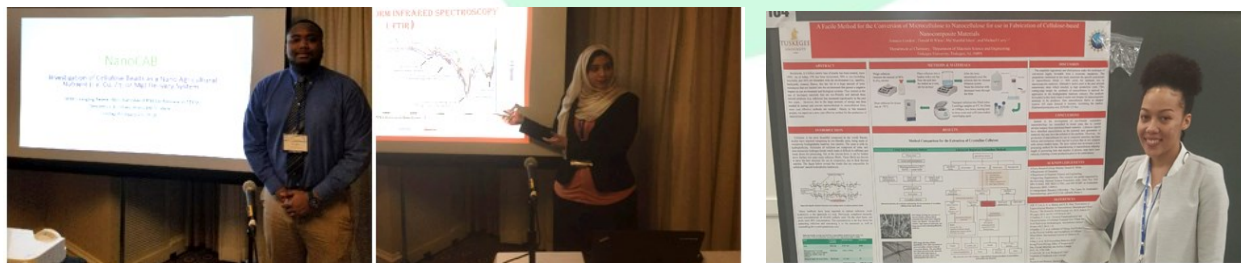
Explore the minuscule world of atoms and molecules at the Maryland Science Center’s Nanotech Day. Meet the scientists of the Center for Sustainable Nanotechnology and see how tiny tech can create big surprises. Discover nanoscale science’s impact on our everyday lives, and experience first-hand the technological advances it has made. All activities are free with paid admission and completely free for members.



E-News

Sign up to receive Science Center news and updates

The Eco-friendly Crew from the **Curry Group** showed off their hard work at the 2018 ERN Conference held in Washington, DC, on February 22-24. Graduate students **Demetrius Finley** (left) and **Manal Alwohaibi** (middle) gave oral presentations and undergraduate student **Amanee Gordon** (right) presented a poster.

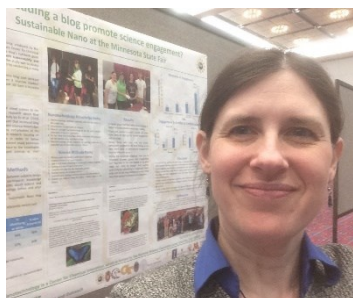


Peter Clement (Haynes group) presented at the recent SETAC YES conference on the interactions of nanoscale multiphase lithiated cobalt phosphate with *Shewanella oneidensis* MR-1 and *Bacillus subtilis* (see tweet to right). The talk focused on how to further mechanistic understanding of bacterial toxicity using internalized fluorescent probes. **Natalie Hudson-Smith (Haynes group)** also presented a poster (NMC Morphology) at SETAC YES and gave a public presentation about agricultural applications of nanotechnology for the SETAC Science Slam at the High Noon Saloon in Madison. **Izzy Foreman-Ortiz (Pedersen Group)** also presented a poster (ion channels with anionic nanoparticles) at SETAC YES and gave a public presentation about nanotechnology overall and its potential implications for cells. **Emily Caudill** organized, gave feedback to the presenters, and hosted the Science Slam event. **Christian Lochbaum** and **Kyoungtea Kim** from **Pedersen group** and **Jaya Borgatta, Paige Kinsley** and **Curtis Green** from **Hamers group** supported Natalie, Izzy, and Emily by attending the event.



Bob Hamers visited the University of Puerto Rico-Rio Piedras and the University of Puerto Rico-Cayey in February. Bob met with [Carlos Cabrera](#) (Director of the CREST Center for Innovation Research and Education in Environmental Nanotechnology) and Liz Díaz-Vázquez, and talked with a number of students, including one of our incoming REU students who will be in Bob's lab for the summer.

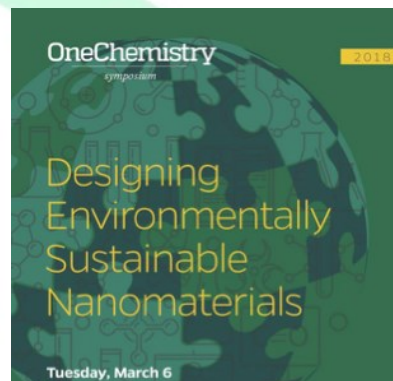




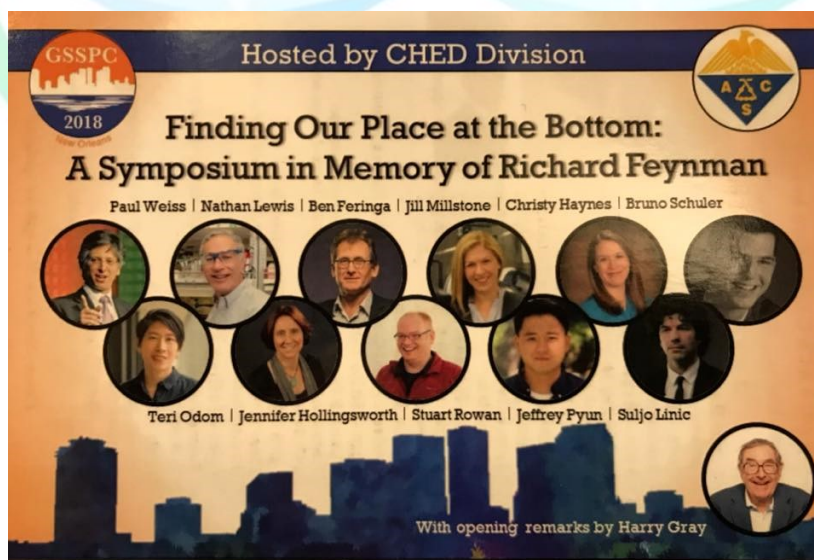
Miriam's science poster selfie

Director of Education and Outreach **Miriam Krause** presented a poster entitled "Does reading a blog promote science engagement? Sustainable Nano at the Minnesota State Fair" at the Science Talk 2018 conference in Portland, OR. Miriam's webinar for the National Nanotechnology Initiative from January, "Connecting Classrooms and Researchers with the Sustainable Nano Blog," is also now available to stream [online](#).

Rigoberto Hernandez and **Howard Fairbrother** hosted the OneChemistry Symposium on "[Designing Environmentally Sustainable Nanomaterials](#)" at Johns Hopkins University (March 6, 2018). The event featured several speakers and moderators from the CSN who offered their perspectives on sustainable nanotechnology, including **Bob Hamers**, **Christy Haynes**, **Cathy Murphy**, **Erin Carlson**, Howard, and Rigoberto.



The Center was very well represented at the 255th National Meeting of the American Chemical Society in New Orleans, LA, with 36 posters and presentations! You can see the full list [here](#) and see below for some tweets and photos from the conference. Among the many presentations by CSN researchers, **Christy Haynes** was featured in the grad student-organized ACS symposium "Finding Our Place at the Bottom: A Symposium in Memory of Richard Feynman."



Christy also gave invited seminars on CSN work at the Chemistry Department at Indiana University-Purdue University Indianapolis (IUPUI) and Rice University.

Latest from Sustainable Nano

See sustainable-nano.com for all the CSN blogs and podcasts. Our podcast are also on [Spotify](https://open.spotify.com/)!

Blog posts and podcast episodes since the last newsletter

- Feb 22: [Engineered Nanoparticles Change Shape in Soil and Groundwater](#) by Sam Lohse (public-friendly article summary)
- Feb 23: [El uso de nanopartículas en esmaltes](#) (Nano Sostenible translation of “Using nanoparticles in glazes” by Nikita Rosanov)
- March 1: [Espectroscopía fotoelectrónica de rayos X](#) (Nano Sostenible translation of “X-Ray photoelectron spectroscopy” by Katrina Carlin)
- March 16: [Óxido de grafeno: Una nueva herramienta en la guerra contra las bacterias](#) (Nano Sostenible translation of “Graphene Oxide: A new tool in the war against bacteria” by Laura Olenick)
- March 30: [¿Puede el oro derretirse a temperatura de ambiente? Depresión de la temperatura de fusión](#) (Nano Sostenible translation of “Can gold melt at room temperature? Melting temperature depression! by Meng Wu)
- April 4: [Spring 2018 Update & Recommended Reading](#) by Miriam Krause

Diversity Corner

From **Emily Caudill (Pedersen group)**: “I subscribe to Small Pond Science, a site that discusses prominent issues in scientific research, teaching, and mentoring in academic institutions. For the Diversity Corner component of the newsletter, I think this could be an interesting feature: [Please focus more on inclusion so that diversity recruitment efforts can work.](#)”

Some quotes from the article:

If we keep bringing minoritized folks into white spaces that don't fully include and accept our peers, then this recruitment is actually counterproductive.

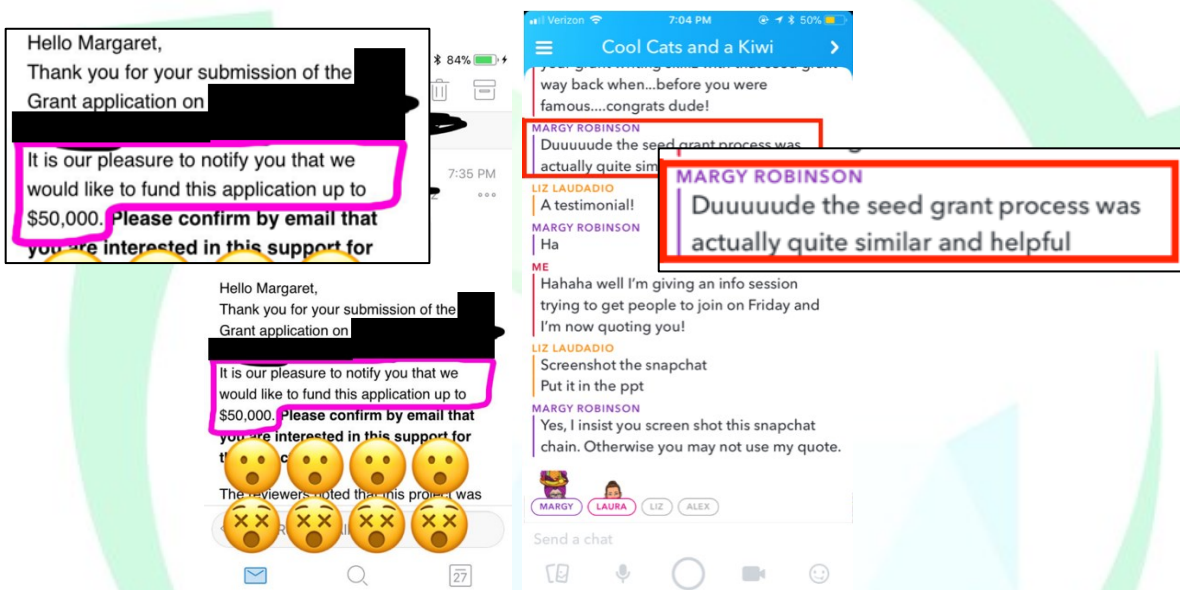
In the last few years, I've reviewed dozens of NSF proposals, and seen far more in the context of panels. Recruiting and mentoring students from underrepresented minorities is a very very common theme. However — at most — only a handful of proposals actually suggested doing anything to create an environment that will provide an inclusive environment to the people who are recruited. How would you plan for these recruitment efforts to succeed? Can you go beyond providing support to the recruits?

The writer offers some specific examples at the end of the post about promoting inclusion. What do you think we can do in the CSN?

Fun!

UMBC pulls off “the biggest upset ever” in the NCAA tournament!!! While the focus was on their vaunted basketball team last month, check out this great story about UMBC academics from the *New York Times*: [Cinderella Story? It’s True for U.M.B.C. in Academics](#). It looks like everyone else is finding out what the CSN already knew (after all, UMBC is the home of the **Rosenzweig group**).

CSN Alum **Margy Robinson (Hamers group)** was recently notified that she was awarded a grant, and kindly (with a touch of snarky) gave permission for us to share her Snapchat with Arielle below as a testimonial for the CSN Seed Grant program. Well done, Margy!



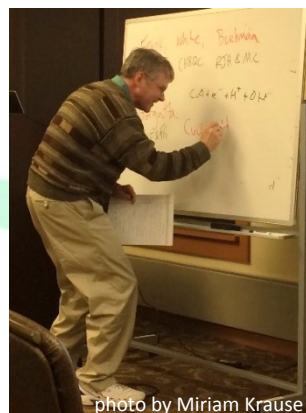
From the SETAC YES conference in Madison, WI.



Left: Emily Caudill kicking off SETAC YES in Madison, WI.

Right: Natalie Hudson-Smith presents at the SETAC YES Science Slam at the High Noon Saloon.

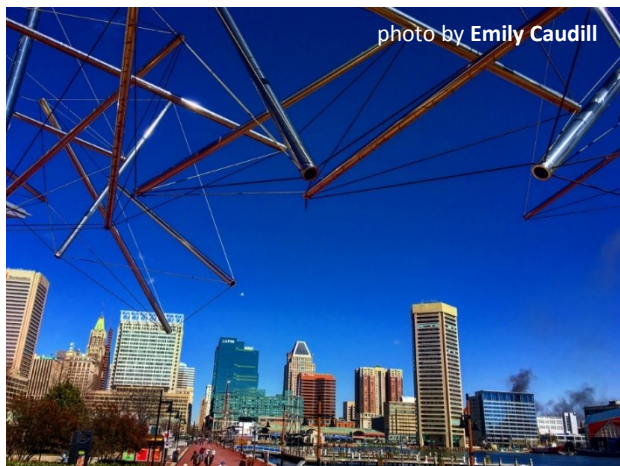
Baltimore Photos & Tweets



Bob showing off his board work during the flash talks..Wait, what's that chemical formula?



The CSN at Maryland Science Center's Nanotech Day



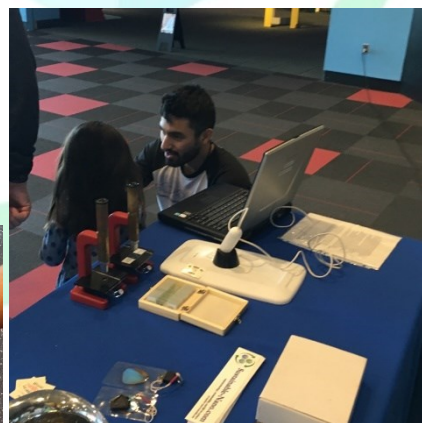
Naomi Dalchand (Geiger group), Zack Jones (Hamers group), Donald White (Curry group) and Ricky Brown (Rosenzweig group) explaining surface area/Alka Seltzer
(photo by Miriam Krause)



Diamond Jones (Mason group) and Meng Wu (Murphy group) explaining textile "nanopants"
(photo by Miriam Krause)

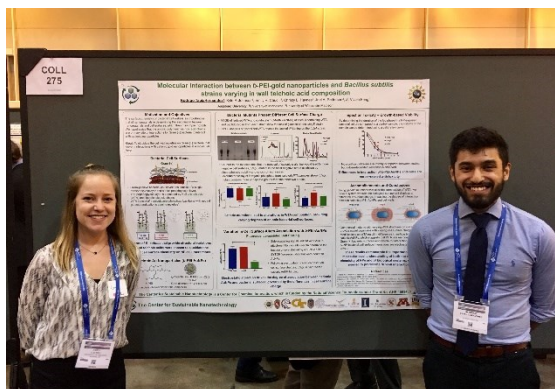


Temporary tattoos!
(photo by Emily Caudill)

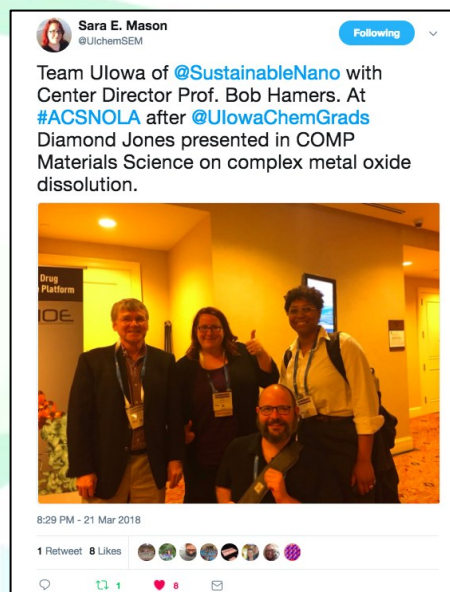
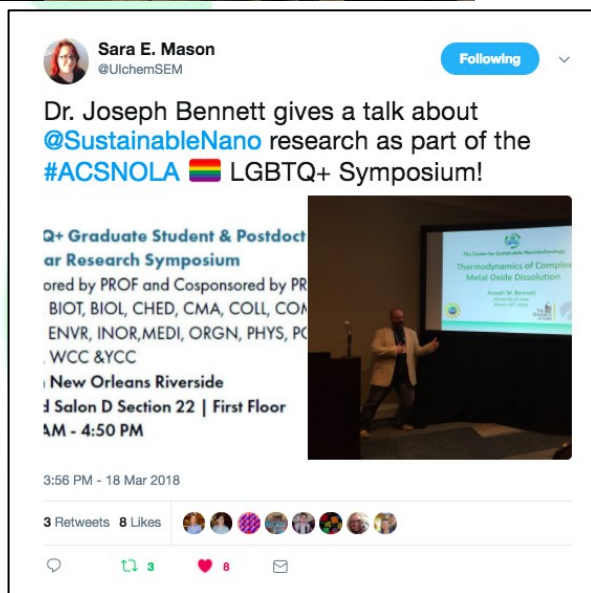


Rodrigo TapiaHernandez (Feng group)
(photo by Arielle Mensch)

ACS Photos & Tweets



Emily Caudill (Pedersen group) and Rodrigo TapiaHernandez (Feng group) presenting their CSN work at SciMix



Linus (Krause group) helping Natalie Hudson-Smith (Haynes group) prepare for her presentation at ACS



Adia, Linus, and Aden (Mason & Krause groups) representing the next generation at ACS

And more Baltimore (Where's Donald? Edition)....



Opportunities

P&G Focusing on Industrial Recruitment of Scientific Talent (FIRST) Conference - [FIRST link](#)

Are you interested in learning more about industrial research careers? Do you want to see your research brought to life in products that improve the lives of consumers around the world? Apply now and learn what industrial research at P&G is all about! The FIRST Conference is your opportunity to experience the wide range of exciting research careers at P&G. You will travel to Cincinnati-based technical centers to experience industrial careers in action, network with a group of successful scientists and other professionals whose leadership in science and technology is well established, and gain a deeper understanding of the realities of cultural and workforce diversities. You will learn how P&G invests in basic and applied research, which ultimately brings superior innovation to the marketplace. The FIRST Conference is a unique recruitment opportunity that will be held September 2018, in Cincinnati, Ohio. All travel expenses and hotel accommodation costs will be paid by P&G. You could leave this conference with a day visit invitation and may be considered for future employment at P&G.

[Applications must be received by July 2018](#), to be considered for the 2018 conference. Be sure to attach the following to your application: Current resume and a 1 page research summary. Applicants should **expect to receive a doctoral degree within 9-24 months of the conference date. Postdoctoral researchers are also encouraged to apply.**

Science & Human Rights Coalition: 2018 Student Essay and Digital Media Competitions:

Beginning April 1, undergraduate and graduate level students in any major can enter the 2018 Science and Human Rights Digital Media and Essay competitions. Winning entries in the Digital Media competition are awarded cash prizes; winners of the essay competition will have their travel expenses covered to attend the July Coalition meeting. Details, rules, and tips for creating a strong entry are available at <https://www.aaas.org/shr2018essay> and <https://www.aaas.org/shr2018digital>.

Tell a Story About Green Chemistry and Win a Trip to the 2018 Green Chemistry & Engineering Conference in Portland, Oregon [Deadline: April 15]

From the [program website](#): Attention all postdoctoral, graduate, and undergraduate students: do you have a story to tell about green chemistry? Do you share our belief that the power and potential of green chemistry need to reach a much broader audience? If so, now's your chance to be heard! Channel your creativity and harness your passion. Create a video that vividly depicts an aspect of green chemistry, and explains how chemists use green chemistry to solve sustainability challenges, and we'll share your story with the world. The producers of the best video will win a trip (flight, hotel, conference registration)* to the 2018 Green Chemistry & Engineering Conference in Portland, Oregon (June 18-20, 2018) to show your video to world leaders and conference participants in the field of green chemistry.

SACNAS Student Presentation & Travel Scholarship (full details on the [program website](#))

From the website: "As scientists, we know that research is a fundamental component of our path to discovery. Research presentations provide students and postdocs a platform to share research on a national scale. Through either a poster or oral presentation, you can improve your science communication

skills, advance your research with valuable feedback and one-on-one mentoring, and connect with a community of peers and role models ready to help you succeed.” 250-word abstracts are due **by April 13, 2018, 5:00 PM Pacific time**

Note: Graduate students who have previously given an oral presentation at a SACNAS conference are not eligible to apply for an oral presentation. However, they are encouraged to apply for a poster presentation. Graduate students who have never given an oral presentation at a SACNAS conference are welcome to submit an application for an oral presentation.

Looking Forward - Year 3 Annual Report

The reporting period for Year 3 is September 1, 2017 – August 31, 2018. Please include information such as presentations accepted to summer conferences, even though they haven’t happened yet (you can estimate the date based on when the conference occurs). ***If there are any important items from LAST summer that were not included in the Year 2 Annual Report,*** you can add them this year. There is a separate Year 2 tab for each of these documents where you can see what was entered last year (see the documents attached to the original email for last year’s annual report documents).

For trainees

All Participants must complete each of these Year 3 Annual Report forms if applicable (forms organized exactly as the NSF requires me to enter info into their system):

1. **Participants Yr 3 Annual Report Checklist** – [link](#)
Please put an ‘X’ in each box once you’ve completed your entries (or if you have no information to enter).
2. **Presentations** – [link](#) – [view entries](#)
PLEASE pay attention to the formatting for names, titles, etc – it needs to be the same for everyone.
3. **Outreach Activities** – [link](#) – [view entries](#)
4. **Awards or Other Activities** – [link](#) – [view entries](#)
Include any academic accomplishments or recognition you received.
5. **Lab Exchanges** – [link](#) – [view entries](#)

When you are finished, please put an X by your name for each section in the [Participants Yr 3 Annual Report Checklist](#), even if you have nothing to report.

For faculty

[PI Checklist](#) - Please add an ‘X’ to the column after completing an item:

1. **[NSF Questions](#)**. This is where general accomplishments are provided, such as awards, leveraged grants, outreach activities, etc. You can see last year’s entries [here](#).
2. **[Participants effort](#)**. Report Year 3 effort for each CSN participant in your lab. Please project % effort to August 31, which is the end of Year 3.
 - **Add an ‘X’ next to the name of completed participants.**

- **Add any new participants TO THE END of the document** if they are not included in the current spreadsheet. **Do not remove participants** even if they left the Center before Year 3 – instead, change the person months column to **0**.
 - Please be sure to read the instructions, since NSF has very specific definitions for what each category should include.
 - Last year's entries are included, so you only need to edit those if anything changed since last year. New participants with a red box next to their name have not been included previously, so need all the information filled out.
3. **New Presentations.** You **MUST provide all the information asked for in the Google form** (the information is required for entering into the NSF system).

Nanodatabase

5 easy steps for using the Nanodatabase (please email Mike when you complete these tasks):

1. **Log into the Nanodatabase.** <https://csndb.chem.wisc.edu/access/login>
2. **Create a Study page for one of your primary projects (choose one where you've generated and worked up some data).**
Use your official project title as the title for the Study page, which you can find listed on the percent effort Google form [here](#) (also available on the Nanodatabase on the [CSN Help Page](#)).
3. **Create a new Experiment from the Study page** ("Create New Experiment" button, lower left of page).
 - a. **Name the page using the project number** (not the full title) followed by a description of the data (something like "MP.N.01: Output for Managing Director's tips on Nanodatabase usage and associated mishmash")
 - b. **LOCK the Experiment page** so you can complete Step 4.
4. **Create a Measurement from the Experiment page** ("Add New Measurement" button, lower left of page).
 - a. **In the Measurement page, upload raw data** you collected for the project described in the Study by using the "Upload New Document" button. Choose data that you have already worked up in some way (such as by creating graphs in Excel) so you can complete step 5.
 - b. **Add the Lab Notebook ID associated with the data** you just uploaded into the Measurement page (the Lab Notebook ID section is in the upper left of the page).
 - c. **LOCK the Measurement page.**
5. **Upload a processed data file into the Experiment page** based on the raw data you just uploaded into the Measurement page. For example, if you uploaded raw FTIR data from the instrument into the Measurement page, upload the IGOR or Excel file used to process the FTIR spectra (e.g., to analyze the data or prepare it for a figure).

Bonus points: Create a **Protocol** page to document the methods used to generate the data above and **associate the Protocol page with the Measurement page** where you uploaded the raw data.

See my original email for more details, instructions, and a few tips on things to watch out for as you navigate our new "makes your life easier" tool!

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.

