

What's happening in the CSN?

January 21, 2021

Volume 6, Issue 2



#Academics4BlackLives

Our newsletter is usually focused on CSN accomplishments and celebrations. Celebrations are still important, but the CSN admin team (Bob, Christy, Miriam, and Mike) felt that it was necessary to respond to the extraordinary events surrounding the attack on the Capitol on January 6 and its aftermath. The blatant display of white supremacy during the Capitol insurrection and the underlying factors that enabled this attack cannot be dismissed as an aberration; white supremacy permeates a wide cross-section of society and underlies racist systems and structures that have existed throughout our history, including within our own academic community. These shocking events have impacted us all, and we recognize that the impact on our BIPOC, LGBTQIA+, and other marginalized communities is even greater. While today brings new hope, the events leading up to the inauguration emphasize the need for urgency as we work to realize the future outlined in our [diversity, equity, and inclusion vision and values statement](#).

The CSN admin team reaffirms our commitment to implementing changes within the center that move us toward our vision. As part of that commitment, we are thrilled to welcome to **Dr. Della Mosley** to the CSN community as our new Wellness, Equity, and Liberation Consultant (pending red tape). Dr. Della is a counseling psychologist from the University of Florida who brings a unique and powerful approach to diversity, equity, and inclusion (learn more at dellavmosley.com). She also co-founded [Academics for Black Survival and Wellness](#) with graduate student Pearis Bellamy, and offered a workshop this summer that several people from the CSN and other centers in the CCI program participated in. Welcome to the CSN, Dr. Della!



To anyone who is having a difficult time navigating trauma of recent events or any other circumstances you might be facing, we encourage you to focus on your well-being and we hope that you will reach out to CSN leadership (admin contact info at end of newsletter) or any of your other support networks for help. There are many mental health resources available, including through most universities. If you're not sure where to start, please reach out and we will help in any way we can.

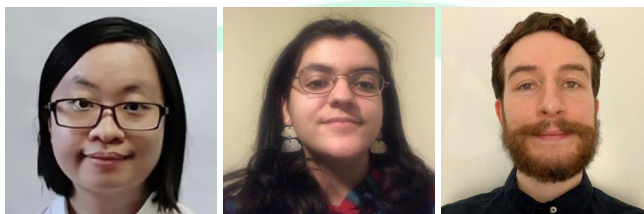
One particular resource that was shared by our Diversity Committee is [Mental Health Warmlines](#) from Mental Health America: "Warmlines were created to give people support when they just need to talk to someone. Speaking to someone on these calls are typically free, confidential, and run by people who understand what it's like to struggle with mental health problems."



Celebrations

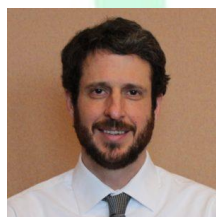
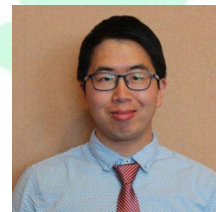
Welcome to New CSN Members

The CSN welcomes incoming graduate students (left to right) **Cheng-Hsin Huang** (Haynes group), **Victoria Rivera** (Mason group), and **Leopoldo Posada** (Rosenzweig group, rejoining us after previously participating in our Summer Undergraduate Research Experience program)! Welcome to the CSN!



Good news!

Zheng Zheng (Rosenzweig group) successfully defended his thesis, entitled “Synthesis of Amine Rich Poly(oxanorbornene) Functionalized Gold Nanoparticles as a Model for Understanding Nanoparticle Membrane Interactions,” on October 12, 2020. Zheng is now a scientist at Mesoscale Discovery. Congratulations Dr. Zheng!



Ricky Brown (Rosenzweig group), who earned his Ph.D. in July, has started a new postdoc position at Penn State with [Kenneth Keiler](#). Congratulations Ricky!

Feng group alumni **Nikki Hoang** (Murphy group) and **Rodrigo Tapia Hernandez** got married on November 21 and hope to have a reception next summer. Congratulations Nikki and Rodrigo!

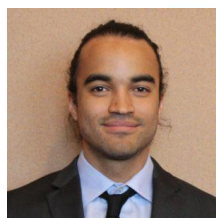
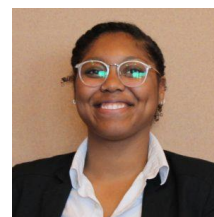


Welcome to **Ingrid**, who was born in November to become the newest member of **Ian Gunsolus'** (Haynes group alum) family and honorary CSN baby affiliate. Congratulations, Ian!



Milestones and awards

Congratulations to **Diamond Jones**, who helped the **Mason** group secure early access to a brand-new, NSF-XSEDE enabled computer at the Pittsburgh Supercomputing Center (PSC): bridges-2 (See [PSC's bridges-2 page](#))! This competitive one-month access will allow Diamond to port CSN modeling projects to the new hardware, and provides free unlimited computer time to advance her science.



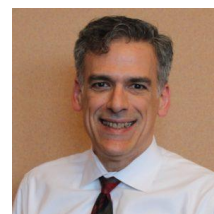
Congratulations to **Zack Jones (Hamers group)** for winning the Best Student Poster Presentation in the Nanodiamond Symposium at the 2020 MRS Virtual Spring/Fall Meeting & Exhibit! His poster was entitled “Selective Imaging of Diamond Nanoparticles in Complex Matrices Using Magnetically Induced Fluorescence Contrast.”

Jaya Borgatta's and **Bob Hamers' U.S. patent**, entitled “Compositionally and Morphologically Controlled Nanostructures for Delivery of Micronutrients and Suppression of Disease in Agriculture,” was granted on November 3, 2020 ([U.S. Patent #10,820,588](#))! Congratulations to Jaya and Bob!



Congratulations to **Mahima Unnikrishnan (Murphy group)** for passing her 3rd year preliminary exam to officially become a Ph.D. candidate!

Rigoberto Hernandez was elected to serve in the Chair succession (Vice Chair, Chair-Elect, Chair, and Past Chair, in 1-year terms) of the Division of Chemical Physics in the American Physical Society. He will join the executive board at the virtual APS March Meeting 2021. Congratulations Rigoberto!



Jason White was Commissioned as an Officer of the US Department of Health and Human Services Food and Drug Administration, which means they can send him confidential information, involve him in investigations, and use him for methods review and data analysis.



Jason was also one of the [Clarivate Highly Cited Researchers 2020](#). The list includes 6167 (0.1% of researchers) “scientists and social scientists who have demonstrated significant and broad influence, reflected in the publication of multiple papers frequently cited by their peers during the last decade” (2009-2019).



CSN alum **Tian (Autumn) Qiu** (Ph.D. 2018, **Haynes** group) was awarded a 2020-2021 Mistletoe Postdoctoral Research Fellowship by the [Momental Foundation](#). Congratulations Autumn!

CSN Publications

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

Chuanxin Ma, Jaya Borgatta, Blake G. Hudson, Ali Abbaspour Tamijani, Roberto De La Torre-Roche, Nubia Zuverza-Mena, Yu Shen, Wade Elmer, Baoshan Xing, Sara E. Mason, Robert J. Hamers and Jason C. White (2020). Advanced material modulation of nutritional and phytohormone status alleviates damage from soybean sudden death syndrome. *Nature Nanotechnology*. 15 (12), 1033-1042. Read the online article [here](#).



This article was also featured on the cover of *Nature Nanotechnology* (right), and in [Connecticut Agricultural Experiment Station](#) and [University of Iowa](#) press releases.

Dongyue Liang, Udaya Dahal, Meng Wu, Catherine J. Murphy and Qiang Cui (2020). Ligand Length and Surface Curvature Modulate Nanoparticle Surface Heterogeneity and Electrostatics. *The Journal of Physical Chemistry C*. 124 (44), 24513-24525. Read the online article [here](#).

Arielle C. Mensch, Hugh D. Mitchell, Lye Meng Markillie, Elizabeth D. Laudadio, Jenny K. Hedlund Orbeck, Alice Dohnalkova, Michael P. Schwartz, Robert J. Hamers and Galya Orr (2020). Subtoxic dose of lithium cobalt oxide nanosheets impacts critical molecular pathways in trout gill epithelial cells. *Environmental Science: Nano*. 7 (11), 3419-3430. Read the online article [here](#).



Isabel U. Foreman-Ortiz, Dongyue Liang, Elizabeth D. Laudadio, Jorge D. Calderin, Meng Wu, Puspan Keshri, Xianzhi Zhang, Michael P. Schwartz, Robert J. Hamers, Vincent M. Rotello, Catherine J. Murphy, Qiang Cui and Joel A. Pedersen (2020). Anionic nanoparticle-induced perturbation to phospholipid membranes affects ion channel function. *Proceedings of the National Academy of Sciences*. 117 (45), 27854-27861. Read the online article [here](#).

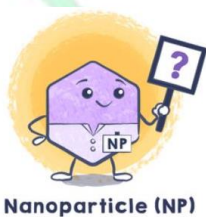
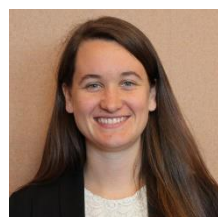
Nicholas J. Niemuth, Yonqian Zhang, Aurash A. Mohaimani, Angela Schmoldt, Elizabeth D. Laudadio, Robert J. Hamers and Rebecca D. Klaper (2020). Protein Fe–S Centers as a Molecular Target of Toxicity of a Complex Transition Metal Oxide Nanomaterial with Downstream Impacts on Metabolism and Growth. *Environmental Science & Technology*. 54 (23), 15257-15266. Read the online article [here](#).

Rebeca S. Rodriguez, Tana L. O’Keefe, Clarice Froehlich, Riley E. Lewis, Trever R. Sheldon and Christy L. Haynes (2020). Sensing Food Contaminants: Advances in Analytical Methods and Techniques. *Analytical Chemistry*. Accepted. Read the online article [here](#).

Bo Zhi, Xiaoxiao Yao, Meng Wu, Arielle Mensch, Yi Cui, Jiahua Deng, Jaun Duchimaza-Heredia, Kasidet Jing Trerayapiwat, Thomas A. Niehaus, Yoshio Nishimoto, Benjamin Frank, Yongqian Zhang, Riley E. Lewis, Elaine A. Kappel, Robert J. Hamers, D. Howard Fairbrother, Galya Orr, Catherine J. Murphy, Qiang Cui and Christy L. Haynes (2021). Multicolor polymeric carbon dots: synthesis, separation and polyamide-supported molecular fluorescence. *Chemical Science*. Accepted. Read the online article [here](#).

CSN Media & Other Recognition

A recent CSN publication by **Clyde Daly, Jr.** (left) and **Rigoberto Hernandez** (right) ([Learning from the Machine: Uncovering Sustainable Nanoparticle Design Rules](#), *J. Phys. Chem. C*, 2020, 124, 13409) is being featured in a virtual special issue of the *Journal of Physical Chemistry* (“[Machine Learning in Physical Chemistry](#)”).



Paige Kinsley (Hamers group, top left), **Jaya Borgatta** (Hamers group, bottom left), and **Stephanie Mitchell** (Carlson group, bottom right) co-authored a [Lifeology](#) course called “[What happens to nanoparticles in the environment?](#)” They also interviewed [Paige Jarreau](#) (co-founder of Lifeology) and [Elfy Chiang](#) (Lifeology artist) for two Sustainable Nano podcast episodes. Elfy’s wonderful artwork for the course (including “Lee” the nanoparticle, top right) are available for the CSN to use in presentations and publications – contact Miriam for more information.



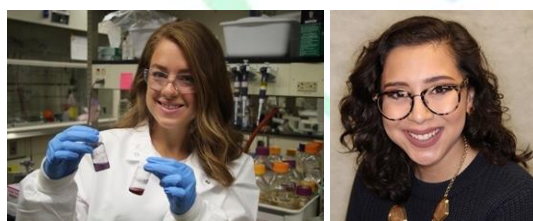
The CSN partnered with [Black in Nanotech](#) (#BlackInNano) in December to highlight [#BlackInNano Week](#). Black in Nanotech was co-founded by [Olivia Geneus](#) and [Jarriaun D. Streets](#). Olivia and Jarriaun wrote a CSN blog post ("[It's #BlackInNano Week!](#)") to highlight the event. You can learn more about the founders and other contributors to Black in Nanotech by visiting [blackinnanotechnology.org](#).



Former CSN postdoc **Clyde Daly, Jr.** (Hernandez group), who is now an Assistant Professor of Chemistry at Haverford College ([daly.sites.haverford.edu](#)) also participated in a panel discussion during #BlackInNano Week (bottom right in picture below). Another outcome of the event is that Clyde connected the CSN with Prof. Davita Watkins from the University of Mississippi (top middle in picture, [watkinsresearchgroup.org](#)), who sent some samples to **Bob Hamers** for analysis (Bob did the analysis himself!).



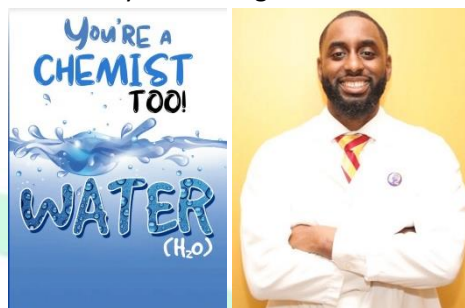
Stephanie Mitchell (Carlson group, top left) and **Becky Rodriguez** (Haynes group, top right) were featured in University of Minnesota Department of Chemistry online articles, "[Department's environment of diversity, collaboration, and caring enrich graduate school life](#)," and "[Rebeca Rodriguez conducts workshop for nontraditional undergraduates: Practical tips on research experiences for undergraduates](#)," respectively.



Stephanie Mitchell also led an effort to create 50 home-demo kits that were distributed through [Market Science](#) in the Twin Cities, though distribution happened through a library program rather than at farmer's markets due to the pandemic. The kits were based on the [chocolate demonstration](#) developed by **Nikki Hoang** (Murphy group, bottom), and included printed instructions, stickers, chocolate, and a small sheet of diffraction grating.



CSN alum **Donald White** (a.k.a. “DaChemist,” Ph.D. 2019, **Curry** group) has launched a new series of chemistry books for kids! [*You’re a Chemist Too*](#) is “a fully interactive chemistry book designed and narrated by DaChemist to help your child increase their chemical vocabulary, learn about experimental design, lab safety, nomenclature as well as how to write a lab report. Best of all, our book is easy to understand and covers all subject areas allowing your child to focus, and embrace learning.” *You’re a Chemist Too: Water* is [available now](#)! Future editions will focus on Food, Cosmetics, and Polymers.



Jason White, Howard Fairbrother and **Wade Elmer** (left to right) have been awarded a \$480,000 3-year grant through the USDA AFRI Nanotechnology for Agricultural and Food Systems Program for a grant entitled "Biodegradable polymer-nanoparticle composites for controlled release and targeted delivery of phosphorus during plant growth." This research started as a summer undergrad research project for Research Experience for Veterans student **Eric Bias** (second from right) at the Connecticut Agricultural Experiment Station in the summer of 2018 and was continued by **Leslie Sigmon** (Fairbrother group, far right) as part of her graduate research.



The Connecticut Agricultural Experiment Station has begun a new podcast series, which you can access on their [website](#), or through the [CAES YouTube channel](#).

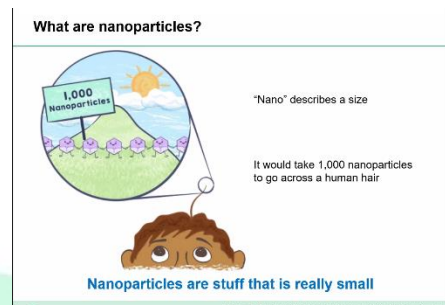
Lab Exchanges

Though travel is currently limited, we still encourage CSN researchers to arrange a virtual lab exchange! Here are just a few ideas to include in your visit: Attend group meeting, meet one-on-one with faculty, participate in a social event, go on a virtual lab tour, or arrange a writing retreat.



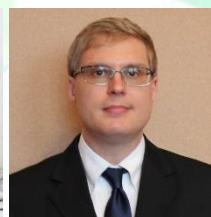
CSN Talks and Presentations

Jaya Borgatta (Hamers group) gave an outreach talk entitled “Nanotechnology & Agriculture” to a group of active retirees through [PLATO](#) on November 4. You can watch the talk by downloading the recording [here](#).



Eric Ostovich (Klaper group) gave a presentation, entitled “Determining the Effects of LiCoO₂ Nanosheets on the Net Carbon Biomass Production of *Raphidocelis subcapitata*,” at the Society of Environmental Toxicology and Chemistry (SETAC) North America 41st Annual Meeting in November.

Several CSN participants presented at the 9th Annual Sustainable Nanotechnology Organization (SNO) conference in November (left to right), including undergrad **Elizabeth Mensah** (SURE alum, Hernandez & Cui groups; “Coarse Grained Models of Nanoparticles at Biological Interfaces”), grad student **Nicholas Niemuth** (Klaper group; “Molecular-level Insight into Adverse Outcome Pathway for Complex Metal Oxide Nanomaterials Exposure Using *Chironomus riparius*”), and postdoc **Su-Ji Jeon** (Girado group; “Monitoring Plant Health with Near-Infrared Fluorescent H₂O₂ Nanosensors”).



Jason White & Wade Elmer were invited to present their work on nano-enabled strategies to improve crop yield at a [United Nations Economic Commission for](#)

[Africa symposium on Agricultural and Environmental Nanotechnology Research and Innovation](#), which was held in Addis Ababa, Ethiopia.

Juan Pablo Giraldo, Jason C. White, and Wade Elmer (left to right) attended the 4th International Conference on Nanobiotechnology for Agriculture (NanoForAgri) virtual conference in November. The meeting was hosted by The Energy Research Institute of India (TERI) and the Deakin Nanobiotechnology Research Centre New Delhi.



Jason White has been busy! He also presented his work at the NanoInnovation 2020 Conference & Exhibition, the Connecticut Environment Council (CTEC) Annual Meeting and Education Program, the Amity Institute of Microbial Technology (Amity University, Noida, India), the 9th Annual Sustainable Nanotechnology Organization (SNO) conference, the Materials Innovation for Sustainable Agriculture (MISA) 2020 Symposium (University of Central Florida), and at the SETAC North America 41st Annual Meeting. He also gave lectures for a Sustainable Innovation of Microbiome Applications in the Food System (SIMBA) on-line training course, the Yale University School of Public Health Department of Environmental Health Sciences, and **Zeev Rosenzweig's** Sustainable Nanotechnology class at UMBC.



Latest from Sustainable Nano

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

CSN blog posts & podcast episodes

- Podcast episode: [Shine Bright like a Diamond... Inside of a Worm](#) - interview with **Zack Jones** by **Paige Kinsley** (Hamers group)
- Blog post: [Sticking with Chemistry on Mole Day!](#) by **Miriam Krause**
- Blog post: [Celebrating Native American/Indigenous History Heritage Month with notable STEMists](#) by **Becky Rodriguez** (Haynes group)
- Blog post: [It's #BlackinNano Week!](#) by guest authors Olivia Geneus & Jarriaun Streets
- Podcast episode: [Beyond Jargon to Empathy: Lifeology Part 1](#) – interview with Paige Jarreau by **Stephanie Mitchell** (Carlson group) & **Jaya Borgatta** (Hamers group)
- Podcast episode: [Retelling a Story Through Illustrations: Lifeology Part 2](#) – interview with Elfy Chiang by **Paige Kinsley** (Hamers group) & **Stephanie Mitchell** (Carlson group)



Fun!



The Hamers group went apple picking before the cold Wisconsin weather trapped them indoors.



Haynes group also visited an apple orchard. When asked about letting weather trap them indoors, they laughed.



CSN Alumni **Jared Bozich** (left, Ph.D. 2016, **Klaper** group) and **Kelly Zhang** (right, Ph.D. 2020, **Hamers** group) had a mini All-hands meeting in New Jersey, where they both landed after their time in the center (Jared is an Environmental Toxicologist at International Flavors and Fragrances and Kelly is a Senior Scientist at Merck). Also shown is **Jackson**, who didn't ask to be part of the photo.

Team Shaken not Stirred (right) pulled off a win in the final round of CSN trivia night on Dec 30, thanks to Christy's son Clark and his impressive knowledge of Pokémon.



Opportunities

Reminder: The CSN can help cover costs for SPRINGs to attend professional development conferences. Contact Miriam for more information!

Pathways to Science is a great resource for finding a variety of programs and employment opportunities, including paid summer research experiences for undergraduates (the CSN advertises our summer programs through their website), graduate fellowships, mentoring, and professional development opportunities, postdoc opportunities, and more. You can find these resources and sign up for notifications about new opportunities at pathwaystoscience.org.



2021 Merck Award for Underrepresented Chemists of Color. Application Deadline: February 28, 2021.

Awardees will receive: Merck mentor and will network with other winners and Merck scientists. Travel expenses, meals, and accommodation for the 2021 Award Symposium, hosted at the Merck Rahway site. Opportunity to present their research at the 2021 Award Symposium.

- Eligibility: Third year graduate students (minimum) or postdocs doing research in organic, medicinal, analytical, chemical biology, computational, or physical chemistry at a US-based institution. Underrepresented groups in chemistry, including Black, Latinx, Native Americans, Alaska Natives, South and Southeast Asian, Middle Eastern, Native Hawaiian, and other Pacific Islanders.
- Application materials: CV, including mailing address. One-page personal statement describing your eligibility and how this award will impact your career in science. Research summary (maximum two pages). Faculty member's recommendation letter sent separately.
- To apply or for more information, please email chemistsofcolor@merck.com.

IRACDA NY-CAPS program. Application Deadline: February 1, 2021.

The IRACDA NY-CAPS program aims to facilitate the progress of diverse, highly trained biomedical and behavioral scientists toward research and teaching careers in academia. To meet this goal, we combine: A 3-year traditional mentored postdoctoral research experience with an opportunity to develop academic skills, including teaching, through workshops and mentored teaching assignments at a partner institution. Applicants must be a new PhD, MD, or PhD/MD or have no more than 2 years of postdoctoral training, and be U.S. Citizen or Permanent Resident. Start Date: On or after May 1, 2021 (degree completion required prior to start). For more information about IRACDA NY-CAPS, including eligibility and how to apply, please visit our [program website](#). If you have any questions please contact us at IRACDA@stonybrook.edu. Note: CSN alum Natalie Hudson-Smith is currently in the program and is happy to talk with anyone who has questions. Her email address is natalie.hudson-smith@stonybrook.edu.



The Summer Science Program for high school students is hiring undergrad & graduate TAs for their 6-week biochemistry program. Teaching Assistant and Residential Mentors are tutors and instructors, assisting participants in using equipment and software, and with problem sets, under the direction of the Academic Director. Equally important is their simultaneous role as residential advisors and personal mentors, supervising participants and organizing recreational and social activities, under the direction of the Site Director. The salary is about \$1,000 per week for about 6 1/2 weeks. For more information see summerscience.org/employment

A colleague at **Ford Motor Company** has shared two job postings that may be of interest: [Research Scientist – Surfaces and Coatings](#) and [Virtual Manufacturing – Coating Processes](#)

Looking Ahead

Mark your calendars! The virtual **CSN Spring All-hands meeting** will take place on **March 23-24, 2021**.

AAAS Communicating Science and Public Engagement Fundamentals workshop: February 25, 2021, 1:00 pm - 4:00 pm ET.

The introductory-level, three-hour Science Communication and Public Engagement Fundamentals module introduces scientists and engineers to the latest science communication research and basic best practices for engaging with the public. Participants are introduced to the AAAS Framework for Public Engagement which can help them develop individual plans that include a public engagement goal and address ways to engage a relevant audience with tailored messages. Participants also brainstorm an engagement scenario and identify next steps to put their plans into action. This workshop is designed for scientists and engineers who don't have much experience with public engagement, although experienced engagers may find it useful. For more information see aaas.org/page/attend-workshop

[NNCI Research Community for Nanotechnology Convergence](#) virtual half-day workshop focused on *Nanotechnology for Food and Nutrition Security*: March 9th, 2021.

We invite you to join the discussion to inform facility efforts to support food and nutrition security. We encourage attendees from ***all disciplines*** including plant science, genetics, policy, economics, risk assessment, law, engineering, biology, etc. Two plenary talks from leaders in this field, Dr. Antje Bäumner (Universität Regensburg) and Dr. Hongda Chen (USDA), will kick off the event. Attendees will then discuss a variety of topics (e.g. sensors, pest management, nutrition management, animal disease) in small groups. All attendees will reconvene to discuss major themes and ideas. The findings will be organized and formalized to produce a workshop report that will guide future efforts of nanotechnology core facilities. Learn more and register at: go.ncsu.edu/nano-food-security



Science Talk Annual Conference: March 24-26, 2021

Although the first day of Science Talk conflicts with the CSN All-Hands meeting, it is possible to do both - contact Miriam for more details. Connect with your community of professional science communicators at SCIENCE TALK '21 over three days of workshops, panel discussions, presentations, and networking opportunities. More information at sciencetalk.org/science-talk-21 Early bird registration is available until January 25, 2021.

National Postdoctoral Association Annual Conference: April 15-16, 2021.

The NPA Annual Conference is the largest national conference and networking event dedicated to the postdoctoral community. Conference attendees - postdoctoral scholars, administrators, faculty, and representatives from disciplinary societies, industry, and corporations - are provided with the opportunity to gather and enhance their professional development and leadership skills. For more information see nationalpostdoc.org/page/2021AC

ACS Green Chemistry Institute and Conference: June 14-18, 2021

The conference will feature over 30 high-quality technical sessions, keynote speakers, poster sessions, as well as opportunities to engage online and network. Join the global sustainable and green chemistry and engineering community as we focus on this year's theme, Sustainable Production to Advance the Circular Economy. **Abstract submission deadline is February 15, 2021.** For more information see gcande.org



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).

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 Safety Verification form: [link](#)
- CSN Shipping Addresses: [link](#)

CSN SuggestionOx (Completely Anonymous Feedback to Admin)

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

Admin emails

- Bob (rjhamers@wisc.edu)
- Christy (chaynes@umn.edu)
- Miriam (mkrause@umn.edu)
- Mike (mpschwartz@wisc.edu)



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