



ISOTOPICS

The Cleveland Section of the American Chemical Society

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On Deck:

Education Night

Wed. April 18, 2018

Cleveland State University

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March Meeting Notice

Meeting-in-Miniature (MIM)

Wednesday, March 28, 2018

Oberlin College

1:30 pm	Registration starts at the Science Center 119 Woodland St. Oberlin, OH 44074
2:30 pm	Talks at the Science Center
5:30 pm	Dinner and Plenary talk at the Hotel at Oberlin 10 E College St., Oberlin, OH 44074

Plenary Talk: “Using 2D Nanoparticle Surfactants to Build Hybrid Materials.”

by Dr. Emily Pentzer, Case Western Reserve University

Abstract: The interface between two fluids is not only important for defining reactivity of dislike materials, but is also applicable for the preparation of stable higher order structures. Recently, the Pentzer lab developed 2D carbon-based nanosheets that assemble at different fluid-fluid interfaces including oil-water, oil-oil, and ionic liquid-water and demonstrated the use of these Pickering emulsions as templates for the preparation of higher order hybrid structures. Graphene oxide (GO) and its functionalized analogues are used as the 2D particle surfactant, and are especially attractive given they have properties distinct and complimentary to the more commonly studied spherical and rod-like counterparts, and because these nanosheets are multifunctional (e.g., antimicrobial, good gas barriers, precursor to electrically conductive nanosheets, etc.). Recent advances from the Pentzer lab will be reported, including preparation of Janus nanosheets, water-sensitive reactions in oil-in-oil emulsions, GO capsules filled with ionic liquid for supercapacitor electrodes, GO capsules for compartmentalization of phase change materials, and GO coatings for 3D printable polymers to prepare conductive structures. This work makes use of fundamental organic chemistry reactions and thus gives access to unique structures and assemblies of interest for a broad range of applications in a scalable fashion.

DINNER RESERVATIONS: A buffet style dinner will be served. If you have registered for the event, you will receive an email to confirm your attendance and dinner RSVP by March 12th. If you wish to only attend the plenary talk and dinner, please RSVP to zhua@oberlin.edu by March 14th. The ACS accepts credit cards, cash, and/or checks made out to “Cleveland ACS.” Cost: \$20 for members & guests; \$10 for retirees & unemployed; \$5 for students and FREE for student presenters and volunteers.

Parking:

We recommend that you park at the Athletic Fields lot (Woodland St & Union St) during the day events. For the dinner and plenary talk, you may park at the Hotel parking lot.

Speaker Bio:

Emily Pentzer received a BS in chemistry from Butler University (2005) and PhD in organic chemistry from Northwestern University (2010), where her thesis work focused on metathesis routes for preparing and polymerizing unsaturated medium-sized lactones and lactams under the direction of Professor Sonbinh T. Nguyen. She then worked with Professor Todd Emrick in the Polymer Science and Engineering Department at UMass Amherst where she focused on the synthesis and assembly of electronically active materials for organic photovoltaics as part of a DOE EFRC on Polymer-Based Materials for Harvesting Solar Energy. In 2013, Dr. Pentzer joined the faculty at Case Western Reserve University in the Department of Chemistry and received a secondary appointment in Macromolecular Science and Engineering in 2015. Her research uses organic synthesis to access new materials and assemblies as a route to understand structure-property relationships and access electronic properties not possible with current state-of-the-art systems. Dr. Pentzer has received several awards including the NSF-CAREER award (2016) and PMSE Young Investigator Award (2017). She currently serves as an Associate Editor for the RSC journal *Polymer Chemistry* as well as the publicity chair for the Polymer Division (POLY) of the American Chemical Society. She is a faculty mentor through for the Beckman Scholars Program at CWRU and was recently named a “must see” presenter at the national meeting of the American Chemical Society in New Orleans.

**Announcement: Call for Abstracts: 2018 Meeting in Miniature**

Dear faculty and students,

We wish to announce that the deadline to register for the 2018 Meeting-in-Miniature has been **extended to Monday 12 March, 5:00 pm.**

We hope you will use this week to:

- 1) Consider attending the 2018 MIM sponsored by the Cleveland section of the ACS on Wednesday March 28, beginning at 2:30 pm, at Oberlin College, Science Center. The plenary lecture and dinner will be at the Hotel at Oberlin.
- 2) Consider presenting your work with 15-minute oral presentation at the 2018 MIM.

Register for the meeting and/or submit your abstract at:

https://oberlin.qualtrics.com/jfe/form/SV_4SzkGHgmPZYdBYh

For more information, please go to the Cleveland ACS website:

http://www.csuohio.edu/sciences/dept/cleveland_acs/MIM.htm

Announcement: Lecturer position at CWRU

THE DEPARTMENT OF CHEMISTRY, CASE WESTERN RESERVE UNIVERSITY invites applications for a full-time lecturer position starting August 20, 2018. Teaching responsibility will be determined based on the qualifications of the applicants but may include lecture and/or laboratory courses in general and organic chemistry. Lecturers are expected to teach the equivalent of two courses per semester, which may have multiple sections. A Ph.D. in chemistry and demonstrated excellence in teaching lecture courses in elementary inorganic, organic, and biochemistry for nursing students and laboratory courses in general and organic chemistry are required. A letter of application

and CV should be sent by March 26, 2018; in addition, candidates should arrange to have three letters of reference sent by e-mail to chemjobs@case.edu or Via USPS to Chemistry Search Committee, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, OH 44106-7078 or courier service to Chemistry Search Committee, Clapp Hall Room 212, 2080 Adelbert Road, Cleveland, OH 44106-7078.

In employment, as in education, Case Western Reserve University is committed to Equal Opportunity and Diversity. Women, veterans, members of underrepresented minority groups, and individuals with disabilities are encouraged to apply.

Case Western Reserve University provides reasonable accommodations to applicants with disabilities. Applicants requiring a reasonable accommodation for any part of the application and hiring process should contact the Office for Inclusion, Diversity and Equal Opportunity at 216-368-8877 to request a reasonable accommodation. Determinations as to granting reasonable accommodations for any applicant will be made on a case-by-case basis.

Announcement: 2 Week chemistry modeling workshop for high school chemistry teachers

There will be a 2 week modeling instruction workshop for high school chemistry teachers at Elyria HS June 18-29, 2018. The workshop is lead by Larry Dukerich and Holly McTernan. The cost is \$600. Registration: <https://www.ewebliife.com/prm/AMTA/rsvp-signup/apply?record=1160>

For more information, please contact Jeremy Secaur – secaurjeremy@elyriaschools.org

From ACS Discoveries: Longer-lasting fragrance is just a shampoo away, thanks to peptides

ACS Applied Materials & Interfaces.

Many people select their shampoo based on

smell. Unfortunately, that scent usually doesn't last long on hair. Now, one team reports in *ACS Applied Materials & Interfaces* a new way to help the fragrance "stick" to hair longer.

Fragrances are one of the most expensive shampoo ingredients, but most of these floral- or fruity-smelling compounds evaporate rapidly or are easily washed away when surfactants, such as shampoos, are used. Currently, manufacturers try to keep the smells around longer by incorporating delivery systems. One such system is "profragrances" in which a polymer is attached to the scent compound and is broken off once shampooing starts, and another is encapsulation of the scent compound with polymers. Although these approaches have been shown to be effective, they still don't help fragrances adhere to the hair for long periods. Harm-Anton Klok, Andreas Herrmann and colleagues are now looking at ways to promote the deposition of scents onto hair.

The group identified a cyclic peptide that could bind to hair under shampooing conditions, which meant a low pH and in the presence of surfactants. Then, the peptide was connected to the two popular delivery systems: a microcapsule and a profragrance model polymer. They found that the peptide efficiently deposits both types of systems to hair. The researchers say that for the polymer and microcapsule tests, those that were bound to a peptide were loaded about 5 and 20 times more efficiently, respectively, onto hair than those that lacked a peptide. This increased deposition resulted in a stronger fragrance smell on hair for up to 24 hours after shampooing.