



# American Chemical Society Susquehanna Valley Section

## NOVEMBER 2013 NEWSLETTER

The four hundred and thirteenth meeting of the American Chemical Society Susquehanna Valley Section will be held on Wednesday, November 6, 2013 in Room G09 of the Heim Building on the campus of Lycoming College. The meeting will begin at 7:00 PM and will be preceded by dinner at 5:15 PM at the Bullfrog Brewery at 231 West Fourth Street, Williamsport, PA. The speaker will be Dr. Raymond E. Schaak of Pennsylvania State University.

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### ***"Total Synthesis of Un-Natural Products: Chemical Concepts for Designing Complex Nanoscale Solids"***

Dr. Raymond E. Schaak  
Department of Chemistry  
Pennsylvania State University  
State College, PA

Synthesis is the gateway to new molecules and materials, and design strategies that provide a rational synthetic framework for predictably targeting desired products are critical for accessing increasingly complex structures. We have been developing a library of chemical design tools for nanoscale solid-state materials that conceptually parallels some of the guiding principles that underpin molecular organic synthesis. This talk will introduce the concept of "nanoscale total synthesis" for colloid hybrid nanoparticles, which are single multi-functional particles that contain multiple domains fused together with pre-defined spatial organization. Chemical concepts that underpin the "total synthesis" of complex hybrid nanoparticles include chemoselective and regioselective reactions, orthogonal reactivity, protection/deprotection, and substituent effects, as well as the stepwise application of a growing library of nanoparticle-based chemical reactions that include oxidation, reduction, replacement, exchange, addition, elimination and coupling reactions.

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Dr. Raymond Schaak is a Professor of Chemistry and a member of the Materials Research Institute at Pennsylvania State University. Dr. Schaak received a B.S. degree in chemistry from Lebanon Valley College in 1998. In 2001, he received a Ph.D. in materials chemistry from Penn State University under the direction of Professor Thomas Mallouk, where he demonstrated the concept of "solid-state retrosynthesis" for the stepwise and predictable topotactic synthesis of bulk and nanostructured perovskite-based oxide materials. From 2001 to 2003, he was a postdoctoral research associate with Professor Robert Cava at Princeton University, where he worked on the synthesis and physical property characterization of metal carbide, boride, phosphide, oxide and alloy superconductors. In 2003, Dr. Schaak began his independent career as an Assistant Professor of Chemistry at Texas A&M University. In 2007, he moved to Penn State University as an Associate Professor of Chemistry, and was promoted to Professor in 2011. His research group focuses on developing new chemical strategies for the synthesis of nanoscale solid-state materials and applying these materials to problems at the forefront of modern materials research. Dr. Schaak has received several prestigious awards, including an NSF Graduate Research Fellowship (1999), an NSF CAREER Award (2006), a Beckman Young Investigator Award (2006), a DuPont Young Professor Grant (2006), a Sloan Research Fellowship (2007), a Camille Dreyfus Teacher Scholar Award (2007), a Research Corporation Scialog Award for Solar Energy Conversion (2010), and the National Fresenius Award (2011). Dr. Schaak served as Awards Committee co-chair of the American Chemical Society's Division of Inorganic Chemistry (ACS DIC) from 2007 – 2011, and currently serves as chair of the Nanoscience subdivision of ACS DIC, as a Member of the Editorial Advisory Board of *Journal of Solid State Chemistry* and as an Associate Editor of *ACS Nano*.

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DINNER: 5:15 PM at the Bullfrog Brewery (231 West Fourth Street, Williamsport, PA). Please call or email reservations to Debbie Smith (570-321-4180 or [smithdeb@lycoming.edu](mailto:smithdeb@lycoming.edu)) by November 1.

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**DIRECTIONS TO LYCOMING COLLEGE:**

From I-80, take U. S. Route 15 north. Travel approximately 15 miles to Williamsport. Continue over the Market Street Bridge (stay in left lane) and follow the signs for the Business District. Go to the fourth traffic signal and turn right onto Little League Boulevard. Go one block east and turn left at the stop sign onto Mulberry Street. At the next traffic signal, turn right onto Washington Boulevard. The entrance to the Heim Building parking lot will be the first right (Park in the row closest to the building).

From I-180/US-220, exit onto Market Street (Exit 27A). Turn left from the exit ramp at the traffic signal and follow Market Street north into the city. Go to the third traffic signal and turn right onto Little League Boulevard. Go one block east and turn left at the stop sign onto Mulberry Street. At the next traffic signal, turn right onto Washington Boulevard. The entrance to the Heim Building parking lot will be the first right (Park in the row closest to the building).

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**DIRECTIONS TO THE BULLFROG BREWERY RESTAURANT**

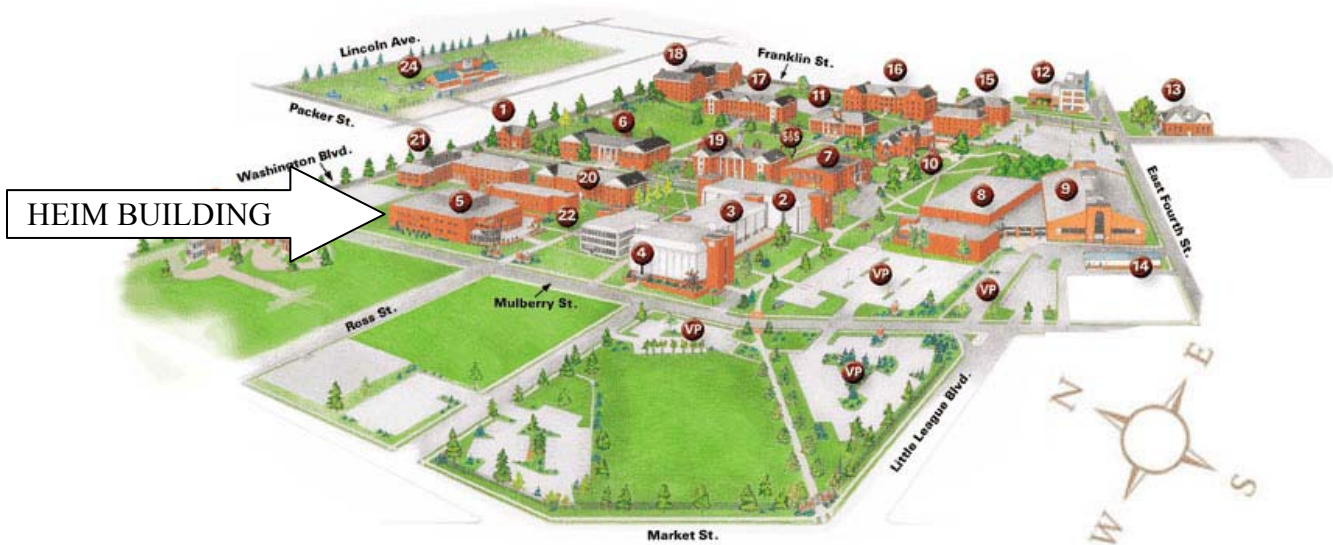
From I-80, take U. S. Route 15 north. Travel approximately 15 miles to Williamsport. Continue over the Market Street Bridge (stay in left lane) and follow the signs for the Business District. At the third traffic signal, turn left onto Fourth Street. Follow Fourth Street west to the third traffic signal, which is Hepburn Street (there will be a movie theater on the right at the corner). Parking is available along Hepburn Street (on the street and in a public parking lot). The Bullfrog Brewery is directly next to City Hall on Fourth Street, one block east of Hepburn Street.

From I-180/US-220, exit onto Market Street (Exit 27A). Turn left from the exit ramp at the traffic signal and follow Market Street north into the city. At the second traffic signal, turn left onto Fourth Street. Follow Fourth Street west to the third traffic signal, which is Hepburn Street (there will be a movie theater on the right at the corner). Parking is available along Hepburn Street (on the street and in a public parking lot). The Bullfrog Brewery is directly next to City Hall on Fourth Street, one block east of Hepburn Street.

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**DIRECTIONS FROM THE BULLFROG BREWERY RESTAURANT TO LYCOMING COLLEGE:**

Follow Hepburn Street north to the traffic signal at Little League Boulevard (0.2 mi). Turn right onto Little League Boulevard and follow it until it ends at Mulberry Street (0.3 mi). Turn left at the stop sign onto Mulberry Street. At the next traffic signal, turn right onto Washington Boulevard. The entrance to the Heim Building parking lot will be the first right (Park in the row closest to the building).



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Section Web Page: <http://departments.kings.edu/SusquehannaValleyACS>

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