



American Chemical Society Susquehanna Valley Section

NOVEMBER 2015 NEWSLETTER

The four hundred and twenty seventh meeting of the American Chemical Society will be held on Wednesday, November 11th, 2015 in Room G09 of the Heim Building on the campus of Lycoming College. The meeting will begin at 7:30 PM and will be preceded by a dinner at 5:00 PM. The speaker will be Dr. Douglas Hines of Lycoming College.

“Nanomaterials and Photovoltaic Applications”

Dr. Douglas Hines
Department of Chemistry
Lycoming College
Williamsport, PA

Due to increasing demand for a source of renewable energy, the scientific community has made a major thrust toward the development of new materials for use in photovoltaic devices (PVs). Semiconductor quantum dots (QDs), a specific brand of nanoparticle, are currently under investigation for use in PV technologies due to their low processing cost and their potential to achieve high device efficiencies. The quantum dot sensitized solar cell (QDSC) uses semiconductor QDs to sensitize a wide-band gap semiconductor, such as titanium dioxide (TiO₂), to visible light. The scaled-up fabrication of QDSCs is projected to be less energy intensive than the typical high-energy device fabrication methods associated with high purity single-crystal silicon PVs. Presented herein are the basics of QDSC design, structure and function as well as a discussion of the excited state properties unique to the nanomaterials used in these types of devices. Also discussed will be a few proposed ideas for future research with regards to the use of environmentally friendly materials in QDSCs. This includes making a push toward low-toxicity metals and less volatile solvents for suspending and synthesizing semiconductor quantum dots.

Dr. Douglas Hines is currently a Visiting Assistant Professor of Chemistry at Lycoming College with a background in the physical chemistry of photovoltaic materials. He received his B.S. from Baldwin Wallace University and his PhD from the University of Notre Dame. His doctoral work was performed in the lab of Dr. Prashant Kamat.

DINNER: The lecture will be preceded by dinner at 5:00 pm at the [Bullfrog Brewery](#). Please call or email reservations to Debbie Smith (570-321-4180 or smithdeb@lycoming.edu) by Friday, November 6.

DIRECTIONS TO THE BULLFROG BREWERY RESTAURANT:

The brewery is at 229 West Fourth Street, Williamsport PA 17701. 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 4th Street. Follow 4th 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 4th 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 4th Street. Follow 4th 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 4th Street, one block east of Hepburn Street.

DIRECTIONS FROM THE BULLFROG BREWERY RESTAURANT TO THE COLLEGE:

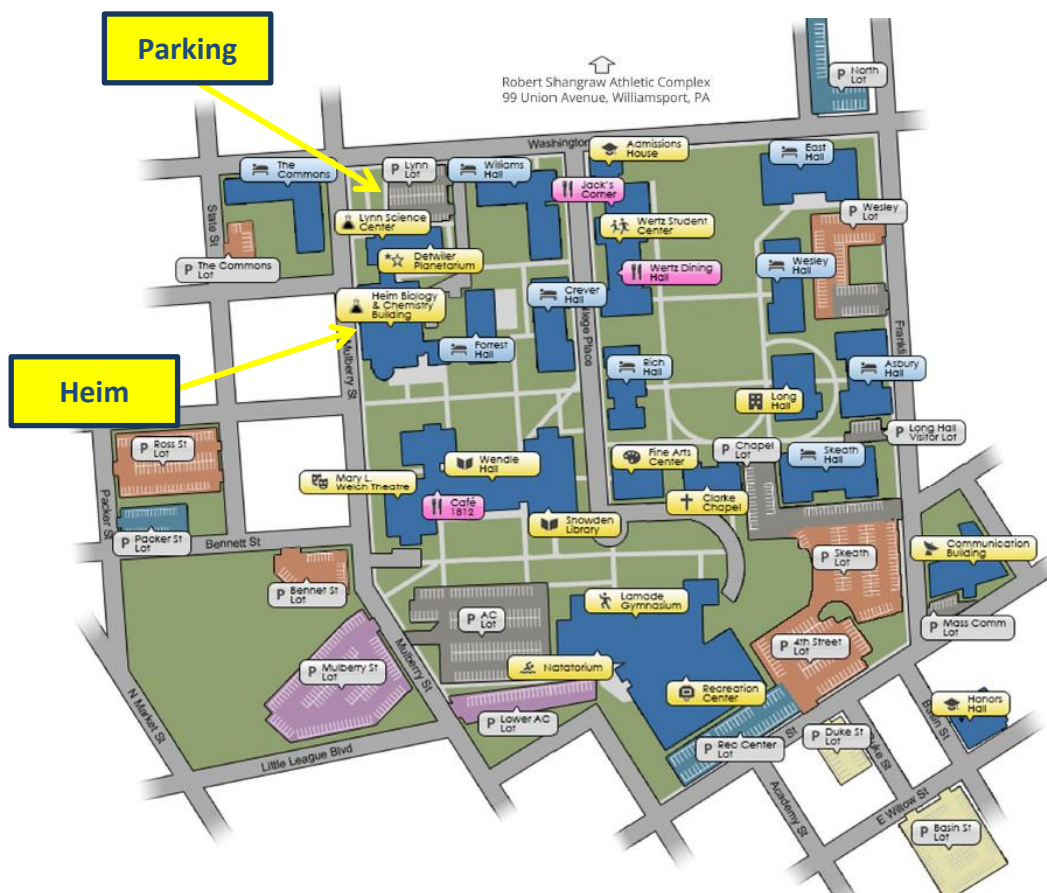
The college is at 500 Mulberry Street Williamsport, PA 17701. Follow Hepburn Street north to the traffic signal at Little League Boulevard (0.2 mi). Turn right onto Little League Boulevard and follow it until it ends at Mulberry Street (0.3 mi). Turn left at the stop sign onto Mulberry Street. At the next traffic signal, turn right onto Washington Boulevard. The entrance to the Heim Building/Lynn Science Center parking lot will be the first right. Proceed through the main doors into the Heim Building. Take the elevator down to the ground floor, where you will exit within sight of the doorway to room G09.

DIRECTIONS TO THE COLLEGE

The college is at 500 Mulberry Street Williamsport, PA 17701. 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 as shown in map below. Take the elevator down to the ground floor, where you will exit within sight of the doorway to room G09.

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. Take the elevator down to the ground floor, where you will exit within sight of the doorway to room G09.

You can also see <http://www.lycoming.edu/admissions/ourCampus/directionsToCampus.aspx>



SECTION NEWS:

2016 LOCAL SECTION ELECTIONS:

The section is still in search of a chair-elect. Once a candidate is found an electronic ballot will be sent through email to vote.

CHEMISTRY TEACHER OF THE YEAR:

Mr. Pat Martino and Dr. James Swan presented the 2015 Outstanding Chemistry Teacher award to Mr. Robert Valente of Marian Catholic High School on October 13. Pat Martino (chair of our National Chemistry Week committee) is a former student of Mr. Valente.

MARM 2016:

The 44th MARM is scheduled for June 9-12, 2016 and is being hosted by the New York Section of the American Chemical Society. It will be held at the College of Mount Saint Vincent, Riverdale, NY. Many of the sessions have been planned and listed; see their website for more details: <http://marmacs.org/2016/>

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

Please send any comments about the monthly newsletter to Ron Supkowski, Section Secretary
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