# American Chemical Society Susquehanna Valley Section

## **April 2016 NEWSLETTER**

The four hundred and thirtieth meeting of the Susquehanna Valley Section of the American Chemical Society will be held on Wednesday, April 13<sup>th</sup>, 2016 in Burke Auditorium in the McGowan School of Business on the campus of King's College. The meeting will begin at 7:00 PM and will be preceded by dinner at 5:30 PM. The speaker will be Dr. Leah B. Cleary of Pfizer, Inc. in Groton, CT.

## "Lewis-Acid Activation of Sulfonyl Fluorides for Sulfonamide Synthesis: Enabling a New Monomer Set By Promoting Reactivity with Aliphatic and Aryl Amines"

Dr. Leah B. Cleary
Neuroscience Unit in World Wide Medicinal Chemistry
Pfizer Inc.
Groton, CT

Sulfonyl fluorides have emerged as important biological probes and useful synthetic tools. Because of their relative stability to nucleophiles as compared to their sulfonyl chloride counterparts, sulfonyl fluorides are more amenable to in vitro/in vivo studies and have been successfully used for protein-ligand conjugation. Furthermore, sulfonyl fluorides have an increased shelf-life verse the corresponding chlorides, which allows for long-term storage in monomer sample banks and potentially wider vendor availability. Although the enhanced stability facilitates selective functionalization, sulfonyl fluorides are often unreactive under mild conditions, especially when reacting with weak nucleophiles (i.e. aniline) and thus have had limited synthetic use. We present a new method for the activation of sulfonyl fluorides employing Lewis acid catalysis to enable the synthesis of sulfonamides using a common set of conditions. The mild reaction conditions are highly functional group tolerant and selective for nitrogen nucleophiles. This new method offers the potential for the tuning of reactivity in a biological setting and is expected to positively impact the current alkyl sulfonyl halide monomer set.

$$\begin{array}{c} O O \\ R^{1} \stackrel{>}{S} \stackrel{>}{F} \\ - \text{ water stable} \\ - \text{ shelf stable} \\ - \text{ weakly electrophilic} \\ \end{array} \begin{array}{c} + HN \stackrel{R^{3}}{R^{2}} & \frac{Ba(NTf_{2})_{2} \left(25 \text{ mol}\%\right)}{H_{2}O \text{ or DMF, } 60 \, ^{\circ}\text{C}} \\ 12 \text{ h} \\ \hline \\ DMF, 60 \, ^{\circ}\text{C} \\ 12 \text{ h} \\ \hline \\ (X = \text{CI - SM decomposes}) \\ (X = \text{F - } 75\% \text{ yield}) \\ \end{array}$$

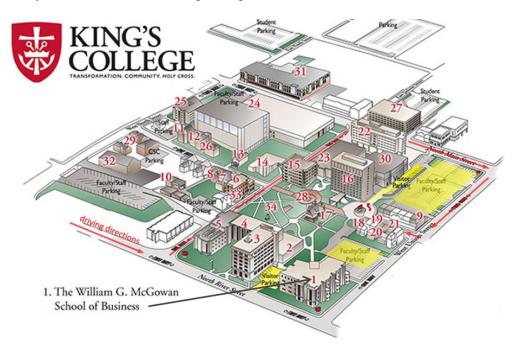
Leah Cleary is a California native and grew up in Pioneer, CA. She obtained her Bachelors of Science degree in Chemical Biology from the University of California, Berkeley in 2008, during which she studied conjugate allylations under the tutelage of Prof. Dirk Trauner. After graduation she attended graduate school at the University of California, Irvine where she joined Prof. Ken Shea's laboratory. There she focused on the total synthesis of welwitindolinone alkaloids as well as methodological and computational studies of the acylnitroso type 2 intramolecular Diels-Alder reaction. After obtaining her PhD in 2013, she joined the laboratory of Prof. Sarah Reisman as a postdoctoral researcher where her focus was on the nickel catalyzed asymmetric reductive cross-coupling of  $\alpha$ -chlorocarbonyl compounds with aryl iodides. She is currently a Senior Scientist at Pfizer working in the neuroscience unit in world wide medicinal chemistry.

**DINNER:** 5:30 PM at the Postupack Conference room in the McGowan School of Business. The dinner will be \$15 payable by cash or check. Please call or email reservations to Anne Szklarski (anneszklarski@kings.edu or 570-208-5900x5737) by Monday, April 11.

#### **DIRECTIONS TO KING'S COLLEGE:**

Address: 133 N River St. Wilkes-Barre PA 18711

- From Route I-81, take Exit 170B which will put you on Route 309 North.
- Follow Route 309 and take exit 3 (Wilkes-Barre/Plains).
- Turn left off the exit ramp onto North River Street. Proceed about 1.5 miles, and you will see the Luzerne County Courthouse on your right. Continue through the light at the courthouse.
- Turn left at the next street, West Jackson Street. There is no traffic light at West Jackson Street, so do not go as far as the next light.
- Go through the stop sign, and at the first traffic light turn right onto North Main Street.
- Turn right at the next light onto West Union Street.
- Proceed to the next light and turn right onto North Franklin Street.
- The Visitors Lot is located to your right off the cul-de-sac.
- The lots colored yellow also have limited parking available.



#### **SECTION NEWS:**

## 2016 SUSQUEHANNA VALLEY SECTION CHEMISTRY HIGH SCHOOL EXAM:

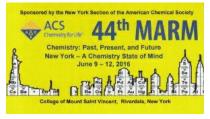
The annual exams, hosted by the Susquehanna Valley Section of the ACS, will be held Saturday, April 23. Students from across the section are nominated by their teachers to take this exam. Students with high scores in our different districts receive a David H. Frederick Memorial Award in High School Chemistry at our Awards Banquet on Wednesday, May 4 at the <a href="Pine Barn Inn">Pine Barn Inn</a> in Danville, PA. See the website for details.

#### 2016 CHEMISTRY OLYMPIAD:



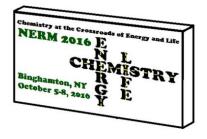
The local 2016 U.S. National Chemistry Olympiad (USNCO) will be held on April 23 at Marywood University. If you know of a truly outstanding chemistry student please submit his or her name to our screening committee by the end of March. See the <u>website</u> for more details.

#### MARM 2016:



The 44<sup>th</sup> 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.

#### NERM 2016:



The 41<sup>st</sup> NERM is scheduled for October 5-8, 2016 and is being hosted by the <u>Binghamton Section</u> of the American Chemical Society. It will be held in downtown Binghamton, NY. They have made a call for papers with a deadline of August 8; see their <u>website</u> for more details.

#### MARM 2017:



The Susquehanna Valley Section is co-hosting MARM 2017 with the <u>Lehigh Valley Section</u>. It will be held June 4-6, 2017 in Hershey, PA. Interested symposia organizers should contact the program chair, <u>David Rovnyak</u>. For other volunteer opportunities and questions, please contact the meeting cochair, <u>Dee Casteel</u>.

#### LOCAL ACADEMIC TALKS:



Bucknell University announces their spring 2016 Chemistry Department Seminar Series. The schedule through April is listed below:

### April 6 Sarah Bradley & Conor Flynn ~ Bucknell graduate students

SB: "Stability of the colloidal phase of abandoned mine drainage in Shamokin, PA"

CF: "Measurement of carbon dioxide vibrational self-quenching rates"

April 13 & 20 Chem 371 Student Presentations

## **April 27 Tyler Fulton, Bucknell University** ~ BS/MS Student

"The Development of Copper Mediated 1,4-Conjugate Addition

Reactions towards Complex Molecule Synthesis"

#### **NATIONAL ACS NEWS:**

#### **ACT4CHEMISTRY:**

Legislation that may impact the chemical enterprise comes before Congress on a regular basis, and ACS is committed to keeping its members informed and encouraging them to weigh in on high-priority issues. One of the main ways the ACS does this is through Act4Chemistry. To learn more please visit their website or email advocacy@acs.org.

#### **NATIONAL MEETINGS:**

The 2016 fall national meeting will be held in Philadelphia, Pennsylvania from August 21-25. See the website for details.

#### SERVICE ON NATIONAL ACS COMMITTEES:

It is time to begin the process of making appointments to ACS Council-related committees for 2017. If you are interested in serving on an ACS Committee, the online committee preference form for committee assignments are now open from March 28-June 10, 2016 at https://www.yellowbook.acs.org.

Some committees require their members to be Councilors. But many committees do not have a restriction for membership. Committees that are open to non-councilors are:

Committee on Analytical Reagents (CAR)

Committee on Minority Affairs (CMA)

Committee on Budget and Finance (B&F)

Committee on Nomenclature, Terminology and Symbols (NTS)

Committee on the Chemical Abstracts Service (CCAS)

Committee and Patents and Related Matters (CPRM)

Committee on Chemical Safety (CCS)

Committee on Professional Training (CPT)

Committee on Chemistry and Public Affairs (CCPA) Committee on Project SEED (SEED)

Committee on Chemists with Disabilities (CWD)

Committee on Public Relations and Communications (CPRC)

Committee on Community Activities (CCA)

Society Committee on Education (SOCED)

Committee on Science (COMSCI)

Committee on Environmental Improvement (CEI)

Senior Chemists Committee (SCC)

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Committee on Ethics (ETHX) Committee on Technician Affairs (CTA)

Committee on International Activities (IAC) Women Chemists Committee (WCC)

As you indicate your preferences, please keep in mind the following:

- ACS committees are working committees; regular attendance and participation at committee and subcommittee meetings (almost always held at national meetings) are required and most important.
   Please make a committee preference only if you feel that you can attend and actively participate in a committee's meetings.
- Most initial appointments to committees are for non-voting associate positions. Associates are
  appointed for one-year terms and must also complete the preference form in order to seek
  reappointment on the committee in which they currently serve. Associates also are not eligible to vote
  on official committee motions, though they should actively participate in committee debates and
  subcommittee meetings, and assist the committee in other ways.
- It is helpful to list four of the committees on which you would prefer to serve. Please give reasons why you wish to serve on a particular committee and why you would be a good choice.
- Please complete the online selection process as soon as possible, but no later than June 10, 2016.
- Appointment letters for those chosen for committee service typically arrive in January of the year of the first term.

Susquehanna Valley Section Web Page: <a href="http://departments.kings.edu/SusquehannaValleyACS">http://departments.kings.edu/SusquehannaValleyACS</a>

Please send any comments about the monthly newsletter to Ron Supkowski, Section Secretary King's College 131 N River St. Wilkes-Barre, PA 18711 ronaldsupkowski@kings.edu