



American Chemical Society Wichita Section

November, 2015 Newsletter
Stephen Donnelly, Editor

Section Meeting
Monday, 16 November, 6:00 PM
Wichita State University
Wichita, KS

Meal: 6:00 p.m.
Presentation: 7:00 p.m.

We will meet for dinner in the Olive Room (RSC 261) in the Rhatigan Student Center on the campus of Wichita State University. The meal will include a Mexican buffet at a cost of \$14.00 for members and guests, and \$7.00 for students. The presentation will be given in the same room starting at 7:00 PM. We ask those interested in joining us for dinner to RSVP to Paul Rillema by email to paul.rillema@wichita.edu by 11 November.

A map of the WSU campus can be found at: http://webs.wichita.edu/?u=parking&p=/2015_parking_plan/. Parking is available in Lot 7 just south of the Rhatigan Center.

Speaker: *Dr. Moriah Beck*, Assistant Professor, Department of Chemistry, Wichita State University.

Title: *Biochemical Mechanisms of Cancer Metastasis*

Abstract:

Ever wonder why cancer is so deadly and why it is such a difficult disease to diagnose and treat? The answer and the root of the problem is metastasis. Dr. Beck will provide the audience with some general background on the complex multi-step process associated with cancer invasion and metastases. She will focus on specific pathways and proteins involved normal cell motility that are perturbed in invasive forms of cell motility. Highlights of recent cancer research from the Beck lab and others throughout the state of Kansas will be featured.

Speaker Bio:



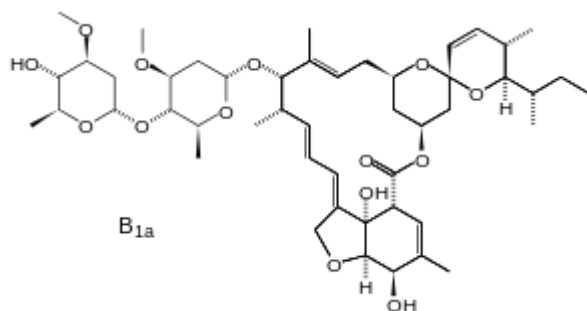
Dr. Moriah Beck obtained her B.S. in Forensic Science at Eastern Kentucky University (1999). Her passion for structural biology was ignited during a year that she spent as a research technician with Profs. Louis Hersch and David Rodgers at the University of Kentucky. Beck then began her graduate work in the lab of Prof. Gabriel Waksman at Washington University in St. Louis, but was drawn away from crystallography to solve the first novel NMR structure of a fungal virulence factor with Profs. David Cistola and William Goldman. She completed her Ph.D. in 2007, which concluded with a St. Louis-Pasteur Institute fellowship in Paris. Beck then accepted a Lineberger Comprehensive Cancer Center postdoctoral fellowship at UNC-Chapel Hill with Prof. Sharon Campbell and was awarded an NRSA postdoctoral grant. Beck started her faculty position at Wichita State University in 2011 where she continues her work to understand how actin dynamics and organization are regulated by palladin and in particular the role of these protein in cell motility and cancer metastasis.

Wichita Section Election Results

The results are in and Dr. Arvin Cruz has been elected to the position of Secretary for 2016. As Secretary Arvin will begin the three year leadership cycle where he will transition to Chair-Elect in 2017, and then Section Chair in 2018. Dr. Norman Schmidt was elected to a three year term as our Alternate Councilor. Please join me in congratulating Arvin and Norman, and thanking them for choosing to serve our section.

Stephen Donnelly,
ACS Wichita Section
Election Committee Chair

Molecule of the Week



avermectin B1a

Half of the 2015 Nobel Prize in Physiology or Medicine went to William C. Campbell at Drew University (Madison, NJ) and Satoshi Ōmura at Kitasato University (Tokyo) for the discovery of a class of drugs known as avermectins and ivermectins.¹ The awardees discovered that these drugs cure human diseases such as river blindness and elephantiasis that are caused by parasitic roundworms. They are also effective against heartworms in dogs.

The avermectins and ivermectins are sets of macrocyclic lactone isomers. They have almost identical structures; ivermectins are made by hydrogenating one of the ring double bonds in avermectins. The B1a avermectin isomer is shown here.

In 1978, Ōmura and co-workers isolated avermectins from soil samples that contained *Streptomyces* bacteria. The specific bacterium was later named *S. avermectinius*. The same year, the avermectin mixture was sent to Campbell, then at Merck Sharp & Dohme, for testing as an antibiotic. In the course of their studies, Campbell's team found that the B1 series of avermectins and ivermectins have the best potency against roundworms, but the ivermectin isomers have a better safety profile.²

The other half of the prize went to Youyou Tu at the China Academy of Traditional Chinese Medical Sciences (Beijing) for her discovery of the antimalarial drug artemisinin,³ which was profiled in Molecule of the Week in 2005.

1. Everts, Nobel Prize In Physiology Or Medicine, *C&E News*, 2015, 93 (40), 7.
2. Chabala, *et al.* Ivermectin, a new broad-spectrum antiparasitic agent, *J. Med. Chem.* 1980, 23 (10), 1134-1136.
3. Miller, L.H. and Su, X., Artemisinin: Discovery from the Chinese Herbal Garden, *Cell*, 2011, 146 (6), 855-858

10TH ANNIVERSARY



The ACS ChemClub is a high school chemistry club that provides students with a unique opportunity to experience chemistry beyond the classroom. There are over 600 clubs across the United States and abroad where students participate in after-school activities, get involved in community building, learn about chemistry careers, enjoy social events, and better understand how chemistry plays a role in our everyday lives.

Check the ChemClub link at ACS.org for more information.

Wichita Section Web Site:

<http://wichita.sites.acs.org/>

2015 Section Officers

Dr. Norman Schmidt, *Chair*

Tabor College
normans@tabor.edu

Dr. Dorothy Hanna, *Chair-elect*

Kansas Wesleyan University
dahanna@kwu.edu

Dr. Diane Nutbrown, *Secretary*

Emporia State University
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Dr. Jenifer Settle, *Treasurer*

jsettle14@gmail.com

Paul Rillema, *Councilor* (2014 - 2016)

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Eric Trump, *Immediate Past-Chair*

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