



American Chemical Society Wichita Section

September, 2014 Newsletter

Stephen Donnelly, Editor

Section Meeting
Monday, 15 September, 6:00 PM
Wichita State University
Wichita, KS

Dinner will be served at 6:00 PM in the Lucas Room in the Rhatigan Student Center at Wichita State University. Dinner will include a Mexican food buffet at a cost of \$14.00 for adults and \$7.00 for students. The meeting will be held in Room 324 of McKinley Hall and is scheduled to start at 7:30 PM. The attached campus map indicates the location of the Rhatigan Center, McKinley Hall and parking – visitors can park in the green shaded lots without a permit.

Please RSVP by Thursday, 11 September to Paul Rillema by email to paul.rillema@wichita.edu. Directions to campus can be found at www.wichita.edu.

Meal: 6:00 p.m.,
Presentation: 7:30 p.m.,
Speaker: John Fortman, Professor Emeritus of Chemistry, Wright State University

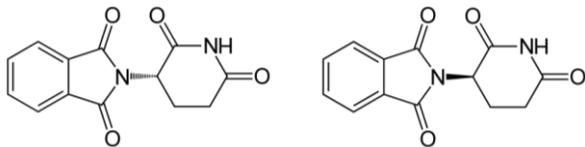
Title: *Demonstrating the Awesome Variety of Things Chemists Do*

Demonstrations and stories will be presented which illustrate how chemists discover chemicals and their reactions and find applications for them. Starting with man's first and greatest chemical invention "fire" demonstrations will be done to help explain the nature of and uses for chemical discoveries. As time allows connections will be made to mechanical energy, electricity, natural and man-made materials, food and medicines, light and sound, and even the fine arts.

Speaker Bio:

John Fortman received the 2007 Helen M. Free Award for Public Outreach. He is Professor Emeritus of Chemistry at Wright State University where he retired in 2001 after 36 years of teaching freshman and inorganic chemistry. In 1998 he was appointed the Robert J. Kegerreis Distinguished Professor of Teaching and won seven different teaching awards over the years at Wright State. In 1998 he received the CMA Catalyst Award for Outstanding Teaching of College Chemistry. Dr. Fortman received his B.S. from the University of Dayton in 1961 and his Ph.D. in physical inorganic chemistry from the University of Notre Dame in 1965. He has published over 50 papers in chemical education in addition to his research publications. With Ruben Battino he has produced a seven DVD set which contains ten hours of chemical demonstrations for use at middle school through college levels plus a live show and blooper outtakes. For over 30 years he has done chem demo outreach shows for middle and high school students in the Dayton area and continues to inspire and fascinate over 8000 students each year with at least 17 shows. He has done workshops on teaching and demonstrations around the country. He has designed alternative courses for general chemistry, elementary chemistry and chemistry for elementary education majors. His course for non-science students was cited as a model in the 1990 AAAS report on "The Liberal Art of Science: Agenda for Action". The alternative general chemistry course was developed while he was a member of the General Chemistry Task Force of the ACS Division of Chemical Education and starts with organic and biochemistry moving through materials and finishing with energy while empathizing applications and bringing in only those principles that are needed as they are necessary. The course has been characterized as being taught inside-out, upside-down, and backwards. His interests in addition to demonstrations and course content and organization include the use of analogies and videotaped material. John has been an ACS member since 1962 and was Councilor for the Dayton Local Section from 1996 to 2004. Since he became an ACS Tour Speaker in 1991 he has given over 310 section talks, visiting 163 of the 190 different local sections while doing 65 tours including all 29 different tours at least once. He has presented in all 50 states and Puerto Rico.

Molecule of the Week



(RS)-2-(2,6-dioxopiperidin-3-yl)-1H-isoindole-1,3(2H)-dione

Thalidomide

Thalidomide has a tragic history: It was introduced in Germany in 1957 as a sedative and hypnotic and was marketed over the counter largely as a drug for treating morning sickness in pregnant women. In the following few years, about 10,000 infants worldwide were born with phocomelia, or limb malformation. Only half of the infants survived, and some of those who did had other defects in addition to limb deficiencies. The thalidomide disaster caused many countries to tighten drug approval regulations.

Thalidomide exists in two mirror-image forms: it is a racemic mixture of (R)- and (S)-enantiomers. The (R)-enantiomer, shown in the figure, has sedative effects, whereas the (S)-isomer is teratogenic. Under biological conditions, the isomers interconvert, so separating the isomers before use is ineffective.

More recently, thalidomide has proven useful for treating cancer and leprosy and is approved for these uses. But although more than 2000 papers have been written about its mechanism of teratogenic action, it was not until the past few years that this mechanism was established. In 2010, H. Handa and colleagues at the Tokyo Institute of Technology showed that its biological target is cereblon, a component of an E3 ubiquitin ligase complex. Earlier this year, N. H. Thomä and co-workers at the Friedrich Miescher Institute for Biomedical Research (Basel, Switzerland) determined the crystal structure of thalidomide bound to cereblon, which allowed them to characterize the mechanism.

The Midwest Regional Meeting



November 12 - 15

University of Missouri - Columbia

<http://www.mwrm2014.org>

Adventures in Chemistry



New "Adventures in Chemistry" website packs fun for kids of all ages.

Explore chemistry with our new resource for kids – Adventures in Chemistry. The website, www.acs.org/kids, captures the interest and imagination of pre-Kindergarten and elementary students through interactive activities divided into four sections: Experiments, Secret Science of Stuff, Games, and Science ABCs. Students are able to explore both online and offline with real materials to build a strong foundation in chemistry.

Councilor's Report

Paul's report from last August's ACS National Meeting & Expo in San Francisco will accompany this newsletter.

Wichita Section Web Site:

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

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