Spectroscopy Society of Pittsburgh
February Meeting
Wednesday – February 17, 2016
held at Duquesne University

5:30 PM Technology Forum Speaker's Presentation **– Power Center Ballroom Section C**
5:30 PM Social Hour **– Power Center Fides Shepperson Suite**
6:45 PM Dinner **– Power Center Ballroom Section C**
8:00 PM Business Meeting **– Power Center Ballroom Section C**
8:15 PM Technical Program Speaker's Presentation **– Power Center Ballroom Section C**

Deadline for Dinner Reservations: Wednesday, February 10 at 12:00 noon

http://www.ssp-pgh.org/ and click on SSP Monthly Meeting "More Info" link

Dinner Reservations:
Please register on-line **at http://www.ssp-pgh.org to make dinner reservations NO LATER THAN Wednesday, February 10, 2016 at noon. Dinner will cost $10** ($5 for students) and checks must be made payable to the SSP. This month's entrées will be **Braised Beef Tips w/Mushrooms over Noodles OR Risotto Cake w/Vegetable Medley**. If you have any dietary restrictions, please indicate them when you RSVP.

Parking:
The Duquesne University Parking Garage is located on Forbes Avenue. Upon entering the garage, receive parking ticket and drive to upper floors. Pick up a parking chit at the dinner or meeting.

TECHNOLOGY FORUM - 5:30 PM
Justin Hettick, NIOSH (Morgantown)

"Infection Prevention and Control in the West Africa Ebola Outbreak"

The 2014 Ebola epidemic in West Africa is the first in history. The first case was reported in Guinea in March 2014, and the disease spread in the neighboring countries of Liberia and Sierra Leone. Over the span of a year, the Ebola epidemic has caused more than 10 times as many cases of Ebola than the combined total of all those reported in previous Ebola outbreaks. Overall, nine countries have reported cases of Ebola, more than 27,000 people have had suspected, probable, or confirmed Ebola, and more than 11,000 have died. These numbers are likely to be even higher, as many cases have gone undiagnosed and unreported. Effective infection control can protect communities and the healthcare workers who serve them. Before the Ebola outbreak, infection control in health facilities in Guinea, Liberia, and Sierra Leone was often minimal at best. Fragile healthcare systems added to the rapid spread of the virus and made it difficult to contain the epidemic. In addition, community behaviors needed to change to keep people from getting Ebola when caring for people who were sick or participating in traditional burials. Responders on the ground in West Africa have been working closely with partners and the ministries of health to provide training and health education to reduce the spread of disease.

Biography

Justin M. Hettick is a Research Chemist and Acting Team Leader for Bio-Organic Chemistry in the Allergy and Clinical Immunology Branch, Health Effects Laboratory Division of the National Institute for Occupational Safety and Health. He received a B.S. degree from Truman State University and a Ph.D. from Texas A&M University. He joined the National Institute for Occupational Safety and Health in 2003, where he completed a post-doctoral appointment before joining the staff as Research Chemist in 2006. He is a member of the American Society for Mass Spectrometry, and was the recipient of the Centers for Disease Control and Prevention's Charles C. Shepard Award in 2005.

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TECHNICAL PROGRAM - 8:15 PM
Volker Deckert

“Molecular Analysis in the Nanometer Domain - Tip-Enhanced Raman Scattering”

Nano science is omnipresent in modern research. Nanometer structuring of electronic circuits, toxicity assessment of nano particles are just a few examples where nano science already reached everyday life. Interestingly only a few analytical techniques can cope with such small dimensions. While electron and scanning probe microscopy provide impressive contrast and morphological distinction at such dimensions, direct chemical information is limited to the elemental composition. The Nobel Prize 2014 clearly indicated the importance of nanoscale sensitivity. Here labeling techniques in combination with clever illumination schemes are used to push fluorescence techniques to the lateral limit.

Interestingly the wealth of structurally sensitive analytical techniques available in combination with normal optical microscopy (IR, MS, Raman, etc.) is still restricted by Abbe's / Rayleigh’s diffraction limit. As for now emission depletion and pointilistic fluorescence techniques cannot be used for those methods. As an alternative near-field optical techniques can be applied to overcome resolution limitations. Those techniques can still profit from the wealth of structurally sensitive optical methods.
The presentation will mainly focus on Raman related near-field optical techniques to address nano domains. So-called tip-enhanced Raman scattering (TERS) will be shown to provide the means to structurally investigate nanometer sized domains on surfaces. Applications ranging from structure assessment of biologically relevant systems like fibrils and viruses, to the insight of heterogeneously catalyze reactions will be presented.

Biography

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