



# Spectroscopy Society of Pittsburgh

## April Meeting

Wednesday – April 15, 2015

### Duquesne University



<b>5:30 PM</b>	Technology Forum Speaker's Presentation - <b>Laura Falk Hall located in Mellon Hall</b>
<b>5:30 to 6:30PM</b>	Social Hour - <b>City View Café (6th Floor of Union)</b>
<b>6:30PM</b>	Dinner - <b>City View Café (6th Floor of Union)</b>
<b>8:00PM</b>	Business Meeting– <b>Laura Falk Hall located in Mellon Hall</b>
<b>8:15PM</b>	Technical Program Speaker's Presentation– <b>Laura Falk Hall located in Mellon Hall</b>

Deadline for Dinner Reservations 4/9/15 at NOON

[On-line Reservations](#)

#### **TECHNICAL PROGRAM - 8:15 PM**

Rohit Bhartia, Ph.D., Planetary Chemistry and Astrobiology, JPL/NASA/Caltech  
**“Smoke, Mirrors and Black Boxes Expanding our Understanding of Mars”**



The next Mars mission is scheduled to launch in 2020. This mission includes a roving platform with a suite of spectroscopic and imaging instruments that will be used to explore the surface and near subsurface of Mars with the expressed goal to search for potential biosignatures. One of the instruments, SHERLOC, is an arm-mounted deep UV fluorescence and Raman spectrometer that enables non-contact, spatially resolved, high sensitivity detection and characterization of organics and minerals. This talk will discuss the overall mission, the development of SHERLOC, and how we will utilize deep UV spectroscopic methods to assess past aqueous history, detect the presence and preservation potential of biosignatures, and support the selection of samples for caching and potential return to Earth.

**Rohit Bhartia** is Research Scientist at the Jet Propulsion Laboratory where he has been leading research instrument development for deep UV fluorescence and Raman based instruments for both astrobiological science interests and defense related hazard/threat analysis since 1998. He holds a BS in Bacteriology from the University of Wisconsin-Madison, and an MS in Biomedical Engineering & Image Informatics and a PhD in Geological Sciences from the University of Southern California. He currently leads efforts in field deployable deep UV fluorescence/Raman instruments for subsurface organics and microbial analysis and research efforts in in-situ correlative microscopy for mineral, organic, and biological analyses and is the Deputy-PI on the Mars 2020 flight instrument SHERLOC.

## TECHNOLOGY FORUM - 5:30 PM

Thomas Kensler, University of Pittsburgh

### “Broccoli and Your Health: Why It Might Be a Superfood”



Health reflects the ability of an organism to adapt to stress. Stresses — metabolic, proteotoxic, mitotic, oxidative and DNA-damage stresses — contribute to the etiology of cancer and other chronic degenerative diseases. Our work demonstrates that activation of the Kelch-like ECH-associated protein 1 (KEAP1)–NF-E2-related factor 2 (NRF2)-signaling pathway is an adaptive response to environmental and endogenous stresses and serves to render animals resistant to chemical carcinogenesis, other forms of toxicity, and inflammation whilst disruption of the pathway exacerbates these outcomes. The Keap1-Nrf2 pathway can be induced by thiol-reactive small molecules including dithiolethiones (e.g., oltipraz), isothiocyanates (e.g., sulforaphane) and triterpenoids (e.g., CDDO-Im) that demonstrate protective efficacy in preclinical chemoprevention models and in clinical trials. Thus,

targeting the pathway may provide important opportunities for disease prevention. Recent trials have focused on interventions with broccoli sprout-derived beverages (rich in sulforaphane) as modulators of environmental exposures to food contaminants such as aflatoxin and air pollutants.

**Thomas Kensler** received his Ph.D. in toxicology from M.I.T. Following postdoctoral fellowships at the McArdle Laboratory for Cancer Research, University of Wisconsin and at the National Cancer Institute in Bethesda, MD, he joined the faculty of the Johns Hopkins Bloomberg School of Public Health, Baltimore MD in 1980. In 1992 he was promoted to the rank of Professor. From 2000 to 2006 he served as director of the Division of Toxicology. In 2010 he moved his primary appointment to the University of Pittsburgh and hold appointments as Professor in the Department of Pharmacology & Chemical Biology and the Department of Environmental and Occupational Health. He also holds several Visiting Professorships in China. His research interests are in environmental carcinogenesis and cancer prevention. He is a past chairman of the NIH Chemo/Dietary Study Section, served as the Cancer Prevention editor for the journal *Carcinogenesis* and is currently a Senior Editor for *Cancer Prevention Research*. He has received several honors including the 2007 AACR-American Cancer Society Award for Research Excellence in Cancer Epidemiology and Prevention, the 2009 Society of Toxicology Translational Impact Award and the 2011 Friendship Award from the People’s Republic of China, their highest award for foreign civilians. He is a 2014 Thomson Reuters Highly Cited Researcher.

#### **Dinner Reservations:**

Please register on-line at <http://www.ssp-pgh.org/monthly-meeting-rsvp/> to make dinner reservations NO LATER THAN Thursday, April 9, 2015 at noon. This month’s entrée will be City Chicken. Dinner will cost \$10 (\$5 for students) and checks can be made out to the SSP. If you have any dietary restrictions, please indicate them when you RSVP.

#### **Parking Instructions:**

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.