



# Society for Analytical Chemists OF PITTSBURGH



## FEBRUARY MEETING

***Monday, February 1, 2010***  
**8:00 p.m.**

Duquesne University  
Maurice Falk Hall

Dinner: City View Café (6<sup>th</sup> Floor)



**ROYCE W. MURRAY, PH.D.**

KENAN PROFESSOR OF CHEMISTRY  
UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL

**"Analytical and Electron Transfer  
Chemistry of Nanoparticles"**

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5:30 PM	Social Hour.....	Student Union – City View Café (6 <sup>th</sup> Floor)
6:30 PM	Dinner.....	Student Union – City View Café (6 <sup>th</sup> Floor)
7:30 PM	Student Affiliate Meeting.....	Student Union – Room 609
7:40 PM	Business Meeting.....	Mellon Science Building – Maurice Falk Hall
8:00 PM	Technical Meeting.....	Mellon Science Building – Maurice Falk Hall

## ABSTRACT:

Scientists working with nanoparticles commonly characterize them by simply a dimension. This should be extremely unsatisfying to a chemist—chemists should prefer to know the chemical formula and ideally the structure of a chemical material. This is challenging analytical chemistry. This lecture will describe some progress and directions for the analytical chemistry of small gold and other nanoparticles. Recent success stories are the nanoparticles Au<sub>25</sub>L<sub>18</sub> and Au<sub>144</sub>L<sub>60</sub> where L is an organothiolate ligand, relying especially on mass spectrometry but also other tools to inform about composition and structure. Another part of the story is the variability of properties with size, as these nanoparticles cross the metal-to-molecule dimension. The lecture will include the beginnings of analogous ventures into other kinds of small nanoparticles, such as silica and metal oxides.

The research has been supported by NSF and ONR.

## BIOGRAPHY:

Royce W. Murray was educated at Birmingham Southern College (B.S., '57) and Northwestern University (Ph.D., analytical chemistry, '60), joined the University of North Carolina faculty in 1960 and became Kenan Professor of Chemistry in 1980. He was Chemistry Department Chairman 1980-85. Murray has been colleague to nearly 160 graduate and post-graduate students, with whom he has published over 445 papers. Notable recognitions include the Olin Palladium Medal (The Electrochemical Society), the Charles N. Reilly Award (Society for Electroanalytical Chemistry), the Faraday Medal (Royal Society of Chemistry, UK), Breyer Medal (Royal Australian Chemical Institute), American Chemical Society Award in Analytical Chemistry, the North Carolina Award in Science, the Pittsburgh Analytical Chemistry Award, the Southern Chemist Award, and the Luigi Galvani Medal of the Italian Chemical Society. He is an elected member of the National Academy of Sciences and of the American Academy of Arts and Sciences. He has served since 1991 as Editor-in-Chief of the journal *Analytical Chemistry*.

Murray's research interests include electroanalytical methods, the molecular design of electrode surfaces and nanoparticles, electrochemically reactive semi-solid media, mass transport and electron transfer dynamics, electrocatalysis, and voltammetry in extreme media. His role is to raise resources, keep order, and let good students do the rest.

## DINNER RESERVATIONS:

Please email Julie Theys, Arrangements Co-Chair at [theysj@pittcon.org](mailto:theysj@pittcon.org), by Thursday, January 28, 2010 to make your dinner reservation. Should you not have email, please call Julie at 814-563-7236. The entrée for February is Cheese Stuffed Shells topped with Sausage and Eggplant in a Tomato Basil Cream Sauce. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACP. If you have any dietary restrictions, let Julie know when you leave a message.

## PARKING:

Duquesne University Parking Garage entrance is on Forbes Avenue. Upon entering the garage, you will need to get a parking ticket and drive to upper floors. Bring your parking ticket to the dinner or meeting for a validation sticker. Should any difficulties arise, please contact Dr. Mitch Johnson at Duquesne University.