

# The Syracuse Chemist

Volume 101/Issue 5



June/July 2009

## July Dinner Meeting

Chemistry and Art, Dr. Richard Hark will talk about his work at the University College London, Details Inside.

Page 2

## Innovations Workshop

Fostering Innovation workshop was held on June 6<sup>th</sup>, details and member reaction.

Page 2

## Sugar Substitutes

Sugar substitutes prove to be good wastewater tracers.

Page 3

## Education Night at the Zoo!!

Education Night at the Zoo on June 18<sup>th</sup> was a wonderful celebration of youth, activities and creativity. With more than 50 people in attendance, most of them students and their families, awards for the Earth Day Haikus were distributed and the finalists in the Chemistry Olympiad were congratulated. Videos of the National Chemistry Week and Earth Day work were also shown.

Our speaker for the evening was Dr. Melissa Fierke whom you might recognize from her recent newspaper and radio appearances. The day before our event, the Emerald Ash Borer was found in New York and Dr. Fierke is the local expert. The importance of the discovery stems from the fact that EAB has destroyed the Ash population in many regions of our country and it has now moved into New York State. Dr. Fierke gave an interesting talk about how insects use pheromones to detect each other, attract each other and to fool other insects into their traps.

All in all many attendees commented on how much fun it was to walk through the zoo by themselves and how beautiful the room was for the event.

If you missed Education Night at the Zoo this year, look for a repeat event next year as we again celebrate our youth and the importance of inspiring excellence and interest in Chemistry!

For more information on the Emerald Ash Borer, please check out this website, <http://www.emeraldashborer.info/> as well as Dr. Fierke's homepage, <http://www.esf.edu/extension/ash.htm>.



A. planipennis, Farmington Hills, 8-VIII-o2

**Save The Date!!!**

**Monday**

**July 20, 2009**

Dinner Meeting at

Syracuse University

Topic is Chemistry and Art

Speaker is

Dr. Richard Hark  
From Juniata College

**Come to our annual  
"Eat Like a Student  
Event" at SU!**

All attendees \$5.00!!

Note: Talk will be geared toward chemists and non-chemists, so invite your artist friends!

All are welcome!!!

# July Dinner Meeting 7/20/2009

# Fostering Innovation Leadership Course

July's dinner meeting will be held at Syracuse University on July 20<sup>th</sup>, dinner at 6:30 PM and lecture at 7:15 PM. The speaker will be Dr. Richard Hark and his topic will be Chemistry and Art.

Dr. Hark is a professor of organic chemistry at Juniata College in Huntingdon, Pennsylvania. His current research interests include the synthesis of antibacterial peptide inhibitors, the development of latent fingerprint visualization reagents and the application of laser-induced breakdown spectroscopy (LIBS) to the analysis of art, artifacts and items of forensic interest. Originally from the Buffalo area, Dr. Hark received his bachelor's in chemistry from the University of Rochester in 1984 and his Ph.D. in chemistry from the University of Pennsylvania under the direction of Dr. Madeleine Joullie in 1996. His graduate work was directed toward the synthesis of ninhydrin analogs as reagents for visualizing latent fingerprints on porous surfaces.

Over the past several years, Dr. Hark has been interested in utilizing chemical analysis to uncover the history of and aid in the conservation of Renaissance artwork. He will be discussing the work he contributed to during his joint sabbatical in England at the University College London and the Victoria and Albert Museum in London, shown here.



[www.vam.ac.uk/your\\_visit/index.html](http://www.vam.ac.uk/your_visit/index.html)

*Written by Nicole Snyder*

On June 06, 2009, the Syracuse Section hosted "Fostering Innovation: Styles and Processes," an ACS Leadership Development short course. The event, led by Omar Asensio of the National office and held at the Doubletree Hotel in East Syracuse, focused on thinking outside of the box when developing new ideas in both academia and industry. The seminar began as a series of short lectures that focused on four major pillars for fostering innovation in the context of a challenge: (i) defining the benchmark, (ii) generating new alternatives, (iii) evaluating alternatives, and (iv) implementation. After the lectures concluded, each member was given a short questionnaire that classified the member as one of four types of innovators: a refiner, a philosopher, an experimenter, or a visionary. Members were grouped by innovator type during breakout sessions which marked most of the rest of the seminar. These breakout sessions allowed individual members to get to know one another while working collectively to generate solutions to challenges presented to the group. Each individual group then shared their ideas with the group as a whole to show how different innovators approach challenges and how companies and academic intuitions can benefit from each type of innovator to foster innovation.

The Syracuse Section is the first section in the New York region to hold one of these events, and the section received a grant that allowed the attendees to attend the event free of charge. Over fifteen individuals from both academia and industry took advantage of the opportunity which was a success overall.

Congratulations on being the first local section to take part in this program!

Get  
Involved!

**The news is good!** The Syracuse Section is among of the most active Local Sections in the country; last year we brought chemistry alive for more than 200 youths and their parents. We'd like to do more, and this is where you can help, with more people, more ideas we'll be able to reach more people and continue to increase the visibility of science and its importance to today's economy and the world around us. So won't you find a few hours once a month to help do that?

**How? You Ask?** There are lots of ways to help out. Get involved with the education committee and help us plan events, write articles for the Chemist (come on you've got to be tired of my writing by now), work on creating professional activities, run for office or help us schedule a dinner meeting or volunteer to talk at a dinner meeting.

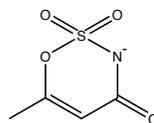
**What's the time commitment?** As much as you choose, a few hours once a month or a few hours a year, but with your help we can reach more people and we can use YOUR dues to spread our fascination with science generally and chemistry specifically.

**What will this do for you?** As a member of the Local Section you can meet others who share your passion for chemistry and we can help you achieve your goals. If you have a project you are interested in working on, we can help you find funding, you can apply for a local section grant or we can help you meet research collaborators. Together, we can make a difference and we can help each other.

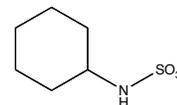
Contact any member of the Executive Committee and look for our call for nominations

## Like Diet Soda and/or Sugar Substitutes?

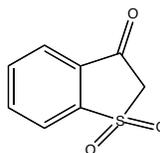
A study conducted by Swiss Researcher Ignaz Buerge suggests that sugar substitutes such as Acesulfame K, Cyclamate, Saccharin and Sucralose may be an ideal tracers for wastewater movement. In an article published in *Environmental Science and Technology (Environ. Sci. Technol, 2009, 43, 4381-4385)* Buerge studied the four most common sugar substitutes and found that acesulfame was hydrophilic, mobile and stable; ideal characteristics for a chemical marker in groundwater. By studying the fate of acesulfame K he believes he will be able to detect domestic wastewater in groundwater. In his initial studies he found concentrations of acesulfame K in surface waters, wastewater, groundwater, treated wastewater and drinking water. Acesulfame's persistence after wastewater treatment is significant. Since the other sugar substitutes generally do not persist after water treatment, the presence or absence of the other sugar substitutes allows for the discrimination between wastewater that has been treated and raw wastewater that has leached into the groundwater and drinking water. The concentrations of these artificial sweeteners is generally a few orders of magnitude higher than pharmaceuticals and their widespread consumption makes them an ideal tracers for waste water.



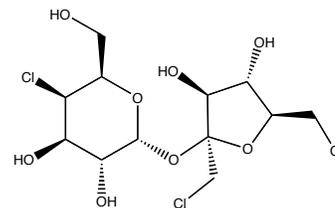
Acesulfame K  
Consumption: 9,000 tonnes  
Human Excretion: 100-101%



Cyclamate  
Consumption: 47,000 tonnes  
Human Excretion: >99%



Saccharin  
Consumption: 37,000 tonnes  
Human Excretion: 90-100%



Sucralose  
Consumption: Unknown  
Human Excretion: >95%

Syracuse Local Section invites you to:



## Dinner Meeting

# “Archeological Puzzles and Miniature Treasures”

Speaker: Dr. Richard Hark from Juniata College

When: July 20th

Where: Syracuse University, CST

Details:

Dinner at 6:30 PM

Lecture at 7:15 PM

Dinner is \$5.00 for everyone!

RSVP by 7/15 to  
Robert Stankavage  
[stanky@twcny.rr.com](mailto:stanky@twcny.rr.com)

### Abstract

Raman microscopy has emerged as perhaps the best single method for the identification of pigments and dyes on ceramics, icons, manuscripts, paintings, papyri, and other artifacts and is a powerful tool to aid in the dating and authentication, conservation, and restoration of these objects. The technique is non-destructive, sensitive, and specific, offers high spectral and spatial resolution, and allows for the in situ analysis of artworks. This presentation will describe highlights of work that was done by Richard Hark while on sabbatical in the laboratory of Professor Robin J.H. Clark at University College London and at the Victoria and Albert Museum. The results to be presented include identification of pigments found in plaster samples from Çatalhöyük, a Neolithic site in southern Turkey considered to be one of the first cities (~8,000-10,000 years old), Romanesque wall paintings from the church of Saint Eulàlia of Unha in the Aran Valley (central Pyrenees), the V&A's collection of 12th to 16th century Italian manuscript cuttings, and various medieval and Renaissance miniatures by Nicholas Hilliard, Jean Bourdichon, Franco de' Russi, Girolamo da Cremona, and others. Dr. Hark will also discuss the identification of anachronistic pigments found in five works by the so-called "Spanish Forger."



## Syracuse Chemist

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### Deadline for material:

August 2009 Issue is August 5, 2009. Please send submissions to [donaghykj@gmail.com](mailto:donaghykj@gmail.com)

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# Upcoming Schedule of Events

## JULY

7/20 Dinner Meeting at Syracuse University

## OCTOBER

National Chemistry Week - 10/18-10/25

MOST Celebration 10/17

ESM Spooktakular 10/25

Have an idea for a great event? Please contact a member of the Executive Committee or join us at a meeting!

### Winner of last month's challenge:

No winner last month. The answer to the challenge was Scandium.

### Here's this month's challenge:

What element am I?

This metal, steel-gray in colour, is one of the lightest of all metals. Both the metal and its salts are highly toxic, and must be handled with extreme caution. When alloyed with copper, it is extensively used in springs and electrical contacts.

Playing for Free MOST tickets with IMAXMovie!

## THE SYRACUSE CHEMIST

Syracuse Section of the American Chemical Society

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