

## **The Younger Chemists Committee Presents:**

A monthly lecture series  
To be held the 3<sup>rd</sup> Tuesday of every month  
at Traffic Jam & Snug in Detroit  
An evening of libations, edible delights  
and science inquiry

November's Topic:  
**The Archaeological Dating Game:  
Radiocarbon, Rock Art and Residues**

Presented by:

Ruth Ann Armitage, Ph.D.  
Eastern Michigan University  
Department of Chemistry

How old is this artifact? What is that stuff stuck on that stone tool? Who painted that rock art? These are all questions that archaeologists have asked that require a collaborative effort with analytical chemists and nuclear physicists to answer! This talk will describe some of the projects that are ongoing in the Armitage lab, including how to date a rock artist (with radiocarbon).

**Tuesday, November 18<sup>th</sup>, 7 PM  
Traffic Jam & Snug**

511 West Canfield Street, Detroit, MI 48201  
The Traffic Jam and Snug, established 1965, is known for their in-house bakery, microbrewery, dairy, and made-from-scratch dishes.  
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## ACS/DAC Co-Programming at Pittcon 2009

### INVITED SYMPOSIA

- Biological Applications of Capillary Electrophoresis
- Evolution of Modern Chromatography: Celebration of 25 years of the Subdivision on Chromatography and Separation Chemistry
- The Future of HPLC-Method Development: Quality by Design—Evaluating the Control Space of Robust HPLC Methods
- New Dimensions in Multidimensional Separations
- Young Investigator Award from Subdivision on Chromatography and Separation Chemistry
- Pressurized Fluids in Separations Technology

### ORGANIZED CONTRIBUTED SESSIONS

- Validation of Bioanalytical Methods: Addressing matrix effects, ion suppression and ISR (incurred sample reanalysis)
- New Concepts and Instruments for Electrochemical Sensors
- Multi-residue Pesticide Analysis for Food Testing
- Understanding Chromatography with Sub-2 $\mu$ m Particles
- Quality Assurance of Measurements and Proficiency Testing

Visit [www.pittcon.org](http://www.pittcon.org) for the complete technical program.

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# ANACHEM/SAS/ACS NOVEMBER MEETING

## USING PYROLYSIS-GC-MS TO CHARAC- TERIZE AEROSPACE MATERIALS

AUTHOR: ROGER DEVIVAR, Ph.D.  
JACOBS TECHNOLOGY/NASA-JOHNSON SPACE CENTER

**SPEAKERS: Peggy Gorski, CDS Analytical and  
Kurt Thaxton, Varian, Inc.**

**THURSDAY, NOVEMBER 13, 2008**

**UNIVERSITY OF DETROIT-MERCY  
Corner of Livernois & McNichols  
Enter Gate from McNichols  
Room 118 Chemistry Building**

**TIME 6:00PM**

Abstract: In an environment where air is limited and contained in a closed loop circulation system such as a spacecraft, everything that is part of the system must be tested for possible contamination and off gassing. Problems with material identification, characterization and qualification of flight and non-flight components are common in space-flight operations. This paper will focus on the analysis of challenging viscous and solid samples by pyrolysis GC-MS. Examples of flight and non-flight samples analyzed by this technique will include plastic films, paints, adhesives, o-rings and fluids. We will also examine how pyrolysis GC-MS can successfully be used to find contaminants and identify small organic molecules. The last example will look at how the use of TGA in conjunction with pyrolysis GC-MS can solve material characterization problems. In conclusion, Pyrolysis GC-MS can be a valuable laboratory tool for the fast and simple analysis of a variety of

*(Continued on page 4)*

*(Continued from page 3)*

compounds, known and unknown, with minimal sample prep.

Peggy Gorski has been actively involved with analytical instrumentation for over 25 years. She was 20 years at Agilent Technologies and more recently with CDS Analytical, in Oxford, Pennsylvania. She received a BS degree (1975) in Biology and minor in chemistry from Loyola University, Chicago, Il. and a M. B.A in marketing management (2000) from Goldey Beacom College in Newark, DE

Kurt Thaxton is an MS specialist with Varian, Inc.

Directions: Refer to map or visit

<http://www.udmercy.edu/aboutdrivingdirections.htm>

Note UDM has secure parking.

Contact Felix Schneider 248-583-1578 or at:  
[felixschn@wowway.com](mailto:felixschn@wowway.com)

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## **Lecturer in Toxicology Wanted**

The Department of Natural Sciences of the University of Michigan-Dearborn is seeking a lecturer to teach Introduction to Toxicology for the winter semester of 2009. The course is directed at chemistry majors and should include topics such as: human pathophysiology, medical aspects of poisoning, biochemical/cellular mechanisms of poisoning in the human body, environmental toxicants, routes of exposures and case studies. The ideal candidate will have prior teaching experience, experience in a field closely related to toxicology and at least a masters degree in chemistry or a related area. Applicants should send their resume, a brief cover letter and names of three references to Toxicology Search, Department of Natural Sciences, University of Michigan-Dearborn, 48128-1491. Additional information about the position and the department can be found at our web page at <http://www.umd.umich.edu/naturalsciences/>

**The Younger Chemists Committee Presents:  
A Backstage Tour of the Detroit Opera House  
Monday, November 10<sup>th</sup>, 7-9 PM**

**\$5.00 per person. Attendance is limited to this event. Please RSVP to Meghann Mouyianis at 313.993.1259.**

Come join the Opera House Ambassadors for a backstage tour of the Detroit Opera House. Learn about the history of the Opera House and its restoration. Meet the people behind the scenes, tour the stage and see how it operates.. Located on the corners of Broadway and Madison at Grand Circus Park.

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**Fifty And Sixty Year Members**

*We encouraged the fifty-and sixty year members to share their valuable experiences in chemistry with us. Throughout the remainder of the year we will feature the biographies in The Chemist of these members.*

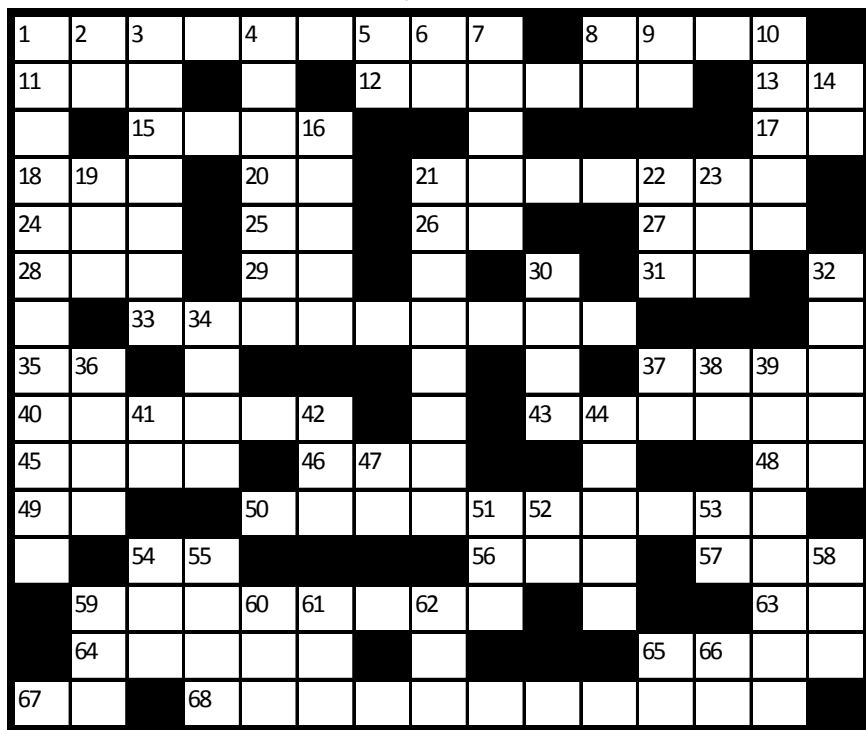
**Biography of John A. McLean, Jr.**

John McLean received a B.S. in Chemistry from Tennessee State University and began his career as a High School Chemistry Teacher in Southern Illinois. He was drafted into the U.S. Army during the Korean War and upon his discharge entered the University of Illinois at Urbana. He received a Ph.D. in Inorganic Chemistry in 1959 and joined the faculty of the University of Detroit.

He held several elective offices in the Detroit Local Section including Chairman of the Section in 1982. During his tenure as Section Chair, he was presented a certificate by the National Office in recognition of outstanding leadership of the Detroit Local Section, winner of the 1982 award for Outstanding Performance by a Local Section.

His research interests included the chemical kinetics of transition metal complexes in aqueous and non-aqueous media. He directed 22 M.S. and 16 Ph.D. students. He received student awards for advising pre-med, pre-dent and international undergraduate students. In 1986, he received the University President's Award for Excellence in Teaching and Research. He conducted numerous federally sponsored summer workshops for local science teachers. John spent his last ten years as chair of the Chemistry Department and retired in 1994. He spends much of his time traveling and ministering to the sick.

# Chemistry Crossword



## Key

## Across

- 1 Non-C chemistry
- 8 Metal start points
- 11 Neither's buddy
- 12 In cyberspace
- 13 Noble gas
- 15 Bug
- 17 Rare metal
- 18 Old airline?
- 20 3rd note
- 21 3 C gas
- 24 Worked
- 25 One

## Down

- 1 Chemistry class or musical comp.
- 2 One of the nitrogen oxides
- 3 C chemistry
- 4 Relevant
- 5 Negative
- 6 Entered
- 7 Bean counter
- 8 Functioning
- 9 Rhenium
- 10 Targets
- 14 Country road
- 16 Fluid measure

(Continued on page 7)

(Continued from page 6)

**Across**

- 26 Hong Kong
- 27 Fishing must-have
- 28 One, pref.
- 29 Hard metal
- 31 Hey!
- 33 The central science!
- 35 Latin lesson word
- 37 Rotting vegetation
- 40 9 C alkane
- 43 2 C compound
- 45 Hopping lizard
- 46 Aromatic diamine, abbr.
- 48 Poison element
- 49 Heavy halogen
- 50 Life chem
- 54 Keystone state
- 56 Steamy
- 57 Type of chemical addition
- 59 Element named for a goddess
- 63 Towards
- 64 Electrode
- 65 Rabid
- 67 World org.
- 68 Periodic table, right side

**Down**

- 19 Pale
- 21 Chem-phys interface course
- 22 \_\_\_ and all
- 23 New, pref.
- 30 Indian tribe
- 32 Figs cousins?
- 34 Top dog
- 36 Carbon black
- 37 Acidity measure
- 38 Per
- 39 Chem of composition?
- 41 Sodium
- 42 British music company
- 44 Banal
- 47 Flip side of "don't"
- 51 Resistance unit
- 52 Leave
- 53 Element 33
- 54 Trash
- 55 Nameless, abbr.
- 58 Winkin' & blinkin's pal
- 59 Big car
- 60 Hubbub
- 61 Lair
- 62 Function
- 65 Light metal
- 66 X - IV

See page 14 for solution.

*Submitted by Mark Benvenuto*

## **Project SEED Student Present Posters as Part of Summer Experience**

This year's Project SEED (Summer Educational Experience for Disadvantaged Students) program provided Detroit area students the opportunity to get involved in advance research at the University of Detroit-Mercy (UDM) and Wayne State University (WSU), directed by select faculty known as preceptors.

This year's program placed five students, two returning and three new ones. The three new students were selected via their application package and an interview process, which began with the solicitation of applicants in mid-April. The selections committee reviewed nearly 40 applications and conducted 20 student interviews.

The structure of the program afforded participants the usual elements, see below.

- Students draft required research paper
- Skills developmental workshops
- College Scholarships and Admissions counseling
- Related field trips
- Book scholarship (BASF)
- Student mentoring students (Served as Student Assistants within the WSU Upward Bound Science courses and College of Engineering Summer High School Institute)

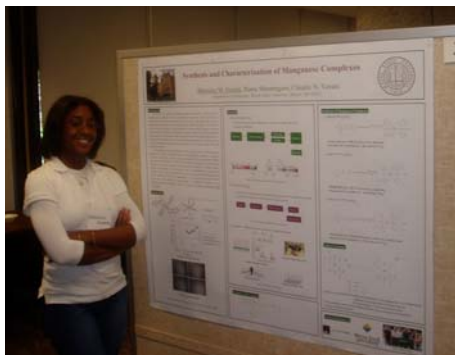
This summer the program participants were challenged to not only draft a final research paper, but put together all the components associated with presenting a poster, an abstract and poster. All student abstracts were accepted to the Wayne State University Minority Research Day held on August 21, 2009 at Scott Hall on the WSU Medical School campus. The event went quite well. The program would like to acknowledge all those who made this possible particularly the participants who worked on their posters and attended extra workshops on "How to present a poster," a week after the scheduled end of the program.



(Continued from page 8)

This year's students:

**Jasmine Harris** (right), a Junior at Detroit Osborn High School, worked with David Reuda, Wayne State University on *“Visualization of the Roles, Regulation, and Mechanisms of mRNA Localization in Living Dendrites Using Molecular Beacons.”*



**Sheniece Greene** (left), a Freshmen at Johns Hopkins University, worked with Claudio Verani, Wayne State University on *“Synthesis and Characterization of Manganese Compounds.”*

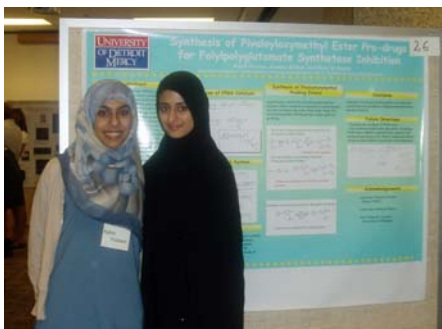
**NaKisha Rutledge\*** (right), a Senior at Detroit Renaissance High School, worked with Howard Matthew, Wayne State University on *“Stengthen Citosan Based Scaffolds with Tholated Chitosan Fibers: Mechanical Properties and Cell Interactions.”*



(Continued on page 10)

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**Kafah Hussien (right)**, a Senior at Dearborn Edsel Ford worked with David Bartley, University of Detroit-Mercy on “*Synthesis of Pivaloyl Prodrug Esters of Anti-folate Chemotherapeutic Agents.*”



**Jasmine Reese (left)**, a Senior Detroit Cass Technical High School, worked with Jeremy Kodanko, Wayne State University on “*Synthesis of Iron-Binding Ligands.*”

**Shauntaye McKinney**, who participated in Project SEED in 2006 and 2007 is the BASF Book Scholarship recipient and is a freshman Chemistry major at Wayne State University.

\*It should be noted that participant NaKisha Rutledge submitted her Summer 2007 research to the WSU Humanities and Arts Symposium and placed third, which sent her to a national competition in the Spring 2008. It is the hope of the program, that all eligible students of this summer’s effort submit their poster to the Metropolitan Detroit Science Engineering Fair in Spring 2009.

Detroit Project SEED would like to thanks all of its financial con-

(Continued on page 11)

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tributors who made it possible to pay the students the \$2,500 (level I) or \$3,000 (level II) stipend.

- ACS Local
- ACS National
- BASF (Southfield) Fran Hecklen
- Henkel Corporation: Jim Landis
- WSU Department of Chemistry (Poster printing)

Lastly, the ACS Detroit Section Project SEED Committee would like to , also, express its gratitude to Yolanda Watts, chair of the section's Minority Affairs Committee, Felicia Benson (DPS) for coordinating all aspects of the Project SEED activities before during, and after the program, as well as the Detroit Professional chapter of NOBCCHE.

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## **Technology and Communication Innovation**

The executive council of the Detroit Section would like to improve communication, website materials and delivery of chemical related news and materials through different medias and technologies. This might include new committee websites, website tutorials, surveys and presentations, pod casts, text messaging, etc. While the section will draw upon the experience from the current committees, we would like new ideas and to invite volunteers to helpdevelop a technology committee to produce offerings that are useful to our membership. Ideas and inquires may be directed to Steve Scribner at

[sscribner@marygrove.edu](mailto:sscribner@marygrove.edu) or 313-927-1321.

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## **Please Verify Contact Information**

ACS has recently upgraded its member database. Please take a moment to review your contact information included with this newsletter (and any other communications that you receive from ACS) to verify that it is correct. To help maintain the integrity of our roster files please report any changes to [service@acs.org](mailto:service@acs.org). Please be sure to include your Member ID along with any changes that you report.

## Kids & Chemistry Update

**Coming UP:** The Detroit ACS Kids & Chemistry group has two more programs on their calendar for the fall season. On Friday, November 7, we will participate in the Royal Oak Career Fair. Felix Schneider will be organizing this program, aimed at high school students, and will be looking for 3-4 volunteers to help him. At this program we give interviews, answer questions about chemical careers (what do chemists do?), and pass out literature to high school students. If you would like to participate please contact Felix at: [felixschn@wowway.com](mailto:felixschn@wowway.com),

And, on Saturday, November 15<sup>th</sup>, we will participate in what has become the annual program on Belle Isle for the Detroit Girl Scouts. It will run from 8:00 – 1:00 with six stations running hands-on experiments. We expect about 200 Girl Scouts along with their chaperones. Mary Kay Heidtke (Magni Ind.) is chairing the event and will be looking for 18-20 volunteers to help her. This is a fast-paced, fun event. You can contact Mary Kay at [MKHeidtke@aol.com](mailto:MKHeidtke@aol.com).

### And Thank You

We'd like to acknowledge the help of all those who contributed to the success of the Kids & Chemistry program at the Rouge Water Festival back in early May. Felix reported that there were 9 classes of fifth graders with a total of 241 students that participated. He also reports that they had some very good students this year and the feed back (as always) was positive. "We even received some applause by some of the classes." Our thanks to those who participated: Angela Allen (U. of M-D), Ted Biermann (Madonna U.), Niki Heinz (Kelly Services), Annise Goodman, Zora Longworth (U. of M-Med School), Emil Loszanov (WSU), Gina Ludwig, Lisa Marcolina (BASF), Walter Meiers (DTE, retired), Tom Ott, Irina Pala (WSU), Don Ray (Ford/Visteon, retired), Felix Schneider (US FDA, retired), Peter Warner (WSU) and Ron Schroeder (WSU, retired).

We are always looking for new volunteers as well as leaders. If you haven't been involved and would like to be, let us hear from you: [wsiegl@sbcglobal.net](mailto:wsiegl@sbcglobal.net).

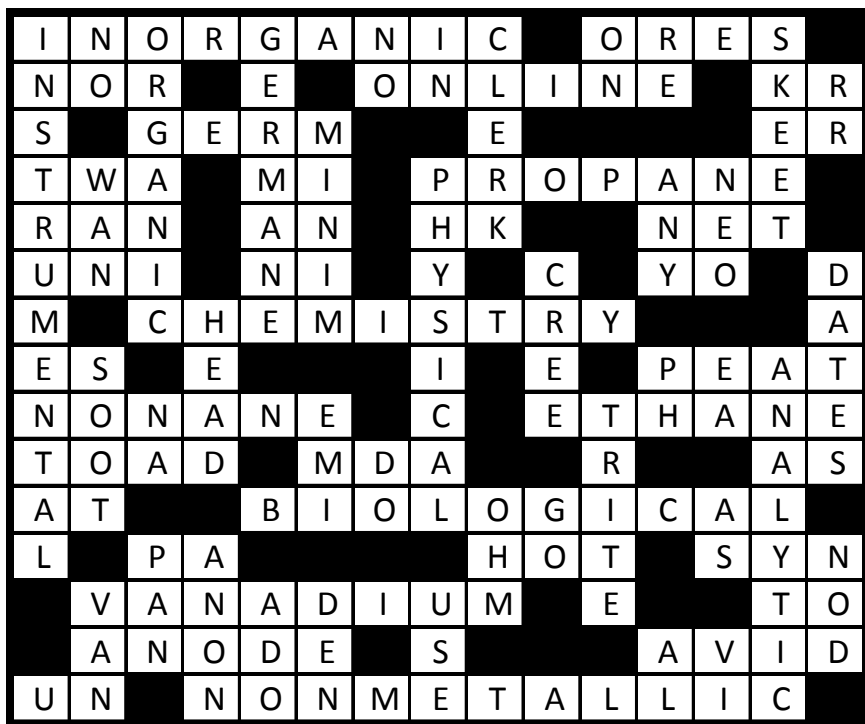
## Champagne Review

Sometimes it's fun to read beyond the borders of C&EN. Recently, in "Chemistry World," the publication of our sibling organization, the Royal Society of Chemistry, the article, "Lovely Bubbly," went into mouth-watering detail about the production and chemistry of champagne. The article included such dry tidbits as: one of the first champagne producers was one Benedictine monk by name of Dom Pierre Perignon, who lived from 1638-1715. As well, the article pointed out that a  $\frac{3}{4}$  liter bottle releases about 5 liters of CO<sub>2</sub>, for a total of 20 million bubbles per bottle (give or a take a few). As if this wasn't more champagne information than one can conveniently swallow, the article also pointed out such useful information as: the bubbles in champagne would be three times larger in volume on the moon, or larger "by a factor of four" on the top of Mt. Everest. You can't help but wonder if Neil Armstrong or Sir Edmund Hillary ever contemplated this.

This wine list of champagne statistics then switches to velocities, and mentions that utilizing high speed photography, it has been determined that the bubbles in champagne rise at about  $\frac{1}{2}$  kph (yes, that's measured in kilometers per hour!), but that the cork can make it to speeds of 50 – 60 kph upon leaving the bottle. Thank God for high speed photography!

Now, if all that is more information on champagne than you have ever had to stomach in your life, well, you are not alone. The article, on page 31 of the October 2008 issue of "Chemistry World," is itself a review however. If you want to pluck your information straight from the vine, the research article from which all this flows is referenced as: G. Liger-Belair, Chem. Soc. Rev., 2008, DOI: 10.1039/b717798b. The on-line abstract at the RSC journal site reads: "This critical review summarizes recent advances obtained during the past decade concerning the physico-chemical processes behind the nucleation, rise, and burst of bubbles found in glasses poured with champagne and sparkling wines." Physical chemists have been researching this for a decade?! Still, it might make good bedtime reading – when you're at home with a bottle of champagne, of course.

*Submitted by Mark Benvenuto*



Solution to the Chemistry Crossword, see pages 6 and 7

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### Calendar of Upcoming Events

- Nov 7 Kids & Chemistry at Royal Oak Career Fair, *see page 12 for details.*
- Nov 10 YCC Backstage Tour of Detroit Opera House, *see page 5 for details.*
- Nov 29 ANACHEM/Section Meeting, *see pages 3 and 4 for details.*
- Nov 15 Chemistry Day at Belle Isle, *see page 12 for details.*
- Nov 18 YCC Brewing Chemistry, *see page 1 for details.*
- Feb 19, 2009 February Section Meeting Topic: "America's Funniest Chemical Videos: Dazzling Demos and Videotaped Bloopers", *see January Chemist for details*
- April 10, 2009 April Section Meeting Topic: "What You Always Wanted to Know about Chemicals in Foods but Were Afraid to Eat", *see March Chemist for details*

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