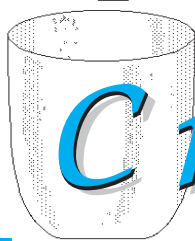




# The Crucible



<http://membership.acs.org/P/Pitt>

Volume: XCI No.10

August 2006

## National Chemistry Week 2006 "Your Home - It's All Built on Chemistry"

**MARK YOUR CALENDAR** - National Chemistry Week (NCW) 2006 is scheduled for October 22-28, 2006. The 2006 NCW theme is "Your Home-It's All Built on Chemistry." Each year NCW reaches millions of people with positive messages about the contributions of chemistry.

The Pittsburgh Section will be holding a two-day event at the Carnegie Science Center on Friday and Saturday, October 27 and 28, from 9:00 a.m. to 5:00 p.m. each day. There will be over 25 tables throughout the Carnegie Science Center, staffed with volunteers from area businesses, professional societies, high schools, and colleges and universities, performing hands-on activities, demonstrations, and special theater-style shows.

The Pittsburgh Section is looking for individuals and groups to assist in coordinating these events and activities. If you have not volunteered or attended a Local Section activity in the recent past, here is a great opportunity to get involved. This could be your chance to help educate the public of the importance that chemistry plays in the quality of our daily lives. Your participation will ensure that the Pittsburgh Section brings about a positive change in the public's impression of science and will help to promote a positive message about chemistry, particularly to elementary and secondary school children.

For more information about the NCW celebration in Pittsburgh, visit the Pittsburgh Section's website at <http://membership.acs.org/P/Pitt>

You can also find additional information on the ACS's NCW website at <http://chemistry.org/new>

To volunteer yourself or your organization to participate in this year's NCW celebration, contact the Pittsburgh Section's NCW Coordinator:

V. Michael Mautino  
Bayer Material Science LLC  
100 Bayer Rd., Bldg. 1  
Pittsburgh, PA 15205  
Phone: 412-777-4792  
Fax: 412-777-7864  
E-mail:  
[michael.mautino@bayerbms.com](mailto:michael.mautino@bayerbms.com)



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## 27<sup>th</sup> Annual Chemistry Olympic Winners

The 27<sup>th</sup> annual Chemistry Olympics were held at the University of Pittsburgh on May 3, 2006. Thirty-six high schools participated. Category I is first year students, category II is second year and category III is organic chemistry. The teams are given three hours to complete two labs, which are then evaluated. The event is held annually and is sponsored by the Chemical Education Group of the Pittsburgh Section of the ACS and the University of Pittsburgh. Pictures of this even can be found on page 8. The winners of the 27<sup>th</sup> annual Chemistry Olympics are:

### Category I

1<sup>st</sup> Place: Shadyside Academy  
Teacher/ Coach \* Stephanie Montenmurro  
Tara Magee, Laura Bagamery, Robert Tisherman

2<sup>nd</sup> Place: Gateway  
Teacher/Coach \* Tim Lattanzio  
Matt Lipner, Vikram Rajkumar, Lisa Sprowls

3<sup>rd</sup> Place: Mars Area  
Teacher/Coach \* Rebecca Winek  
Lena DeLucia, Kayla Gavala, Audrey Grinshpun

### Category II

1<sup>st</sup> Place: Gateway  
Teacher/Coach \* Tim Lattanzio  
Jennifer Li, Nicole Ickes, Tophi Rose

2<sup>nd</sup> Place: Penn Trafford  
Teacher/Coach \* Helen Loughner  
Matthew Henderson, Diana Filtz, Rachael Kyper

3<sup>rd</sup> Place: Mt. Lebanon  
Teacher/Coach \* Kernion/Meer  
Lou Argentieri, Scott Baxter, Joe Kassai

### Category III

1<sup>st</sup> Place: Penn Trafford  
Teacher/Coach \* Helen Loughner  
Dan Toellner, Trina Cicco, Travis Kline

2<sup>nd</sup> Place: Taylor Allderdice  
Teacher/Coach \* Sally Martin  
Julia Meisel, Anastasia Kurnikova, Mary Barbish

3<sup>rd</sup> Place: Highlands  
Teacher/Coach \* Brigitte Huffman  
Rupali Kumar, Elizabeth Calabrese, Brianna Berenson



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### September Meeting

Wednesday

September 20, 2006

Duquesne University,  
Mellon Hall of Science  
(Maurice Falk Hall)

6:00 PM - Social Hour  
6:30 PM - Dinner  
(City View Cafe - 6<sup>th</sup> Floor)  
8:00 PM - Business Meeting  
8:15 PM - Speaker's Presentation

**Professor Dr. Wolfgang Kiefer**  
**Institute for**  
**Physical Chemistry**  
**University of Würzburg**

**Dinner Reservations:** Please call John Koczko at (412) 655-8497 or e-mail [jpk@unitysystems.com](mailto:jpk@unitysystems.com) to make dinner reservations NO LATER THAN FRIDAY, September 15, 2006. Dinner will cost \$8 and checks can be made out to the SSP. If you have dietary restrictions, please let John know 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. If any difficulties arise, contact Dr. Mitch Johnson at Duquesne University.



**Wednesday**  
**September 20, 2006**  
**Speaker and Program**  
**TBA**

*ACS Pittsburgh Chemists Club*  
Pittsburgh Section, American Chemical Society

**Tuesday, September 26, 2006**

*"Biodiesel, A Green Fuel Times Two - Environmentally  
Friendly and Ready for Market"*

by

Marc A. Portnoff

Carnegie Mellon University's Center for Advanced Fuel Technology

**Duranti's Restaurant**

128 N. Craig St., Pittsburgh, PA

For reservations, please call Ed Martin by noon, Friday, September 22, 2006 at (724) 335-0904 or e-mail at [esm@icubed.com](mailto:esm@icubed.com).

Biodiesel is in the news because public policy and recent price increases in petroleum oil have made biodiesel cost competitive with petroleum diesel. Biodiesel is not a perfect "green" fuel but it does have several advantages including being a homegrown fuel. The market is expanding in the USA, and worldwide, and the race is on as both local producers and multi-nationals scramble to enter the market.

The talk will begin by explaining biodiesel basics: What is biodiesel? What are its advantages? What role has the U.S. government played in promoting its use? What is the size of the market? This will be followed by how biodiesel is produced and the influence of feedstock selection on fuel properties.

**Biography**

Mr. Portnoff co-founded Carnegie Mellon's Center for Advanced Fuel Technology (AFT) in 2002. As Principal Investigator for AFT he focuses on the development of advancement of catalysts and hydroprocessing systems for the production of clean and sustainable fuels. Recent advances, under contract to Capital Technologies, include the direct conversion of vegetable oils into sulfur free middle distillates and the efficient production of biodiesel. Mr. Portnoff serves as a lead design engineer in the design, construction and operation of novel and scalable continuous flow pilot plants and the design and fabrication of novel petroleum catalysts. He has managed projects in product development and technology assessment for five governmental agencies and over fifty industrial sponsors.

From 1991 to 1999, Mr. Portnoff served as Director and Senior Scientist for Carnegie Mellon's Advanced Devices and Materials Center. He was responsible for new business development where he successfully nurtured several emerging technology initiatives including: electro-optics vision and sensing systems and enhanced environmental monitoring systems.

Mr. Portnoff is a conference speaker, author and co-author of several technical papers and patents. He earned a Bachelor and Masters degrees in Materials Science and Biomedical Engineering. The Bachelors degree was from Vanderbilt University. The Masters degree was from Carnegie Mellon University.

**Donald Plazek Named  
Fellow of American Chemical  
Society's Polymer Division**

PITTSBURGH-Donald J. Plazek, emeritus professor of materials science and engineering in the University of Pittsburgh's School of Engineering, has been selected as a 2006 Fellow of the American Chemical Society (ACS) Division of Polymeric Materials: Science and Engineering (PMSE). The purpose of the fellows program is to honor select PMSE members who have made significant contributions to the science and engineering of polymeric, or plastic, materials.

Plazek studies the relationship between polymers' structure and function. He is well known for his work on polymers' "viscoelastic" behavior. Viscoelastic materials behave like elastic solids (silly putty) at low temperatures and viscous liquids (honey) at high temperatures.

After receiving the Ph.D. degree in 1957 from the University of Wisconsin, Plazek spent nine years as a fellow in independent research at the Mellon Institute of Pittsburgh. In 1967, he joined Pitt's Department of Metallurgical and Materials Engineering (now the Department of Materials Science and Engineering), where he became a professor in 1975 and emeritus professor in 1993. He has served as an associate editor of Rubber Chemistry and Technology and as a member of the advisory board of the Journal of Polymer Science Part B: Polymer Physics, and has authored more than 150 publications.

Plazek's many honors and awards include the George Stafford Whitby Award from the Rubber Division of the ACS and the Society of Rheology's Bingham Medal. A member of the ACS and a fellow of the American Physics Society, he has held fellowships at the University of Glasgow and Kyoto University.

*Submitted by  
Karen Hoffman  
The University of Pittsburgh*

## Historic Landmark Oil Refining in Pittsburgh

At the June 5, 2006 meeting of the Executive Committee of the Pittsburgh ACS Section, it was decided to apply to the national ACS for a Historic Chemical Landmark commemorating the nation's first oil refinery, built in Pittsburgh by Samuel Kier about 1854. At the meeting, Al Mann, a member of the local ACS Energy Technology Group presented a summary of his research on this subject and proposed that we apply for landmark designation.

Samuel Kier was born in 1813 near Saltsburg, Indiana County. His father owned some brine wells near Tarentum. For many years, salt produced in that area had been contaminated by crude petroleum that seeped from the ground. Early on, Samuel Kier saw the potential for oil as an illuminant and as a lubricant, but his first venture was to advertise its medicinal properties, which were the subject of Native American folklore. Considered a cure-all medicine for both internal and external application, petroleum was prescribed by a physician to treat an illness of Kier's wife.

For several years starting about 1847, Kier sold medicinal "Rock Oil" from his Pittsburgh shop. One of his colorful advertising flyers showed oil being produced along with brine from a depth of 400 feet. A New York City lawyer named George Bissell saw one of these flyers in a drugstore window in 1854. Shortly thereafter, Bissell was visiting Dartmouth College, his alma mater. In the office of a chemistry professor he saw a sample of petroleum, which had been sent there by Francis Brewer, M.D., another Dartmouth graduate, who was practicing medicine in Titusville PA and had become interested in potential uses for petroleum that seeped from the ground in that area. Bissell, seeing the similarity between the Brewer petroleum sample and Kier's medicinal petroleum, leased 105 acres from Brewer and organized the country's first oil company, the Pennsylvania Rock Oil Company in 1854.

Bissell conceived of drilling for oil, patterned after brine drilling. He engaged the services of Edwin Drake, who visited

Kier's brine wells at Tarentum. There Drake hired Kier's well driller, "Uncle" Billy Smith, who then went to Titusville and successfully drilled the first oil well in the United States in 1859. Meanwhile, on the advice of Professor James Booth of Philadelphia, President of the ACS, Kier set up a 1-barrel whiskey still in Pittsburgh and began distilling petroleum to produce kerosene as an illuminant. He also designed and sold a kerosene lamp that eliminated smoke and odor. Kier soon replaced his original still with a wrought iron unit having a capacity of 5 barrels. This device is on display at the Drake Well Museum in Titusville.

Originally located at Seventh and Grant Streets in Downtown Pittsburgh, Kier's refinery was relocated to Lawrenceville in 1861 because of odor and fire concerns. At the U. S. Steel Building Plaza there is a Pennsylvania State historical marker identifying the location of the first oil refinery in the United States.

*Submitted by Al Mann*  
*Al Mann recently retired after 15 years of service as a support contractor at the National Energy Technology Laboratory in Pittsburgh. A graduate of Cornell University in chemical engineering, Al previously worked for Gulf Research & Development Co., also in Pittsburgh, where his final position was Director of Process Economics. As a member of the ACS Energy Technology Group, Al has been interested for several years in researching the history of the oil industry in Western Pennsylvania. This is the first of a series of articles planned on this subject.*



Historic Marker located at the U.S. Steel Building Plaza in Pittsburgh.

## Earth Day Illustrated Haiku Contest Winners

As part of the Chemists Celebrate Earth Day (CCED) celebration held on April 22, 2006, the Pittsburgh Section sponsored an illustrated haiku contest for students in grades K-12. The topic for the 2006 CCED program was soil and the theme was "Dig It." Winners were selected from four grade categories: K-2<sup>nd</sup>, 3<sup>rd</sup>-4<sup>th</sup>, 5<sup>th</sup>-8<sup>th</sup>, and 9<sup>th</sup>-12<sup>th</sup>. Each winner received a check for \$50 and was entered into a national poetry contest sponsored by the ACS' Office of Community Activities and Committee on Community Activities. Winners of the national contest will be announced at the 232<sup>nd</sup> ACS National Meeting in San Francisco, CA, in September 2006.

The winners of the Pittsburgh Section's illustrated haiku contest:

### K-2<sup>nd</sup> Grade

August Rothenberger  
Grade 2

South Fayette Elementary School

### 3<sup>rd</sup>-4<sup>th</sup> Grade

Lena Ogiwara  
Grade 4

Hance Elementary

### 6<sup>th</sup>-8<sup>th</sup> Grade

Rachel Hays  
Grade 8

Moon Area Middle School

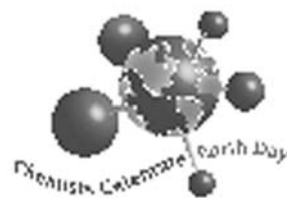
### 9<sup>th</sup>-12<sup>th</sup> Grade

Terri Lynn Shigle  
Grade 12

Penn-Trafford High School

Congratulations August, Lena, Rachel, and Terri Lynn and Good Luck at the national competition in September 2006!

*Submitted by V. Michael Mautino*





## Society for Analytical Chemists of Pittsburgh

### September Meeting

Monday, September 11, 2006

Duquesne University, Maurice Falk Hall

### *Speaker TBA*

Social Hour 5:30 P.M.

Student Affiliates Meeting, Duquesne Room (Student Union) 5:45 P.M.

Dinner - Student Union, City View Café (6th Floor) 6:30 P.M.

Business Meeting - 7:40 P.M.

Technical Presentation 8:00 P.M. Maurice Falk Hall

**Dinner Reservations:** Please e-mail Rita Windisch at [windisch@pittcon.org](mailto:windisch@pittcon.org), by Thursday, September 7, 2006 to make dinner reservations. Rita's preference for reservations is an e-mail. Should you not have e-mail, please call the SACP Administrative Assistant at 412-825-3220 ext 204. If you want to be placed on the permanent dinner list, please let Rita know when you RSVP. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACP. If you have any dietary restrictions, please let Rita Windisch know when you leave message.

**Parking:** Duquesne University Parking Garage entrance is on Forbes Avenue. Upon entering the garage receive parking ticket and drive to upper floors. Pick up a parking sticker at the dinner or meeting. Contact Dr. Mitch Johnson at Duquesne University if any difficulties arise.

## WPTAG at the International Children's Festival

Some children arrived by school bus with their teachers, some arrived holding their parent's hand and some even arrived in strollers! Some were dressed in heavy coats and some were dressed in rain boots and slickers. But despite the cold weather and constant threat of rain, the children had a wonderful time.


Continuing the tradition of promoting science in the community, the Western Pennsylvania Technician Affiliate Group (WPTAG) was proud to be a first time participant in the 2006 International Children's Festival. A popular family event, the International Children's Festival was held outdoors in West Park, on the North Side, from May 17 through May 21. This year marked the twentieth anniversary of the Festival.

Enthusiastic WPTAG volunteers conducted a hands-on science activity with the children. The WPTAG activity soon proved to be one of the favorites. The children were amazed to see how a simple chromatography demonstration could transform plain white paper into paper highlighted with many colorful patterns. The paper was then used to form the wings of a "butterfly" which the children could keep and take home.

Fun, creativity and learning were the priorities of the day, even under the darkest of skies. So many smiling faces! No one seemed to mind the weather, at all, and many a WPTAG "butterfly" could be seen throughout the park, clutched in the hands of a child.

*Submitted by  
Bernice Karp  
2006 WPTAG Chair*


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**2006 ACS Keystone Circuit Speakers**

**Dr. Mickey Sarquis and Ms. Lynn Hogue  
of the Center for Chemistry Education  
Miami University - Middletown, OH**

***“Using Toys Creatively in Chemistry”***

**Date: Monday, September 25, 2006**

**Time: 11:30 a.m. to 1:30 p.m. - Lunch will be provided**

**Location: Tonidale Restaurant (Heritage Room)  
7001 Steubenville Pike - Oakdale, PA 15071**

**Open to all. Non members are welcome to attend.  
Please RSVP by September 15, 2006 to:**

**Bernice Karp, WPTAG Chair at [bernice.karp@kemira.com](mailto:bernice.karp@kemira.com)  
or 412-777-2628 or Deborah Wallace, BASIC Chair at  
[deborah-m.wallace@bayerbms.com](mailto:deborah-m.wallace@bayerbms.com) or 412-777-2779**

What's the chemistry of a self-inflating balloon? or a drinking bird? or popular magician's tricks like putting a needle through a balloon? This presentation will make you smile and may bring out your inner child. See how simple toys and common household items can be used to unlock the mysteries of chemistry. All activities were developed by the Center for Chemistry Education through funding from the National Science Foundation, the Ohio Board of Regents, and Miami University. If you agree that play is learning without punishment, then you'll also agree that toys are ideal tools for learning science. Toys have the capability of uniting fun, hands-on play with minds-on learning. Feel like a kid again as you explore ways to use toys in your outreach programs, to spice up your classes, or to use with your own kids or grandkids. Become involved in the steps of the scientific method while solving the secrets of the Fortune Teller Miracle Fish. Find out what's so magic about Magic Sand. Many other toys will be demonstrated. All activities are user friendly, hands-on, highly motivational, and appealing to children no matter what their real age. You'll never look at toys the same way again.

**Graduate School  
Recruiters ...**

Would you like to increase the pool of applicants to your graduate programs? Then register for the ACS graduate school recruiting breakfast and ice cream social for undergraduate chemistry students! The ice cream social will be held on Sunday, September 10, 2006 from 5:00 – 6:30 p.m. and the breakfast will be held Monday, September 11, 2006, from 9:00–11:00 a.m. in San Francisco, CA as part of the 232nd ACS National Meeting.

The graduate school recruiting morning tea and breakfast offers:

- Representatives of schools the opportunity to meet qualified graduate school candidates.
- Students a chance to discuss their educational plans informally and intimately with faculty, staff, and students from participating institutions.

***Registration ends August 8, 2006.***

For more information, contact Adam M. Boyd at 1-800-227-5558, ext. 6188 or e-mail [a\\_boyd@acs.org](mailto:a_boyd@acs.org)

***ACS Cut and Paste May/June 2006***

# Pittsburgh Area Events

Pittsburgh Section Chair, James Manner presented Bob Badoux with a plaque at the ACS/SACP Awards dinner held on May 26, 2006 in appreciation for his service as Advertising Editor for The Crucible. Badoux served voluntarily as Advertising Editor from 1991 to 2005. Thank you Bob for your service!



ACS Chair James Manner (left) with Bob Badoux

George Bandik, Pitt Chemistry Department, won the Chancellor's Distinguished Public Service Award in April 2006 in recognition of his outreach efforts, especially to high school students and disadvantaged students. In addition to his other activities he has been the primary coordinator of the Chemistry Olympics at Pitt for several years.



George Bandik (left) and David Waldeck, Chemistry Chair

# 2006 Chemistry Olympics Winners



## Category II

1<sup>st</sup> Place: Gateway

Teacher/Coach \* Tim Lattanzio

Jennifer Li, Nicole Ickes, Tophi Rose



## Category II

2<sup>nd</sup> Place: Penn Trafford

Teacher/Coach \* Helen Loughner

Matthew Henderson, Diana Filtz, Rachael Kyper



## Category III

1<sup>st</sup> Place: Penn Trafford

Teacher/Coach \* Helen Loughner

Dan Toellner, Trina Cicco, Travis Kline



## Category II

3<sup>rd</sup> Place: Mt. Lebanon

Teacher/Coach \* Kernion/Meer

Lou Argentieri, Scott Baxter, Joe Kassai

# Pittsburgh Area Events

Rob Coalson, Pitt Chemistry Department, won the Chancellor's Distinguished Research Award at a recent awards ceremony at Pitt in recognition of his pioneering theoretical studies of ion channels.



Rob Coalson (left) and David Waldeck

Stay up-to-date on all the happenings of the Pittsburgh Section ACS by visiting the section's website.

<http://membership.acs.org/P/Pitt>

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## Innovative Projects Grant Applications Deadline

The Local Section Activities Committee (LSAC) invites all local sections who have not yet received an Innovative Projects Grant for 2006 to submit proposals by Tuesday, August 1.

This is the second and last deadline for 2006 awards. These grants support local sections undertaking innovative programs or activities — projects which are either new to the section or creative enhancements to an existing program. In particular, LSAC welcomes activities that promote interaction between multiple sections or between a local section and a division.

Local sections may request funding up to \$3,000, and approved projects will receive funding by November 15 in order for sections to initiate projects in the first half of 2007.

Log on to <http://chemistry.org/localsections> and click on "Innovative Grants Program" under the "Improve Your Finances."

*ACS Cut and Paste May/June 2006*



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## The Crucible

Material must be received by the 1st of the month prior to publication for inclusion in The Crucible. This rule will be enforced in order to distribute The Crucible to readers in a timely manner (before the 1st day of every publication month).

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# Pittsburgh Area Calendar

## September

- Mon. 11 **Society for Analytical Chemists of Pittsburgh (SACP)**  
TBA  
Duquesne University, Mellon Hall of Science
- Wed. 20 **Spectroscopy Society of Pittsburgh (SSP) Technology Forum**  
TBA  
Duquesne University, Mellon Hall of Science
- Wed. 20 **Spectroscopy Society of Pittsburgh (SSP)**  
TBA  
Professor Dr. Wolfgang Kiefer, Institute for Physical Chemistry, University of Wurzburg  
Duquesne University, Mellon Hall of Science, Maurice Falk Hall
- Mon. 25 **Using Toys Creatively in Chemistry**  
Dr. Mickey Sarquis and Ms. Lynn Hogue, the Center for Chemistry Education, Miami University - Middletown, OH  
Tonidale Restaurant, Oakdale, PA
- Tue. 26 **ACS Pittsburgh Chemists Club**  
Duranti's Restaurant  
*"Biodiesel, A Green Fuel Times Two - Environmentally Friendly and Ready for Market"*  
Marc A. Portnoff, Carnegie Mellon University's Center for Advanced Fuel Technology

## The Crucible

*A newsletter of the Pittsburgh Section of the American Chemical Society*  
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