



# The Crucible



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

Volume: XCIV No. 10

August 2009

## Western Pennsylvania's Energy Heritage and Future Heinz History Center August 26, 2009

**2009 Pittsburgh  
Award and Distinguished  
Service Award Winners  
Announced on Page 2**

8:30-8:55	Registration
8:55-9:00	Welcome
9:00-9:30	William C. King Vice President, Gulf Oil Corporation (retired) Western Pennsylvania's Remarkable Energy Heritage, and Our Nation's Energy Future
9:30-10:00	Lester B. Lave Carnegie Mellon University The Economics of Energy
10:00-10:30	Brian R. Beebe Westinghouse Electric Company Westinghouse's Role in the Nuclear Renaissance
10:30-11:00	Break
11:00-11:30	Samuel McLaughlin CNX Gas Corporation Natural Gas from Marcellus Shale
11:30-12:00	James M. Edwards Executive Director, John R. McCune Charitable Trust Charles Lockhart, Petroleum Pioneer and Philanthropist
12:00-12:15	Tom Lane President, American Chemical Society Presentation of ACS Historic Landmark Award commemorating Samuel Kier's pioneering work in refining crude oil by distillation, initiated in Pittsburgh in the early 1850's

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There is a \$10 registration fee for the event. Parking (reduced rate for History Center visitors) is available across Smallman Street. Please preregister by sending a check, payable to "ACS-Pittsburgh ETG", to

Mordecai Treblow, Treasurer  
6655 Northumberland Street  
Pittsburgh, PA 15217

For additional information on the program, please contact Al Mann at [alfred.mann@verizon.net](mailto:alfred.mann@verizon.net) or (412) 661-5947.

## The Pittsburgh Section ACS Announces 2009 Award Winners

The Pittsburgh Section of The American Chemical Society awards the 2009 Pittsburgh Award to Theodore Cohen, Professor Emeritus of the Chemistry Department, University of Pittsburgh, and the 2009 Distinguished Service Award to Mildred Perry, Department of Energy.



2009 Pittsburgh Awardee, Professor Emeritus Theodore Cohen, received his PhD in Organic Chemistry in 1955 at the University of Southern California. His graduate work with Professor J.A. Berson on the synthesis of ipecac alkaloids featured significant contributions on the chemistry of pyridines and pyridine -N- oxides.

Ted has been a faculty member of the University of Pittsburgh since 1956. Pioneering work, on organocopper chemistry in 60's and 70's, organolithium and sulfur chemistry in the 80's and 90's, has been and still is the signature of Ted's voluminous work in the lab. His major contributions embrace mechanisms, synthetic methodology and natural product synthesis. Throughout all this Professor

Cohen has helped build the prestigious Organic division at the University of Pittsburgh and yet found time to serve the Pittsburgh chemistry community tirelessly and conscientiously.

Although Ted formally "retired" in 1999 his colleagues insist that there is little evidence of this so-called "retirement". Professor Cohen has received many grants, awards and honors over the years. Ted has mentored 70 graduate students, numerous postdoctoral, undergrads and visiting scholars. Many of these fortunate fellows have gone on to do extremely well in important Chemistry and Pharmaceutical positions all over the world.



2009 Distinguished Service Awardee, Mildred B. Perry, received her Ph.D. in Chemistry at the University of Tennessee under the direction of Professor Earl Wehry; her dissertation research was "A Direct Determination of Polycyclic Aromatic Hydrocarbons in Solvent Refined Coal Using Matrix Isolation Fluorescence Spectroscopy."

Mille has been employed at the National Energy Technology Laboratory (including its former monikers), since she came to Pittsburgh in 1983 as a postdoctoral appointee. She began her career as Research Chemist developing characterization methods, especially preparative-scale liquid chromatographic separations, for the

"Structural Definition of Synthetic Fuels" project in the Coal Science Division. She has also served as a Process Chemistry Branch Chief in the Direct Liquefaction Division, a Flue Gas Cleanup Chemistry Branch Chief in the Flue Gas Cleanup Division, and as a Project Manager in the Advanced Crosscutting Technologies and Environmental Projects Divisions. She has served as a Senior Analyst in the Office of Coal and Environmental Systems; and she is presently Senior Advisor to the International Team in the Office of Major Projects.

Mille is a former Chairman of the Coal Technology Group (ACS), former Chairman of the Pittsburgh Section ACS, and Chairman of the Central Regional Meeting of the ACS (2003).



### Pittsburgh Section Selected as Finalists for Five ChemLuminary Awards

The Pittsburgh Section has been selected as a finalist for the following five ChemLuminary Awards:

***Best New Public Relations  
Program of a Local Section***

***Outstanding Local Section  
Career Program Award  
(Large to Very Large)***

***Outstanding Event for  
a Specific Audience***

***Outstanding Community  
Involvement in NCW***

***The ACS ChemLuminary  
Award for Diversity***

The winners will be announced at the ACS National meeting in Washington D.C. on August 18, 2009.

Congratulations to the Pittsburgh Section, committee chairs, and all those involved with the above programs.

## Drake Day Extravaganza at the Drake Well Museum Complex

August 27, 2009

### Celebrating the 150<sup>th</sup> anniversary of Edwin L. Drake's successful drilling for oil

- Grand Opening ceremonies
- Tours of the new exhibits and facilities
- Main Stage entertainment (The Oval)
- Bluegrass, Folk, Celtic and Country bands
- Story tellers
- Fiddle competition
- Side Show Entertainment (Transportation Building Area)
- Blacksmiths, coopers, candle dippers, broom makers, tinsmiths, basket weavers, cobblers, herbal people, spinning carding and weaving, civil war encampment, period games, period fashion shows, balloon artists.
- Nitroglycerine show
- Various food vendors

3:30-4:30 pm: Historic Landmark Award presentation sponsored by American Chemical Society in cooperation with the American Institute of Chemical Engineers.

Dale Keairns, Past President of AIChE, will speak on the future of energy in the United States, followed by Tom Lane, President of ACS, presenting a plaque commemorating Edwin Drake's achievement in drilling the world's first oil well on August 27, 1859.



## Society for Analytical Chemists of Pittsburgh

September Meeting

Monday

September 14, 2009

8:00 PM

Duquesne University

Laura Falk Hall

Speaker Information: TBA

### Dinner Reservations:

Please e-mail William Straub, Arrangements Co-Chair at [straub@pittcon.org](mailto:straub@pittcon.org), by Thursday, September 10, 2009 to make dinner reservations. Should you not have email, please call Bill at 412-372-9312. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACP. If you have any dietary restrictions, please let Bill know when you leave 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. Contact Dr. Mitch Johnson at Duquesne University if any difficulties arise.

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# SPECTROSCOPY SOCIETY OF PITTSBURGH

September Meeting, September, 16, 2009



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

*“Interlacing Basic Biophysical Research with Translational Clinical Studies: From Bench to Bedside and Back”*

Ira W. Levin, Ph.D. - National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

6:00 PM - Social Hour; 6:30 PM - Dinner, City View Cafe, 8:15 PM - Technical Program

Within biomedical venues significant emphasis is currently directed toward advancing medical science through interdisciplinary collaborations in which laboratory methodologies are readily modified both for understanding the molecular biology of human disease and for adaptation to clinical usage. We will introduce these concepts with several examples from our laboratory in which we apply spectroscopic techniques toward elucidating structural and biochemical characteristics of systems ranging from supramolecular assemblies to cellular organelles, tissues and organs. Specifically, we will touch upon high throughput spectroscopic imaging approaches to identify molecular biomarkers, in, for example, pharmacodynamic assessments of global protein modifications in cells treated with anticancer agents, such as histone deacetylase and proteasome inhibitors, agents used in ongoing clinical trials. In continuing collaborations with pathologists and oncologists, high-throughput vibrational spectroscopic imaging approaches have been successfully adapted to studies developed for histopathologic recognition. In examining structural elements relevant to the cellular membrane, we have investigated the putative roles of fluctuating lipid microdomains in regulating lipid bilayer behavior in various biological processes. We note that vibrational spectroscopic imaging techniques applied at the supramolecular level provide additional insights into biochemical processes as the spatial resolution approaches the nanometer scale. Our laboratory has participated directly at the patient level in collaborations with cardiologists and transplantation surgeons. For example, we will describe procedures in which visible reflectance imaging techniques are used to aid surgeons in performing laparoscopic procedures by allowing the assessment of tissue oxygenation and vessel differentiation despite significant visual limitations.

**Bio:** Dr. Levin received his B.S. degree from the University of Virginia and his Ph.D. degree from Brown University, as well as having engaged in postdoctoral experience at the University of Washington and having served a tour in the military. Having spent his professional career at the National Institutes of Health, he is currently Director of the Division of Intramural Research, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, in addition to being Chief, of the Section on Molecular Biophysics, at the NIH campus in Bethesda, Maryland. His research interests lie primarily in the applications of vibrational infrared and Raman spectroscopic techniques toward the elucidation of the conformational, dynamical, thermodynamic, and functional properties of both intact and model membrane assemblies and related systems. Emphasis is placed on investigating the specific lipid-lipid and lipid-protein interactions governing biomembrane reorganizations. In particular, his efforts are directed toward defining and characterizing lipid microdomain formation as it pertains both to the existence of lateral heterogeneities and transverse asymmetries within biological membranes and to the ability and extent of these fluctuating microclusters, or domain motifs, to modulate integral membrane protein behavior. He has been at the forefront of developing spectroscopic infrared, Raman and visible reflectance imaging instrumentation. Specifically, his laboratory has provided pioneering technologies and studies in spectroscopic Fourier-transform infrared and Raman microimaging. Current efforts are in actively translating laboratory imaging research into clinical venues ranging from monitoring disease progression by means of spectroscopic histopathologic classifications to in vivo hyperspectral visible reflectance imaging for assessing tissue perfusion, vascular disease and endothelial dysfunction. Recent research efforts also involve the use of vibrational infrared spectroscopic imaging to pharmacodynamically characterize, monitor and quantify molecular changes mediated by specific drug introduction.

Dr. Levin has been internationally recognized for his spectroscopic accomplishments and has been honored with many awards, including the Bomem-Michelson Award by the Coblenz Society, the Meggers Award (three separate award occasions) presented by the Society for Applied Spectroscopy, the distinguished Harold A. Iddles Lecture Series sponsored by the University of New Hampshire, and is a Fellow of the American Physical Society's Biophysical Division and, separately, a Fellow in their Division of Chemical Physics. He has also received the Lippincott Award in Vibrational Spectroscopy presented by the Optical Society of America. Dr. Levin is a Fellow of the Society for Applied Spectroscopy and has received Honorary Membership in the Society for his pioneering technologies and studies in spectroscopic Fourier transform infrared and Raman microimaging. Dr. Levin has also received the New York Section of the Society for Applied Spectroscopy Gold Medal Award for his spectroscopic research contributions. He has served on numerous editorial and foundation advisory boards and committees in various leadership capacities, has lectured extensively, and has authored and coauthored approximately two hundred and thirty publications, in addition to several patents, over the course of his career. Dr. Levin is a member of the American Chemical Society, the American Physical Society, the American Society for Biochemistry and Molecular Biology, the Biophysical Society, the Coblenz Society, and the Society for Applied Spectroscopy.

**Dinner Reservations:** Please email Carolyn Benga at [crbssp@yahoo.com](mailto:crbssp@yahoo.com) or call (412) 487-0915 to make dinner reservations NO LATER THAN FRIDAY, September 11, 2009. Dinner will cost \$8 and checks can be made out to the SSP. If you have dietary restrictions, please let Carolyn 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.

## Earth Day Illustrated Haiku Contest Winners

As part of the 2009 Chemists Celebrate Earth Day (CCED) celebration, the Pittsburgh Section sponsored an illustrated haiku contest for students in grades K-12. The topic for the 2009 CCED program was air, with the theme "Air-The Sky's the Limit." First place winners were selected from four grade categories: K-2<sup>nd</sup>, 3<sup>rd</sup>-5<sup>th</sup>, 6<sup>th</sup>-8<sup>th</sup>, and 9<sup>th</sup>-12<sup>th</sup>. Each winner received a check for \$50 and their winning haiku's were entered into the national illustrated haiku poetry contest sponsored by the ACS's Office of Community Activities and Committee on Community Activities. Honorable Mention was also selected for each grade category, with each winner receiving a CCED gift. For the 2009 contest, a total of 770 entries were received from 41 schools! The Pittsburgh Section wishes to thank all of the students who submitted entries, as well as all of the teachers who encouraged their student's participation in the contest.

And the winners of the 2009 Pittsburgh Section's CCED illustrated haiku contest:

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

**1<sup>st</sup> Place:** Julianne Jarek\*, Herbert Clark Hoover Elementary School

**Honorable Mention:** Morgan Meer, Jubilee Christian School

### 3<sup>rd</sup>-5<sup>th</sup> Grade

**1<sup>st</sup> Place:** Caitlyn McCloskey, J.W. Burkett Elementary School

**Honorable Mention:** Raegan Smith, Fort Cherry Elementary School

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

**1<sup>st</sup> Place:** Hope Steinmetz, David E. Williams Middle School

**Honorable Mention:** Amanda Alexander, Hopewell Memorial Jr. High

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

**1<sup>st</sup> Place:** Rachell Conner, Norwin High School

**Honorable Mention:** Angela Litvin, Bishop McCort High School

Congratulations to Julianne, Caitlyn, Hope, and Rachell! \*Special recognition goes to Julianne Jarek for winning 1<sup>st</sup> Place in the national illustrated haiku poetry contest sponsored by the ACS.

*Submitted by V. Michael Mautino*



## Library of Chemical & Chemical Engineering Magazines Available

Dr. Bernard Lerner, a 65 year member of the American Chemical Society, passed away in March of 2009 leaving behind a large library of chemical and chemical engineering magazines. The magazines are bound in volumes and are in good condition.

The library includes:

- Hard Bound Journals Chemical Engineering Progress (1947-1992)
- American Institute of Chemical Engineering Journal (1967-1992)
- I & EC Research, 1968-1992; Unbound issues 1992-2005
- Environmental Progress, 1982-1989
- Industrial & Engineering Chemistry Environmental, 1944-1970
- Science & Technology, 1967-1992; Unbound 1992-2005
- Journal of Air Pollution Control, 1966-1992
- Analytical Chemistry, 1947-1949

If you or your organization is interested in the library please contact, Betsy Cook at 412-828-6080.

## The Most Energy-Efficient Conservatory in the World! First Place: 2008 Evergreen Awards

The Energy Technology Group was treated to an unexpected pleasure on May 15, when 12 members and guests were given a cook's tour of the Phipps Conservatory and Botanical Gardens in Schenley Park. Executive Director Richard Piacentini was our guide.

We attended with the expectation of seeing an energy efficient building and many exotic plants. We came away having witnessed a tour of an enchanted forest using more natural energy than any other conservatory in the world. Our one-hour tour could easily have been extended to three with still more to see.

Phipps Conservatory and Botanical Gardens, a 14-room Victorian landmark built in 1893, began planning an energy-efficient expansion in 2003 to blend with the century-old structure. As the third building in a five-building program, the new 3/10 acre Conservatory was constructed in 2006 to house tropical forests, two waterfalls, a canopy-layer tree-top walkway, hidden grottos, fern garden, public gathering spaces and educational discovery and engaging learning areas, such as a research station and an indigenous healer's hut (designed to educate visitors about various cultural topics, such as medicines from the rain forest). Thailand's forests were profiled in 2008, followed by Headwaters of the Amazon in 2009.

Phipps is a technical person's and environmentalist's Mecca. The tropical forest conservatory incorporates passive solar technology and natural air conditioning. Phipps' is leading a green-building renaissance in Pittsburgh with the design of a new building that will be net zero energy using on-sight renewable sources to provide all of the buildings energy needs.

Consider the energy and conservation measures it employs. The new building will possess a self-contained water supply. Rainwater from the rooftops is

treated onsite, storing potable water in a nearby lagoon for dry months and treating sanitary water in a constructed wetland. The facility uses waterless urinals and compostable café drinking cups. It replaced its lawn-irrigation system with drought-resistant grass. It practices 100 percent organic lawn care.

The Conservatory possesses a self-contained energy supply system. A 5-kw solid oxide fuel cell co-generation system supplies all the electricity for the newly constructed portion of the conservatory by converting the methane into electricity with about a 70 percent efficiency. Without combustion, the cell doesn't generate the pollutants commonly associated with traditional heating systems. The cell also reduces carbon-dioxide emissions, and Phipps administrators plan to use plants to sequester what CO<sub>2</sub> the fuel cell does produce.

Buried earth tubes also became an integral part of the 100 percent passive cooling system. Six concrete tubes, 24 inches in diameter and 300 feet long, were placed 15 feet below grade where the earth holds a constant temperature of 55° F year round. Warm outside air is cooled in the tubes, and a vacuum from the roof vents draws the cooled air throughout the Conservatory. An average conservatory cooling system costs approximately \$750,000 and operates approximately nine months of the year. The price of the Tropical Forest earth tubes was \$550,000 and operating costs are negligible.

The Conservatory roof slopes downward from a 60-foot high wall on the south side of the building to catch the winter sun. To capture the maximum sunlight during winter, the south wall consists of single-pane glass, and insulated double-pane glass for the roof prevents heat loss. Staggered roof vents eliminate the need for mechanical ventilation and cooling. The 3/10 acre tropical forest exhibit deploys a roof venting system and geo-

thermal tubes for passive cooling in a \$7.5 million glasshouse.

Phipps also plans to open the Center for Sustainable Landscapes, which will house research, administration and education offices. Scheduled for opening in 2010, this structure will accomplish a goal of "living building" by operating at zero net energy by generating its own energy with renewable resources and capture all of its water on site. It will function without city water or electricity. Solar-powered photo-voltaic cells will provide all the electricity needed.

Phipps is computer-literate. A computer connected to a weather station triggers heating of sidewalks using waste heat when snow or ice is detected, and opens and closes vents according to internal conditions and wind direction and speed. A computer-controlled fogging system cools the air and creates humidity for the conservatory's plants and the conservatory uses excess heat from the fuel cell to create tempered water for a reverse-osmosis system. Heat from the fuel cell also is used to provide warm water for the tropical plants. The fuel cell is on public display to inspire curiosity and inform visitors about its environmental benefits.

Computer-controlled shade cloths below the roof are tied electronically to a weather station and perform dual functions. When deployed during the day, they protect the plants from too much sunlight. The shades are made of reflective Mylar (sprayed aluminum coated) that become thermal blankets at night to slow radiant heat loss. Plant root-zone heating allows nighttime temperatures to be lowered by 10° F (5.5° C). The combination of double-insulated glass, thermal blankets and root-zone heating saves a calculated 1,526 million BTUs annually compared with traditional single-pane roof glass.

*Continued on page 7*

## 30<sup>th</sup> Annual Pittsburgh Chemistry Olympics Winners

The Pittsburgh Chemistry Olympics originated thirty years ago with 10 schools and 40 students participating. This year 33 High Schools with 80 teams and 240 students participated. The Pittsburgh Section of the American Chemical Society jointly sponsors The Chemistry Olympics with the University of Pittsburgh Chemistry Department and the Society for Analytical Chemists of Pittsburgh.

Schools may enter three teams. Each team consists of three members. There are three categories. Category I is first year chemistry, Category II is second year chemistry, and Category III is advanced organic chemistry.

### Category I

**First Place** Gateway High School  
Coach: Tim Lattanzio  
Sam Rosko, Kristofer Pomiecko, Michael Richards

**Second Place** South Park High School  
Coach: John Pastorius  
Matt Conley, Aaron Crain, Aaron Sproul

**Third Place** North West Pennsylvania Collegiate Academy  
Coach: Shawn Feiock  
Lori Radder, Nicde Crouch, Katie Brown

### Category II

**First Place** North Allegheny High School  
Coach: Robert Wienand  
Kostya Borisov, Adriana Jensen, Aidan MacDonagh

**Second Place** Riverview High School  
Coach: Marion Carson  
Eddie Grystar, Rebecca McAfee, Hayley Flowers

**Third Place** Greensburg Central Catholic  
Coach: Sister Mary Helen Meyer  
Kenneth Swidwa, Chris Clarke, Madeline Leo

### Category III

**First Place** Penn Trafford High School  
Coach: Dr. Helen Loughner  
Garry Smyda, Cassandra Dutt, Alexander Pingel

**Second Place** North Allegheny High School  
Coach: Robert Wienand  
Shivam Verma, Kevin Liu, Nimish Telong

**Third Place** Mount Lebanon  
Coach: Matt Roddy  
Dale Wang, Rich Karp, Ritchie Phan

## The Most Energy Efficient Conservatory Continued...

As an added bonus, the ability to shade the conservatory reduces water consumption.

Simulation software energy modeling shows that a similar-sized conservatory of traditional design would incur heating costs of \$16,800 per year. The Phipps Conservatory is predicted to have an annual heating bill of \$2,400, and there virtually are no costs to cool the space. The facility uses no- or low-VOC paints, adhesives, carpet and substrates.

Phipps was the 2008 first-place winner in the Eco-Structure Magazine (Portland, Oregon) inaugural Evergreen Awards Commercial. The Evergreen Award honors the best innovative green projects and recognizes individuals who are moving the green-building industry forward and recognizes the best in sustainable commercial and residential projects, as well as excellence in building performance.

To enjoy this new addition to Pittsburgh's continuing Renaissance, Phipps is open daily from 9:30 a.m. to 5 p.m. and until 10 p.m. on Fridays. Café Phipps and The Shop at Phipps are open during most Conservatory hours. Admission rates are \$10 for adults, \$9 for seniors (62 and over) and students with ID, and \$7 for children ages 2 to 18. Phipps members and children under two are admitted free. For more information, call (412) 622-6914 or visit [www.phipps.conservatory.org](http://www.phipps.conservatory.org). The Energy Technology Group was very pleasantly surprised. And the visual experience is overwhelming.

*Submitted by: Tom Ruppel*

## Carnegie Mellon's Krzysztof Matyjaszewski Receives EPA's Presidential Green Chemistry Challenge Award

WASHINGTON — Krzysztof Matyjaszewski, the J.C. Warner Professor of the Natural Sciences and University Professor at Carnegie Mellon University, received the 2009 Presidential Green Chemistry Challenge Award from the U.S. Environmental Protection Agency at a ceremony held Monday, June 22 at the Carnegie Institution of Washington. Matyjaszewski, the second Carnegie Mellon professor to receive the award, will be recognized in the academic category for the development of an environmentally low-impact form of Atom Transfer Radical Polymerization (ATRP), a widely used method for preparation of functional polymers.

The EPA's Presidential Green Chemistry Challenge promotes research and development of less hazardous alternatives to existing technologies in an effort to reduce or eliminate waste, particularly hazardous waste, in industrial production.

"Approximately 400 billion pounds of synthetic polymers are produced each year. Often, hazardous chemicals are used to produce these important industrial products," Matyjaszewski said. "We've been able to use environmentally friendly chemicals, such as vitamin C, to reduce the level of catalyst employed in ATRP by a factor of over 1,000. This both enhances the scope of the procedure and reduces the environmental impact of polymer fabrication."

Developed at Carnegie Mellon by Matyjaszewski in 1995, ATRP is among the most effective and most commonly used methods of controlled radical polymerization (CRP). It allows scientists to easily form polymers by piecing together their component parts in a controlled fashion. Assembling polymers in such a manner has allowed scientists to create a wide range of polymers with highly specific, tailored functionalities. This technology also allows for the production of "smart" materials that can respond to altered environments, such as changes in pressure, acidity, light exposure or other variables.

Polymers created using ATRP have been used for coatings, adhesives, lubricants, cosmetics and electronics and are currently

under investigation for use in the medical and environmental fields.

ATRP relies on a specialized copper catalyst to form a polymer chain. In the early stages of ATRP development, high levels of copper catalyst were required to maintain the process. This problem persisted even after more active catalysts were developed. As a result, the materials manufactured using ATRP contained high levels of copper. In 2006, Matyjaszewski and colleagues introduced a green approach to ATRP that incorporates environmentally benign reducing agents, like vitamin C and sugars, to regenerate the active form of the catalyst. The reducing agents chemically lessen the amount of copper catalyst needed for the reactions by as much as 1,000 times, significantly reducing the output of potentially hazardous materials employed in ATRP and used for purification.

"Kris is a dedicated chemist whose work has revolutionized the way we produce polymers," said Richard McCullough, vice president of research at Carnegie Mellon. "There is no doubt that his discovery of an environmentally friendly form of ATRP will lead to new green materials and technologies that will change the world for the better."

Both the scientific and industrial communities have largely accepted ATRP as an important way to produce polymers. As of 2008, Matyjaszewski's group published more than 500 papers on CRP, and these papers have been cited more than 30,000 times, making Matyjaszewski one of the most cited researchers in the field of chemistry.

In 2006, ATRP formed the basis for a Carnegie Mellon spin-off company called ATRP Solutions that uses the technology to develop next generation materials for evaluation by their customers in their targeted markets. Along with ATRP Solutions, seven corporations, including PPG Industries, Dionex, Ciba, Kaneka, Mitsubishi, WEP and Encapson, have licensed ATRP and have begun to produce highperformance, less-hazardous, safer materials for a wide variety of applications.

Matyjaszewski is the second chemist from Carnegie Mellon to win this award since its inception in 1996. Terry Collins, the Thomas Lord Professor of Chemistry, received the award in 1999 for the development of TAML oxidant activators, catalysts that safely remove toxic chemicals from water.

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Spectroscopy Society of  
Pittsburgh

## Technology Forum

Wednesday, September 16, 2009

Speaker TBA

Duquesne University

Mellon Science Hall, Laura Falk Hall  
5:30 p.m.

## Pittsburgh Section Honors 50 and 60 Year ACS Members

The Pittsburgh Section honored 50 and 60 year ACS members at the Pittsburgh Chemists Club meeting on May 26, 2009. Pittsburgh Section President, Dr. Nick Tsarevsky and Ms. Diane Cohen, Pittsburgh Chemists Chair, presented certificates to those in attendance. Those not in attendance were sent a certificate and note of appreciation. The evening's speaker Dr. Larry Viehland from Chatham University concluded the Chemists Club 74<sup>th</sup> program year.

50 Year ACS Members: Mr. Robert W. Baudoux, Sr., Dr. Albert Caretto, Mr. Glenn Craver, Mr. Dale DeBlander, Mr. James Fasnacht, Dr. Gabriel Fusco, Dr. Raymond Kramer, Dr. Patty Laswick, Dr. Richard Morrison, Mr. John Ostrowski, and Mr. Richard Albert Trudel.

60 Year ACS Members: Mr. William Emmerson Boggs, Dr. Robert Chaiken, Dr. Sidney Friedman, Mr. Thomas Junker, Ms. Helen Lamrey, Dr. Aryeh Melnick, Mr. George Pruett, and Mr. George Wesley Perkins.



50 and 60 Year ACS Members in attendance at the May Pittsburgh Chemists Club Meeting: From left to Right: Dr. Edward Martin (50 yr.), Dr. Robert Chaiken (60 Yr.), Dr. Raymond Kramer (50 yr.), Mr. Dale DeBlander (50 yr.), Mr. Robert W. Baudoux, Sr. (50 yr.)

## Nominations for 2011 ACS National Awards

The American Chemical Society awards program is one of the means by which the society meets its obligation "to encourage ... the advancement of chemistry in all its branches, the promotion of research in chemical science and industry, [and] the improvement of the qualifications and usefulness of chemists." The continuing excellence of the ACS awards program requires that a number of highly qualified chemistry professionals be nominated and that great care be taken in preparing the nominations.

Nominating Procedure for ACS National Awards:

Forms for nominations and supporting information as well as a detailed description of ACS national awards are available online at [www.acs.org/awards](http://www.acs.org/awards).

Any individual may submit a nomination for an award, unless that individual is a member of the selection committee for the same award. However, selection committee members may submit nominations for other awards.

Nominations and inquiries concerning awards should be directed to the Office of the Awards Programs, e-mail: [awards@acs.org](mailto:awards@acs.org).

The deadline date for all nominating material for 2011 ACS National Awards is November 1, 2009. Earlier transmittal is encouraged.

*ACS Cut and Paste May/June 2009*

# Business Directory

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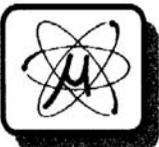
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### Crucible Deadline

The deadline for items submitted to The Crucible is the 1<sup>st</sup> of the month prior to publication.

For example, all items for the September 2009 issue must be to the editor by August 1, 2009.

### The Crucible

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## Pittsburgh Area Calendar

### *Wednesday, August 26*

**Western Pennsylvania Energy Heritage and Future**  
Heinz History Center

### *Thursday, August 27*

**Drake Day Extravaganza**  
Drake Well Museum Complex

### *Monday, September 14*

**Society for Analytical Chemists of Pittsburgh**  
Speaker TBA, Duquesne University, Laura Falk Hall

### *Wednesday, September 16*

**Spectroscopy Society of Pittsburgh**  
**Technology Forum, Speaker TBA**  
***“Interlacing Basic Biophysical Research with Translational Clinical Studies: From Bench to Bedside and Back”***  
Ira W. Levin, Ph.D., National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health  
Duquesne University, Mellon Hall of Science (Laura Falk Hall)

*Additional chemistry related seminars and events in the Pittsburgh area can be found on the Pittsburgh Section’s website at <http://membership.acs.org/P/Pitt>*