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the Catalyst

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April 2007



**APRIL SPEAKER
Dr. Kevin B. Hicks**

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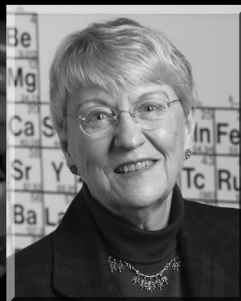
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April 2007

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ADVANCE NOTICE

MAY MEETING

Bassam Shakhshiri at the MARM

and

Teaching Awards

Ursinus College

THURSDAY, May 17th, 2007

See the MAY issue of *the Catalyst* for details,
call the Section Office at (215) 382-1589, email PhilaACS@aol.com

From The Chair

David Cichowicz



I would like to take this opportunity to publicly thank Dr. Roger Murray and Saint Joseph's University for hosting the February Section meeting. The presentation by Dr. John Collier was excellent and everyone present learned about the complexities of making scotch.

This month is a busy one for the Section. On Wednesday, April 18th, 2007, the Eastern Regional Research Center in Wyndmoor, PA, will be designated as a National Historic Chemical Landmark by the American Chemical Society for the development of the potato flake process and related food dehydration technologies. This is of special interest to me since I spent almost 10 of my summers in the late '80s and early '90s at ERRC working with Dr. Michael Haas on various aspects of plant triglyceride utilization. Professionally and personally, this was a very rewarding time of my career. I was able to pursue a variety of research opportunities and learned many new techniques. I also made a lot of friends, many of whom I still have contact with today. For more information about ERRC and this event visit their website at www.ars.usda.gov/naa/errc.

This is also the month that we recognize the outstanding graduating seniors from our area colleges and universities. We will once again be honoring them at our April dinner and presenting them with certificates of their accomplishments. The speaker for the evening will be Dr. Kevin B. Hicks, one of my friends from ERRC, who will be speaking about some of the research that has taken place at ERRC over the past 67 years and the everyday products that have resulted from that research. I hope to see many of you at the meeting!

NEWS ATOMS

Franklin A. Davis, professor of chemistry at Temple University, received the John Scott award from the board of directors of the City Trusts of Philadelphia. The award honors those who have made outstanding contributions to the "comfort, welfare, and happiness" of humanity. Davis was recognized for synthetic methods developed and now widely used to aid in the synthesis of anti-tumor and other bioactive drugs.

Catherine T. Hunt, president of ACS and leader of technology partnerships at Rohm and Haas, was elected a Fellow of the American Association for the Advancement of Science.

Eric Meggers, chemistry professor at the University of Pennsylvania, was appointed chaired professor of chemical biology at the University of Marburg in Germany.

DEATHS

Walter A. Macht, chemical engineer formerly with Betz Laboratories, June 15th, 2005 at 77. He spent his entire career with Betz, providing technical support to customers in the treatment of boiler feedwater and cooling water systems. In 1974 he assisted in the formation of the subsidiary, Betz Entec, Inc., and worked in product management and development, and technical training. Macht retired in 1993 as assistant vice president of environmental and regulatory affairs. He was a 54-year member of ACS and enjoyed mineralogy and jewelry-making.

Samuel C. Jones, chemical engineer with Sun Oil. He joined Sun in 1928 and retired in 1966. He was a 78-year member of ACS and was an avid bird-watcher and photographer.

Andrew J. Gubicza, Sr., a 61-year member of ACS, June 15th, 2006 at 87.

Harry Baum, analytical chemist formerly with Rohm and Haas, June 23rd at 90. After short stints with General Cigar Company and US Rubber Co. he served in the European Theatre with the US Army. In 1946 he joined Publicker Industries as supervisor of the analytical laboratory and then moved to Rohm and Haas in 1948. He eventually was responsible for analytical and quality control

services and then worked in the corporate health and safety department before retiring in 1980.

Baum was active in the Philadelphia Section with the analytical group and on the Philadelphia Section award committee. He was also active in the Association of Official Analytical Chemists and was an expert witness for the Collaborative International Pesticide Analytical Council. He was a 68-year member of ACS.

Alfred J. Canale, organic chemist, July 28th at 86. His career included employment with Rohm and Haas, Shell Oil, Tidewater Oil, and Sun Oil.

John W. Boghosian, November 20th at 60. No further details available.

Clifford E. Neubeck, retired biochemist formerly with Rohm and Haas, January 20th at 89. He retired as head of the enzyme laboratory in 1982 when that division was sold to Genencor International. He continued as a consultant to Genencor for eight years.

Claire Cox Cahill, former chemist with the CIA, January 30th at 89. She joined the CIA in the late 1950s and traveled to Europe, the Mideast, South America and Asia to train agents on various spy tools including invisible ink and hidden cameras. She worked on rocket fuel science at Rohm and Haas during World War II and was also employed at Redstone Arsenal where she worked on the US space and missile programs.

Sister Mary Leo Bryan, former chemistry professor at Rosemont College, February 15th at 83. She taught high school math, chemistry and religion before joining the Rosemont faculty in 1955. While at Rosemont she studied clinical pastoral education and completed a chaplain's internship. She left Rosemont in 1991 to become chaplain at Washington Hospital Center in Washington.

Alan G. MacDiarmid, chemistry professor and Nobel scientist, February 7th at 79. Born in New Zealand and educated there and in the United States and Britain, he joined the chemistry department of the University of Pennsylvania in 1955 and was appointed full professor in 1964. At the time of death he was the department's Blanchard Professor in Chemistry.

Penn named the Alan MacDiarmid Endowed Term Chair in Chemistry in his honor. MacDiarmid was instrumental in establishing the Jilin MacDiarmid Institute of organic nanomaterials in China and the MacDiarmid Institute of Materials Science and Nanotechnology at Victoria University of Wellington, New Zealand. He was author of over 600 research papers and held 20 patents.

Among various honors MacDiarmid received the Chemical Pioneer award of the American Institute of Chemists, the Top 100 Innovation award from *Science Digest*, and the University of Pennsylvania's medal for distinguished achievement. In 2000 he shared the Nobel Prize in Chemistry with Alan J. Heeger and Hideki Shirakawa for their discovery of electricity conducting polymers.

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Chemistry and Crime from a Real CSI Perspective

Detective Michael McGinnis

Date and Time: April 11th, 2007 at the Cynwyd Club, Bala Cynwyd, PA; Networking, 5:30 PM; Dinner, 6:30 PM; Talk and Business Session, 7:30 PM.

Abstract: Many of us have watched *CSI* and, as chemistry-oriented folks, questioned a few of the things we have seen. We are fortunate to have Detective McGinnis join us to discuss factors in crime-scene investigations that will improve our understanding of this fascinating topic. He will dispel some of the myths and misconceptions held by the public, particularly with regard to speed of obtaining results, DNA, fingerprinting use and offer his view of why this topic is so popular today contrasted to 10+ years ago.

Reservation: To make or cancel a dinner reservation, email CCNReservations@aol.com or call the ACS office at (215) 382-1589 by April 5th for the discounted price of \$25. Late reservations and walk-ins subject to availability.

APRIL MEETING

THE PHILADELPHIA SECTION, AMERICAN CHEMICAL SOCIETY

presents

Dr. Kevin B. Hicks
Eastern Regional Research Center, ARS, USDA

*USDA's Eastern Regional Research Center
67 Years of Scientific Discovery
(and a National Historic Chemical Landmark!)*

and

Presentation of Scholastic Achievement Awards

Thursday, April 19th, 2007

Cywyd Club
332 Trevor Lane
Bala Cynwyd, PA

Social Hour at 5:00 PM

Dinner at 6:00 PM

Talk following dinner

Dinner cost: \$25.00; students with reservation and ID: \$13.00

DINNER RESERVATIONS should be made by calling Mrs. Libby Harper at the Section Office, (215) 382-1589, or emailing PhilaACS@aol.com by **5:00 PM on Thursday, April 12th**. **UNCANCELLED RESERVATIONS WILL BE BILLED.**

DIRECTIONS: From City Line Ave. (Route # 1) drive north on Conshohocken State Road (Route # 23) about three long blocks. Continue north on Trevor Lane instead of following Route #23 left. At "Y" in road one block north on Trevor Lane turn left where clubhouse and parking are on the left side of the road. Please park in lot if space is available; otherwise park on Trevor Lane. If lost, call the club at 610-667-4524.

The Board of Directors will meet at 4:00 pm in the Board Room.

MARM 2007

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MEETING of the ACS

May 16 – 18, 2007

Ursinus College

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Symposia

- ♦ Carbon Nanomaterials ♦ Magnetic Materials
- ♦ Excited Electronic States ♦ Sirtuin Biochemistry ♦ Venture Capital Molecules ♦ Alternative Energy ♦ Microwave Synthesis
- ♦ Glycoproteins ♦ Cope Scholars Symposium ♦ Functional Organic Materials ♦ RNA Signaling ♦ CADD ♦ Chemistry and the Law
- ♦ ADME and Toxicology

Technical Sessions

- ♦ Analytical Chemistry ♦ Biotechnology and Bioprocessing ♦ Environmental Interfaces ♦ Inorganic Chemistry ♦ Medicinal Chemistry
- ♦ Organic Chemistry ♦ Physical Chemistry ♦ Presidential Symposium on Green Chemistry ♦ Teaching Forensic Chemistry ♦ Ultrafast Chemical Processes ♦ Undergraduate Research

Special Workshops

- ♦ Forensic Chemistry (High School Teachers)
 - ♦ Three Chemical Safety Workshops
- ♦ Career Services: Interviewing Skills/Resumé Review

Awards

- ♦ E. Emmett Reid Teaching Award
 - ♦ Stanley C. Israel Award
 - ♦ Industrial Innovation Award
- ♦ Chromatography Forum Student Awards

Special Events

- ♦ Walking tour of Ursinus Sculpture Collection
- ♦ Barbeque Mixer ♦ Education Awards Night ♦ Undergraduate Mixer
- ♦ Women Chemists Committee Luncheon and Symposium

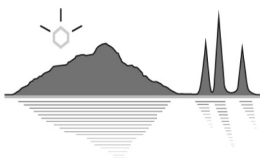
SPEAKER ABSTRACT AND BIOGRAPHY

Dr. Kevin B. Hicks

Eastern Regional Research Center,
ARS, USDA

Abstract: *USDA's Eastern Regional Research Center – 67 Years of Scientific Discovery (and a National Historic Chemical Landmark!).* The Eastern Regional Research Center (ERRC), ARS, USDA in Wyndmoor, PA was founded in 1940 by an act of Congress as a pioneering research center with the mission of developing new uses for agricultural products. Over the last 67 years, this Philadelphia institution has indeed conducted pioneering research in hundreds of areas of fundamental and applied research, resulting in over 8,000 publications and patents to date. In its early years, ERRC focused on defining the composition and quality of East Coast commodities such as milk, honey, maple syrup, and apple cider. Many of these industries' standard operating procedures came from ERRC investigations.

ERRC investigators developed some of the very first sophisticated isotope ratio analyses used by Federal regulators to detect high-profile criminal adulteration of pure honey, orange juice, and apple cider with inexpensive extenders made with diluted corn syrups. ERRC dairy researchers made fundamental discoveries about the structure and function of dairy proteins, being some of the world's first researchers to use protein sequencing and later molecular modeling. Their pioneering research on microbial beta-galactosidase, an enzyme capable of hydrolyzing the milk sugar, lactose, into monosaccharides was used by a local entrepreneur to develop the lactose-free dairy products you see every day in the dairy case of your supermarket. Center researchers conducted research on hides, a major commodity in the Northeast, and developed new methods to tan them with tanning agents that impart sweat resistance and launderability, used in products like hospital bed pads, boots, and golf gloves. More recently, ERRC leather researchers have developed a way to recycle chrome- and



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ANALYSIS FOR THE CHEMICAL ELEMENTS

protein-byproducts from leather-making, a patented process now being used in several parts of the world.

Sometimes discoveries require decades before they result in commercial products. Such was the case of lime soap dispersants, which prevent the deposition of “bathtub ring.” These products were developed at ERRC in the 1960s and are just now are being produced commercially worldwide as environmentally friendly detergents. ERRC researchers conducted the fundamental research during the 1980s-90s that led to the FDA’s approval of irradiation as a safe method to kill microbial pathogens on poultry and ground beef. In the 1950s-60s a group of scientists and engineers, using their knowledge of starch chemistry and food technology, figured out how to take fresh potatoes and transform them into dehydrated flakes, which re-hydrated to make instant potatoes with excellent quality. This “Philadelphia Cook” is used today around the world to make dehydrated potatoes that make their way into hundreds of food products, including the popular potato crisps sold in cylindrical cans. ERRC will be designated a National Historical Chemical Landmark by the American Chemical Society on April 18th for this and related work. ERRC researchers today are on the cutting edge of food safety and security research as well as ensuring tomorrow’s supply of energy in the forms of fuel ethanol and biodiesel from renewable, agricultural feedstock. A review of ERRC’s achievements of yesterday and the pioneering work going on today will be given in this presentation.

Biography: Dr. Kevin B. Hicks is a Research Leader at the USDA-Agricultural Research Service’s Eastern Regional Research Center in Wyndmoor, PA (suburban Philadelphia) where he leads a team of 40 senior and support scientists and engineers conducting research to develop new uses for agricultural commodities and by-products. During the past 19 years, as Research Leader of the Crop Conversion Science and Engineering Research Unit, he has led research to develop new and more efficient processes for the production of fuel ethanol from corn and

barley and to create new valuable coproducts, such as health-promoting nutraceuticals from the ethanol production process. Dr. Hicks is the author of more than 100 peer-reviewed and technical publications and 10 patents as well as numerous presentations to national and international audiences. He is a co-inventor of patents for the ethanol coproducts “Amaizing Oil” (cholesterol-lowering oil from corn fiber), “Zeagen” (a gum arabic substitute made from corn fiber) currently being commercialized by National Starch and Chemical Co., and many other novel products and processes.

Dr. Hicks has served on the Editorial Board for *Carbohydrate Research* and the Publications Committee for IFT (*Food Technology* and *J. Food Sci.*). He has received the following awards for research and technology transfer: 2006 Best Paper Award for Technology and Engineering, American Oils Chemists Society/ADM; 2003 Federal Executive Board Gold Medal for Excellence in “Private Sector Involvement;” 1999 USDA Outstanding Technology Transfer Award; 1998 Federal Laboratory Consortium Award for Excellence in Technology Transfer; 1996 Certificate of Commendation from The Sugar Association, Inc.; 1989 Horace S. Isbell Award in Carbohydrate Chemistry; and the 1985 Arthur S. Flemming Scientific Research Award, Washington DC. Dr. Hicks is an active participant in professional associations including the AACC, AOCS, EPAC, and the American Chemical Society’s Division of Carbohydrate Chemistry, previously serving as the Division’s Chairman.

Kevin lives in Malvern, PA with his wife, Pamela, and children, Christie and Brian, where he enjoys gardening and collecting old John Deere tractors.

SURPRISE

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Save The Date

Wednesday, April 18, 2007
To Recognize an ACS

National Historic Chemical Landmark



Eastern Regional Research Center
Wyndmoor, PA



Plan to join us for a ceremony to designate the potato flake process and related food dehydration technologies, developed at the Eastern Regional Research Center, as a National Historic Chemical Landmark by the American Chemical Society

 Director

Where: Eastern Regional Research Center
600 East Mermaid Lane
Wyndmoor, PA 19038
215-233-6595

Registration and Information at:
www.ars.usda.gov/naa/errc

When: April 18, 2007

What: Symposium
National Historic Chemical Landmark
Designation Ceremony
Luncheon
Lab Tours and Demos

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**586th Board of Directors Meeting
Thursday, November 16th, 2006
Chemical Heritage Foundation
Philadelphia, PA**

Present: D. Kilmartin, V. Tortorelli, C.J. Bruner, D. Cichowicz, A. DeMasi, K. Shaginaw, R. Gates, J. Summers-Gates, E. Davis, D. Cook, D. Thomas.

Excused: M. Cichowicz, G. Molander, D. Voet, C. Rulli, T. Straub, A. Templeton, S.R. Mulligan.

Absent: C. Bentzley, J. Nikelly

Also Present: L. Harper, H. Whalen, A. Heldon, A. Warren, W. Golton, J. Kay, S. Haynie.

The meeting was called to order by Chair Kilmartin at 4:00 PM.

The minutes of the October 2006 meeting were adjusted to reflect a \$2K versus \$3K mini-grant and approved (Motion by D. Cichowicz, Seconded, R. Gates).

COMMITTEE REPORTS:

Finance, Budget and Audit: A copy of a draft budget was provided. Board members were asked to notify George Cowperthwaite of any changes or suggestions as soon as possible. Discussion followed concerning capital transfer versus inter-account transfer.

Publications: National may cease providing local section labels. Swift Printers can handle them for about \$100/month. A request for funding is questionable as postage is uncertain.

Tellers Committee: D. Cichowicz presented the results of the election for Board approval. Section participation was 8.2%. R. Gates seconded the motion. All were in favor.

Government Affairs/Legislative Liaison: Alan Heldon described various offices including the LAN. 12,000 ACS members participate and 60,000 letters/emails have been sent to Congress since 1989. Recently, Mr. Heldon and Katie Hunt visited the offices of two senators and legislators. They discussed science and education matters with staff liaisons. ACS staffers also made several visits. Mr. Heldon described ways to increase member participation in LAN at the local section level by writing letters (via the ALERT system) and visiting local legislators both in Washington and locally. Meetings generally last about 8 minutes with an aide familiar with the topic. Local sections can also invite politicians to group meetings or sponsor an NCW event. Mr. Heldon agreed to provide the Board with the names of our local section LAN members.

Nominations: Section Service Awards will be presented at the December meeting to the following: Section Service Award – Margaret Matthews, Kathleen Shaginaw; Ulyot Award for

Meritorious Service – Georgia Arbuckle-Keil, Eleanor Brown, Ella Davis, Sharon Haynie, Cheryl Martin, Wilford Mendelson, Hank Whalen.

OFFICER REPORTS:

Chair (D. Kilmartin): The deadline for the ACS Congressional Fellowship is December 31st, 2006. NCW posters have been submitted and will be reviewed at the December Board meeting. Chair Kilmartin described the Science Café, a monthly meeting for non-scientists to discuss scientific issues. The format is generally a lecture or video. She agreed to pilot one at perhaps a Barnes and Noble. The Board requests that the Treasurer add a line item for the Science Café to the Treasurer's report.

Chair-Elect (D. Cichowicz): Chair-elect Cichowicz presented the proposed 2007 program. Only the September monthly meeting is without a planned speaker at this time.

Secretary (A. DeMasi): No report.

Treasurer (C.J. Bruner): The Board approved the treasurer's report for October (J. Summers-Gates seconded with one abstention from R. Gates who was not present at the October meeting). The Board approved the Treasurer's report for September (J. Summers-Gates seconded with one abstention from A. DeMasi who was not present at the September meeting).

OTHER BUSINESS:

National Chemistry Week – Expand Your Horizons was held on October 21st at Chestnut Hill College. 126 6th grade girls from 36 schools participated. There were 43 volunteers. Julia O'Neill was the keynote speaker. The Graduate School Forum was held at Villanova University on November 13th. 20 Universities presented posters and about 65 students attended. Despite low attendance, university reps agreed that the program is worthwhile.

MARM 2007 – S. Haynie described MARM 2007 activities around Program, Fund-raising, and Publicity. Lynn Abell and Tony Addison are the program chairs. A great structure is already in place. The call for papers will go out next week. Vince Gale has offered to assist with MARM advertising. The goal is 800 participants. Letters will be sent to Chairs of Departments and Corporate Research Centers. D. Kilmartin also offered to send a notice via email blast.

There being no other business, the Board meeting was adjourned at 5:40 PM.

Respectfully submitted,
Anne S. DeMasi, Secretary

587th Board of Directors Meeting
Thursday, December 14th, 2006
McCall Meeting and Conference Center
Upper Darby, PA

Present: D. Kilmartin, V. Tortorelli, T. Straub, A. DeMasi, K. Shaginaw, R. Gates, J. Summers-Gates, G. Molander, S.R. Mulligan, D. Cook, C.J. Bruner, E. Davis, D. Cichowicz, D. Thomas.

Excused: M. Cichowicz.

Absent: C. Bentzley, A. Templeton, C. Rulli, J. Nikelly, D. Voet.

Also Present: L. Harper, J. Burke, G. Cowperthwaite.

The meeting was called to order at 4:35 PM by Chair Kilmartin. The minutes for the November 2006 meeting were approved as amended (C.J. Bruner, motion, V. Tortorelli, second). All were in favor with three abstentions due to absences.

COMMITTEE REPORTS:

Finance, Budget and Audit (G. Cowperthwaite): G. Cowperthwaite provided the Board with a history of the FBA reports for the past 13 years. According to guidelines, the Board may transfer \$12K from our investments into our current operating funds. We are not depleting capital at this time.

The Board also discussed the Mass Spectrometry budget request and will approve the new budget in January.

Nominations (D. Cook): The Awards Committee is seeking two members to cover Medicinal and Organic Chemistry. D. Cook asked the Board to email her some recommendations.

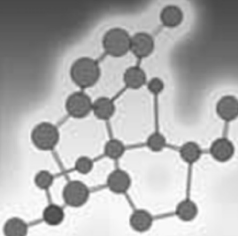
Tellers (T. Straub): The election results for 2007 require that we replace E. Davis as Director for one year (2007). The Committee recommends that we ask G. Preti to serve for 2007 and move down the list as has been past practice if Preti is not able to serve. All were in favor. The Board also recommended asking Zheru Zhang to serve as Alternate Councilor for 2007 replacing Kathryn Lysko.

OFFICER'S REPORTS:

Chair (D. Kilmartin): D. Kilmartin reported that E. Davis has registered for the Chair-Elect Conference in Baltimore.


Chair-Elect (D. Cichowicz): D. Cichowicz is seeking easels for the January meeting. The February meeting will be held at St. Joseph's University. A speaker has been identified for the Student Awards meeting though a location needs to be determined.

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Secretary (A. DeMasi): No report.

Treasurer (C.J. Bruner): As of November, there is about \$20K available for immediate use. C.J. Bruner would like to transfer \$10K from our capital account to cover expenditures for January and February, 2007. Motion approved (D. Cook) and seconded (J. Summers-Gates).

MARM 2007:

All aspects on track.

AWARDS:

Section Service Awards were presented by Dr. James Burke to the following: Marge Matthews, Kathleen Thrush Shaginaw.

Ulyot Awards for Meritorious Service were presented by Dr. James Burke to the following: Ella Davis, Sharon L. Haynie, Wilford Mendelson, Hank Whalen.

Salutes to Excellence were presented by Chair Kilmartin to the following: Dr. James Burke, Anne DeMasi, Dr. Kathleen Thrush Shaginaw, Dr. Thomas Straub.

There being no other business, the Board meeting was adjourned at 5:45 PM.

Respectfully submitted,

Anne S. DeMasi, Secretary

CHEMISTS CELEBRATE EARTH DAY April 22nd, 2007

The 2007 Community Event for Chemists Celebrate Earth Day is *Recycling All We Can*. Celebrate the chemistry in recycling by sponsoring a recycling activity that will benefit the community. Provide recycling information at your event and document it with a photograph that you submit to **ACS's Earth Day Flickr site!** (www.flickr.com/groups/acs_cced/).

Kindergarten-12th Grade Illustrated Haiku Contest

As part of Chemists Celebrate Earth Day 2007 and in recognition of its theme, *Recycling—Chemistry Can!*, the American Chemical Society is sponsoring an illustrated haiku contest for students in Kindergarten - 12th grade. Students are invited to produce

an illustrated haiku poem demonstrating the theme, *Recycling—Chemistry Can!*, and should reflect some aspect of the chemistry of recycling: materials, processes, or uses for recycled materials. See http://acswebcontent.acs.org/earthday/recycle07/07CCED_contest.pdf for contest details. Only three poems per grade can be submitted to: Deb Kilmartin, Philadelphia ACS, Dept. of Chemistry, University of Pennsylvania, 34th & Spruce Sts., Phila. PA 19104-6323 no later than **APRIL 4th** or as a pdf to kilmartind@msn.com by **APRIL 9th**.

Chemists Celebrate Earth Day Video Contest

As part of the Chemists Celebrate Earth Day 2007 and in recognition of its theme, *Recycling—Chemistry Can!*, the American Chemical Society is sponsoring a video contest for college and university students. Students are invited to produce a video illustrating contributions made by chemists to the advancement of recycling chemistry and the environment. See official rules and consent forms at: www.chemistry.org/portal/a/c/s/1/acsdisplay.html?DOC=oca%5cearthday%5c07_cced_videocontest.html. Only one entry per school will be considered for the national competition. Send to address on the Entry Form.

Free Publication Access in Honor of Earth Day

The *Journal of Chemical Education* (*J.Chem.Ed.*) is celebrating with us again by including many theme-related articles and activities in their February issue. They are offering **FREE ACCESS** to the materials online. Let the teachers in your area know of this outstanding resource available at www.jce.divched.org/HS/Journal/Issues/2007/FebACS/.

Also in honor of Earth Day, ACS Publications is offering free access to selected resources in honor of Chemists Celebrate Earth Day. Resources will be available online throughout the month of April at pubs.acs.org/promo/earthday.

BOOK REVIEW

Molecular Heterogeneous Catalysis by Rutger A. van Santen and Matthew Neurock. 6 ½ by 9 ½ inches, 488 pages, perfect bound, stiff covers, Wiley VCH Verlag, Weinheim, Germany 2006. ISBN 978-3-527-29662-0, \$89.95.

The role of catalysis in industrial synthesis as well as our knowledge of the mechanisms of enzymes in living organisms continue to expand. Advances in spectroscopy and our improved understanding of molecular interactions have led to increased knowledge of the importance of heterogeneous catalysis and its use as a predictive science.

Following a review of catalysis by the authors, they detail our understanding of the principle of molecular heterogeneous catalysis, the reactivity of transition-metal surfaces, and shape-selective and microporous catalysts (zeolites). Subsequent chapters focus on catalysis by oxides and sulfides, mechanisms for aqueous phase heterogeneous catalysis and electrocatalysis, and mechanisms in biocatalysis.

Moving beyond catalysis as a molecular event, the authors explore the self-organization and self-assembly of catalytic systems, for example self-repair of a catalytic site after a reaction to restore it to its initial state. They then examine heterogeneous catalysis in living systems.

A postscript chapter identifies the key catalytic principles discussed in the book with reference to specific chapters. Some examples include the Sabatier principle, surface topology and geometry effects, transient reactive intermediates, cluster size effects, selectivity, orbital symmetry control, diffusion in zeolites, proton transfer mechanisms, electrocatalysis, biomineralization, aggregation kinetics, and many others.

An appendix reviews the computational methods of electronic structures, atomistic, and kinetic simulation methods with pertinent references. As usual, literature references appear at the end of each chapter and a subject index concludes the book.

— Alan Warren

GUIDELINES FOR STUDENT AFFILIATE CHAPTERS TO REQUEST FUNDS TO ATTEND NATIONAL ACS MEETINGS

Undergraduate students from American Chemical Society (ACS) Student Affiliate Chapters in the Philadelphia Section are encouraged to consider attending National Meetings of the ACS. In this regard, a limited amount of funding will be provided to chapters requesting sponsorship based on the following general guidelines.

General Guidelines

1) First consideration will be given to student(s) who wish to attend a National Meeting of the ACS to give a presentation (oral or poster). Students attending for other purposes, i.e., to receive an award or attend a specific workshop, etc. are also eligible to apply for support.

2) The student(s) must have requested support from their college or university (including department and/or advisor) to assist in defraying the travel costs. Please attach a copy of the correspondence.

3) The student(s) should have a clear idea of the benefits of attending the conference. Please attach a short paragraph from each student indicating which sessions, including workshops, etc. which the student plans to attend and why these sessions will help them obtain their professional goals.

All applications must include an itemized list of the projected costs of the trip, i.e., registration, airfare, train or car expenses, hotel, etc., and indicate which of these costs (if any) are being provided by other sources.

An application for travel support can be made at any time to the Philadelphia Section, but for full consideration, the application must be received by the Section office by May 31st for the Fall meeting.

The Philadelphia Section will evaluate all applications received by the deadline and vote at the February meeting for the Spring ACS meeting applications and at the June meeting for the Fall ACS meeting applications. The amount of funding available may be

influenced by the number of applications for a particular meeting and the costs of attending that meeting, i.e., where it is being held.

The successful applicant must submit a brief report highlighting the conference experience to the Philadelphia Section at the completion of the trip. The original receipts should also be submitted to the Section office for reimbursement.

BOOK REVIEW

Modern Aldol Reactions in two volumes, ed. Rainer Mahrwald. 6¾ by 9¾ inches, hard bound, 356 pages (vol. 1) and 372 pages (vol. 2), Wiley VCH Verlag, Weinheim, Germany 2004. ISBN 3-527-30714-1, \$405.

A group of 22 authors in specialized fields have brought together in this 2-volume work a comprehensive overview of the entire spectrum of aldol reactions. Based on recent advances in this field of organic chemistry, modern aldol reaction methods have constantly evolved.

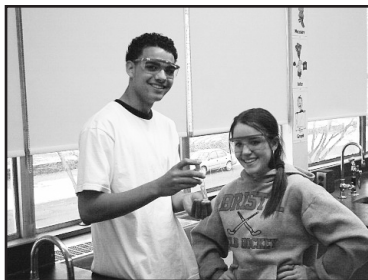
Volume 1 focuses on enolates, organo-catalysis, biocatalysis, and natural product

synthesis. The first chapter defines an aldol reaction as one between an enolizable carbonyl compound and another carbonyl compound that is a ketone or aldehyde. It then reviews fundamental and transition-state models, specifically aldol additions of Group 1 and 2 enolates. Other chapters address titanium enolate-based aldol reactions, boron and silicon enolates, amine-catalyzed aldol reactions, and the aldol reaction in natural product synthesis, using the story of epothilones.

Volume 2 reviews advances in metal catalysis. Specialists look at silver, gold, and palladium Lewis acids; boron and silicon Lewis acids for the Mukaiyama aldol reactions; copper Lewis acids; tin-promoted aldol reactions; zirconium alkoxides; use of chiral metal complexes; and the aldol-Tischneko reaction.

Each specialist cites the recent literature for his/her topic at the end of the chapter. The same dual-volume index appears at the end of both volumes.

– Alan Warren



Students participating in a meeting of the Bristol High School Chemistry Club, under the leadership of advisor Will Smith.

Career Opportunity



Villanova University invites applications for **three visiting, non-tenure track appointments** in Organic, Analytical, and General Chemistry for the 2007-2008 academic year, and for ongoing needs for adjunct faculty. Full descriptions of the positions can be found at <http://www.villanova.edu/artsci/chemistry>. Applicants should send a CV, teaching philosophy, transcripts, and three letters of recommendation to **Dr. Barry Selinsky, Chair, Chemistry Department, Villanova University, Villanova, PA 19085, by May 1, 2007**. Villanova is a Roman Catholic University sponsored by the Augustinian Order. *An AA/EEO employer, Villanova seeks a diverse faculty committed to scholarship, service, and especially teaching who understand, respect, and can contribute to the University's mission and values.*

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Committee details can be found at:
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or by calling Mrs. Libby Harper at
the Philadelphia section office
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PHILADELPHIA SECTION, ACS 2007 CALENDAR OF EVENTS

DATE	EVENT	LOCATION
TBA	Chromatography Forum of the Delaware Valley http://www.cfdv.org/	TBA
April 9	Mass Spectrometry Discussion Group Gary Siuzdak and William Schaefer <i>Metabonomics Using UPLC/MS</i> http://science.widener.edu/svb/msdg/	Villanova University Villanova, PA
April 11	Chemical Consultants: Detective Michael McGinnis, <i>Chemistry and Crime from a Real CSI Perspective</i> www.chemconsultants.org	Cynwyd Club Bala Cynwyd, PA
April 18	Designation of the USDA Eastern Regional Research Laboratory as a National Historic Chemical Landmark www.ars.usda.gov/naa/errc	Eastern Regional Research Center Wyndmoor, PA
April 19	Scholastic Achievement Awards and Dr. Kenneth B. Hicks, USDA <i>ERRC-67 Years of Scientific Discovery</i> http://membership.acs.org/p/philadelphia	Cynwyd Club Bala Cynwyd, PA
April 19	POCC Award to Dr Ahmed Abdel-Magid and poster session www.POCCclub.org	University of Pennsylvania Philadelphia, PA
April 19	AIChE Student Awards http://aiche-philadelphia.org	Rowan University Glassboro, NJ
May 2	Wyeth Lecture and Symposium in honor of Madeleine Joullie's 50 Years of Teaching and Research www.sas.upenn.edu/chem/	Univ. of Pennsylvania Museum Philadelphia, PA
May 16-18	ACS Middle Atlantic Regional Meeting (MARM)	Ursinus College Collegeville, PA
May 17	Teaching Awards Bassam Shakhshiri, U. of Wisconsin www.marmacs.org	Ursinus College Collegeville, PA
June 21	Fifty-Year Member Recognition	TBA
Aug. 19-23	ACS National Meeting	Boston, MA
Sept. 20	Chemistry of Scents	TBA
Oct. 18	Philadelphia Section Award	TBA
Nov. 1	Ulliot Lecture: Shirley Tilghman Princeton University	Chemical Heritage Foundation Philadelphia, PA
Dec. 15	Herb Bassow Memorial Chemistry Demonstration and Hands-on Program	La Salle University Philadelphia, PA