

# The Crucible

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

Volume: XCI No.3

November 2005

## The Second Year of Project SEED at Duquesne University

On June 20<sup>th</sup> four high school students embarked on a journey through the Project SEED program at Duquesne University's Department of Chemistry and Biochemistry housed in the Bayer School for Natural and Environmental Sciences. Each student came with a desire to learn more about chemistry and they were each presented with a challenging research project.

Dawneé Sloan participated in the program for the first time. Graduate student Nathan Takas, who works in the lab of Assistant Professor Jennifer

Aitken, mentored Dawneé during the eight-week program. Dawneé's research project was in the area of solid-state materials chemistry. She learned how to use powder X-ray diffraction and thermal analysis techniques. When asked what was the best part of the project SEED program Dawneé said that it was the group meetings where she had the opportunity to learn about what everyone was doing in the research group. Dawneé is now a senior in the pre-engineering program at Taylor Allderdice High School in Squirrel Hill, Pittsburgh. She plans to attend college next year and major in chemical engineering or another engineering field.

Alexander Nunley, now a junior at Central Catholic High School in Oakland, Pittsburgh, also participated in the SEED program for the first time. Under the supervision of Associate Professor Partha Basu,

Alex learned how to perform digital simulations of cyclic voltammograms of molybdenum complexes with chemistry related to those found in catalytically active sites of enzymes. According to Alex, he learned a lot from Dr. Basu this summer, especially how to stay on top of things and have fun at the same time as learning. Because Alex is a junior this year, he is looking forward to participating in next summer's SEED program.



*Visit to PPG Industries in Monroeville. Bottom from left to right: Samantha Sablick, Dawneé Sloan, Dr. Jennifer Aitken; top from left to right: Timothy McFadden and Alexander Nunley.*

Samantha Sabolick worked on the isolation and analysis of amides from mammalian tissue using GC-MS under the supervision of Dr. Mitch Johnson.

By the end of the summer, she gained a lot of confidence in her chemistry skills. Samantha, now a senior at Sto-Rox High School in McKees Rocks, participated in the program for the first time. Samantha felt that the field trips to local companies were the best part of the Project SEED experience. Her favorite trip was the one to PPG industries where she learned about the chemistry of transitions lens®. Samantha is planning to attend college next year and major in either pharmacy or business.

Timothy McFadden was the first student to return to the Project SEED program for a second summer here at Duquesne University. While Tim worked in Duquesne's Mylan School of Pharmacy last summer, this summer he took on a new project in the Bayer School under the

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# 2006 CANDIDATES FOR OFFICE

Pittsburgh Section

American Chemical Society

The 2005 Nominating Committee of the Pittsburgh Section of the American Chemical Society submits the following slate of candidates for Section office for 2006. All persons nominated are members of the society and have agreed to serve if elected.

**Only members of the Pittsburgh section of the American Chemical Society are eligible to vote. Please note that all ballots must be received by Pittsburgh Section Secretary, Bernard Durkin, by November 21, 2005. Please follow instructions printed on the ballot. Ballots received in any other manner than what is stated in the instructions will not be accepted.**

## Chair-Elect

Christina Mastramatteo

### *Christina Mastromatteo* (née Jasieczek)

Christina received her Ph.D. from the University of Sussex in the UK. She subsequently held 2 postdoctoral positions as a synthetic polymer chemist (Univ. Warwick, UK and CMU), specializing in the use of mass spectrometry to characterize resins produced by controlled free radical polymerization mechanisms. Christina is currently a research chemist for PPG Industries.

In the past 7 years Christina rapidly became an active member of the ACS, SSP and SACP, chairing a variety of committees and holding elected positions as secretary of the ACS local section (2004) and of the SSP (2003-2004). Christina has continued active membership since the birth of their 1<sup>st</sup> child in 2004.

Participation in the various societies, especially the ACS, has shown Christina how dedicated and innovative local members are, however, there is an ever-present need to bring in new and active members to sustain on-going programs. Should Christina be elected this will be one of the focal points of her chairmanship year. The ACS has an important role to play in our local scientific community; through professional and adult education as well as science outreach programs we are able to serve our community and raise awareness of science in our everyday lives. Many problems have faced the local ACS group over the years; as lives become busier volunteer time can be a problem, finances for the local group can be tight and attracting new members has not always been easy. These are some of the challenges Christina hopes to address, should she become Chair-elect.

Christina is married and has a son. In her free time she likes to garden and hike. Since the birth of their son, Christina and her husband's interests have diversified to include Thomas the Tank Engine and building sandcastles.

## Secretary-Elect

Mary Anne Alvin

### *Mary Anne Alvin*

After nearly thirty years of experience at the Westinghouse and Siemens Westinghouse Science and Technology Center in Pittsburgh, PA, Mary Anne Alvin is currently employed as a Physical Scientist at DOE/NETL's Office of Science & Technology in the Separation and Fuels Processing Division in Pittsburgh, PA.

As a Fellow Scientist, Mary Anne led the materials technology development effort at Siemens Westinghouse for the advancement and commercialization of hot gas particulate removal filters for use in high temperature coal-based gasification and combustion applications, and is internationally recognized for her work in the area of porous high temperature ceramics, intermetallics, and advanced metal alloys. She also led Siemens' initial advanced metallic-ceramic catalytic combustion matrix development. Her efforts span both domestic and international industries, as well as small businesses and universities.

Her current focus at DOE/NETL is in turbine materials, fuel cells, gas separation membranes and advanced sulfur removal systems, and catalyst development. She holds 22 patents with an additional 6 pending, has numerous publications, and has often been an invited speaker and session chair at conferences. Mary Anne has been an ACS member for the past 23 years.

## Treasurer-Elect

Emmanuel Schrieber

### *Emmanuel Schrieber*

Emanuel M. Schrieber received his B.S. degree in Chemistry from Case Western Reserve University, a M.S. degree in Environmental Engineering from the University of Florida, and a Ph.D. in Industrial Hygiene from the University of Pittsburgh's Graduate School of Public Health. He has worked at the DOE's National Energy Research Center in Bruceton, PA as a research chemist and for the Aluminum Company of America as an environmental engineer. He is currently employed at the University of Pittsburgh where he has been the manager of the environmental engineering laboratories in the Department of Civil and Environmental Engineering, a research associate in the Department of Environmental and Occupational Health, and is presently an analytical chemist in the Genomics and Proteomics Core Lab. In his current position, he is the lab's expert in nano scale LC, nano spray mass spectrometry, and protein identification using TurboSEQEST searching engine.

He has been a member of ACS since 1976. He is also an active member of the Society for Analytical Chemists of Pittsburgh and the Spectroscopy Society of Pittsburgh, serving in numerous committees, including the Mass Spec Discussion Group of Pittsburgh, Tripartite Symposia, Continuing Education Committee, Faraday Lecture Committee, College and High School Equipment Grants, Membership and Directory Committee, and the High School and Middle School Essay Contest. Currently, he is the chair-elect for the Edwin Hodge Memorial Award.

**BALLOT**  
**For Offices of the**  
**2006**  
**Pittsburgh Section**  
**American Chemical Society**

**Chair-Elect**

CHAIR-ELECT is a three-year term, serving one year as Chair-Elect (during 2006), one year as Chair (during 2007) and one year as Past Chair (during 2008).

*(Vote for One)*

Christina Mastramatteo.....

**Secretary-Elect**

SECRETARY-ELECT is a two-year term, serving one year as Secretary-Elect (during 2006) and one year as Secretary (during 2007)

*(Vote for One)*

Mary Anne Alvin .....

**Treasurer-Elect**

TREASURER-ELECT is a two-year term, serving one year as Treasurer-Elect (during 2006) and one year as Treasurer (during 2007)

*(Vote for One)*

Emmanuel Schrieber .....

**Directors**

Directors are three-year terms. Directors serve on the executive committee.

*(Vote for Two)*

Guy Berry.....

Joseph MacNeil.....

**Councilors**

One three year term, one two year term, and 3 alternates. Councilors attend national ACS council meetings.

*(Vote for two)*

Mark Bier.....

Michael Mautino.....

Mildred Perry .....

**INSTRUCTIONS**

Ballot must be placed and sealed in the enclosed blank envelope. Place the blank envelope in the enclosed printed envelope which is addressed to Pittsburgh Section Secretary, Bernard Durkin. Print your return address in the upper left hand corner and sign your name on the line provided. Ballots received in any other manner will be disqualified.

**Only members of the Pittsburgh section of the American Chemical Society are eligible to vote. All ballots must be received by the Secretary of the Pittsburgh Section by November 21, 2005.**



## SPECTROSCOPY SOCIETY OF PITTSBURGH

November Meeting

Wednesday, November 16, 2005

Duquesne University

6:00 PM - Social Hour, 6:30 PM - Dinner (City View Cafe - 6th Floor)

8:00 PM - Business Meeting, 8:15 PM - Speaker's Presentation

### **“The Ever-Shrinking Spectrometer: From Bench-Top Behemoth Down to the Spectral Sensor - The Wave of the Future for Applied Spectroscopy”**

**John Coates, PhD, CChem, CSci, FRSC**  
**Coates Consulting**

#### **Abstract**

For the past two decades there have been numerous discussions about the role of spectroscopy beyond the laboratory. Applications range from small spectral measurement devices for industrial process monitoring to systems that have the potential to be integrated into consumer products. This presentation will provide a review of recent technologies that have become available to the world of spectroscopy within the past 3 or 4 years. It will discuss the pros and cons of implementing the technologies, how the devices can be assembled to provide fully functional spectral sensing devices, and the requirements for the implementation of such devices. This will include a discussion of the need for miniature sampling systems and wireless based methods of communications, as well as the packaging requirements for non-traditional environments. Many of these spectral measurement systems have resulted from thinking outside of the box. Now these are available it is time to think outside of the box relative to the applications of optical spectroscopy.

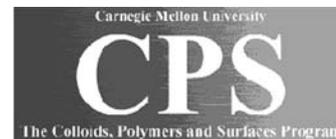
#### **Biography**

Dr. Coates is principal consultant for Coates Consulting, a network consultancy focused on optical, analytical and applied instrumentation. He is also a senior partner in a number of small companies focused on specialized instrumentation and optical sensors. In the role of an external consultant he has worked as a Technical Director for a small instrumentation company, Global Technovations, Inc., and as an interim Director of the Measurement and Control Engineering Center (MCEC) at the University of Tennessee. Prior to forming Coates Consulting, Dr. Coates held the positions of Technical Director/Director of Marketing for the Perkin-Elmer, Real-Time Systems Division (Wilton, CT, USA). His experience includes 10 years in the oil industry as an analytical methods development chemist, and 31 years working with scientific and industrial instrumentation manufacturers. Dr. Coates holds a Ph.D. in Analytical Chemistry from Brunel, University (Great Britain), and is a Fellow of the Royal Society of Chemistry (FRSC) and a chartered scientist (CSci). He is also member of the Coblenz Society, the Society of Applied Spectroscopy (SAS), the American Chemical Society (ACS), Instrument Society of America (ISA) and the Society of Automotive Engineers (SAE). Dr. Coates is the author of more than 100 articles, book chapters, patents and other publications.

**Dinner Reservations:** Please call Carolyn Benga at 412-487-0915 or e-mail [crbenga@aol.com](mailto:crbenga@aol.com) to make dinner reservations NO LATER THAN FRIDAY, November 11, 2005. 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:** 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. Contact Dr. Mitch Johnson at Duquesne University if any difficulties arise.

## Carnegie Mellon



### **PART-TIME GRADUATE DEGREE**

This interdisciplinary program of part-time graduate study (currently in its 32<sup>nd</sup> year) leads to a Master of Science degree in Colloids, Polymers and Surfaces (CPS) offered jointly by the Engineering and Science Colleges at Carnegie Mellon University. Course work is relevant to many industries, as chemical product manufacture and process development often require applications involving complex fluids that include nanoparticles, macromolecules and interfaces. Examples include industries working with nanotechnology, coatings and pigments, pharmaceuticals, surfactant-based products, food science, environmental science, polymers/advanced materials and biomaterials. Participating faculty are drawn mainly from the Department of Chemical Engineering and the Department of Chemistry.

Applications for Spring 2006 enrollment are now being taken. Classes begin January 16, 2006, and new students may enroll in the entry-level course, Physical Chemistry of Colloids and Surfaces.

For additional information, contact:

Dr. Annette M. Jacobson  
Director, CPS Program  
1107 Doherty Hall  
Carnegie Mellon University  
Pittsburgh, PA 15213  
Phone: (412)268-2244  
E-mail: [jacobson@andrew.cmu.edu](mailto:jacobson@andrew.cmu.edu)  
[www.cheme.cmu.edu/cps/](http://www.cheme.cmu.edu/cps/)

*ACS Pittsburgh  
Chemists Club*

Pittsburgh Section, American Chemical Society

**Tuesday, November 29, 2005**

***“Understanding the Demand for Undergraduate  
Research and Improving the Opportunities***

by

Joseph J. Grabowski  
Associate Professor of Chemistry  
University of Pittsburgh

**Duranti’s Restaurant**

128 N. Craig St., Pittsburgh, PA  
6:00 PM Cocktail Time - Cash Bar  
6:30 PM Dinner, 7:45 PM Program

For reservations, please call Ed Martin by noon, Friday, November 25, 2005 at (724) 335-0904 or e-mail at [esm@icubed.com](mailto:esm@icubed.com).

***Abstract***

The National Science Foundation (NSF) formally began its Research Experiences for Undergraduates (REU) program in 1987 and has continued it every year since then. It is but one effort to attract undergraduates to careers in science and addresses the general and growing recognition that our nation is facing a shortage of qualified STEM personnel. While the individually run REU programs appear to be oversubscribed, any reliable and quantitative information on the total demand for such positions were lacking until we initiated our research project, and for which the results will be described in this presentation. Furthermore, evaluation of successes and challenges of REU programs led to recognition that beginning college students were being overlooked in favor of more advanced students when it came to extra-curricular research opportunities. This understanding led to the creation of the First Experiences program at Pitt, first piloted in spring 2004, and targeted towards engaging second-term first-year students in faculty-mentored research opportunities. The design of this novel program and what we have learned from the first two years of implementation will also be discussed. The presentation will conclude with a brief examination of new opportunities presented by two forward-looking undergraduate-research related programs.

***Biography***

Joe Grabowski earned in B.S. at the University of Maryland Baltimore County (UMBC) and his Ph.D. at the University of Colorado, Boulder, both in the field of chemistry. He was a postdoctoral fellow with Kevin Peters at Harvard University, and then a junior faculty member in that Department before moving to the University of Pittsburgh. His research interests are generally in the area of reactive intermediates of organic chemistry and for which he employs custom-built instrument to provide novel insight. Currently he is using a photoacoustic calorimeter to characterize coordinatively unsaturated organometallic intermediates, a flowing afterglow to understand trimethylsilyl-group transfer reactions, and a selected ion flow tube to probe organic reaction mechanisms. Two of his chemical education research projects focus on assessing the demand for NSF-REU positions in chemistry and evaluating electronic-whiteboard-enhanced, web-based chemistry tutoring. His teaching interests are in the areas of organic chemistry, the innovative uses of modern technology (web sites, audience response systems, 3D projection technology, among others) to enhance student learning, and promoting undergraduate research.

Spectroscopy Society of  
Pittsburgh  
*Technology  
forum*

**Duquesne University**

Mellon Science Hall  
5:30 p.m.

**Wednesday  
November 16, 2005**

***“Energy Supply/Demand  
Trends and Forecast:  
Implications for a  
Sustainable Energy Future  
for Canada and the World”***

**J. David Hughes  
Geologist  
Geological Survey  
of Canada**

***Bio***

David Hughes is a geologist with more than 30 years experience studying the energy resource of Canada for the Geological Survey of Canada and the private sector. He is the Leader of the National Coal Inventory, which is a digital knowledge base on coal used to determine the availability of resources for the conventional and non-conventional uses, including coalbed methane production and the sequestration of CO<sub>2</sub>. He is also Team Leader for Non-conventional Gas for the Canadian Gas Potential Committee. For the past several years, he has developed a keen interest in the “Big Picture” as it relates to the longer term prognosis for continuity of energy supplies and some of the political and environmental ramifications concerning their use.



## Society for Analytical Chemists of Pittsburgh

### November Meeting

Monday, November 7, 2005, Duquesne University, Maurice Falk Hall

Social Hour 5:30 P.M.

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

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

Business Meeting - 7:40 P.M., Technical Presentation 8:00 P.M.

### *“Health and Environmental Implications of Engineered Nanoparticles”*

**Kevin D. Ausman, Ph.D.**

Executive Director for Operations  
Rice University, Center for Biological and  
Environmental Nanotechnology

#### **Abstract:**

Engineered nanoparticles have recently become commercialized in a number of consumer products, and the types that are being produced in large-scale quantities are increasing dramatically. However, the biological and ecological impacts of these nanoparticles have only begun to be explored experimentally. The public perception, public policy, regulatory, and commercialization issues surrounding this technical area will be discussed. The general approach being employed to address these issues at Rice University's Center for Biological and Environmental Nanotechnology (CBEN) and its offshoot organization the International Council on Nanotechnology (ICON) will be described. As an illustrative example, studies on buckminsterfullerene, a model hydrophobic nanomaterial, will be described.

#### **Bio:**

Kevin D. Ausman received his Ph.D. in Physical Chemistry in May 1998 and is B.A. in Chemistry in May 1993 from Rice University. He is currently the Executive Director for Operations at Rice University, Center for Biological and Environmental Nanotechnology. He has been with the Rice University since 1997.

Some of the awards Dr. Ausman has received are: (1999) winning entry, Veridian Outstanding Technical Authors Awards Program, (1997) John L. Margrave Thesis Award in Chemistry, (1997) Robert A. Welch Foundation Predoctoral Fellowship, (1995) Nettie S. Autrey Fellowship, (1994 and 1995) Harry B. Weiser Scholarship for Excellence in the Teaching of Chemistry.

Some of his Referred Publications are: “Helical ice-sheets inside carbon nanotubes in the physiological condition,” William H. Noon, Kevin D. Ausman, Richard E. Smalley, and Jianpeng Ma, *Chemical Physics Letters*, 355, pp. 445-448 (2002); “Reversible Water-Solubilization of Single-Walled Carbon Nanotubes by Polymer Wrapping,” Michael J. O’Connell, Peter Boul, Lars M. Ericson, Chad Huffman, Yuhuang Wang, Erick Haroz, Cynthia Kuper, Jim Tour, Kevin D. Ausman, and Richard E. Smalley, *Chemical Physics Letters*, 342, pp.265-271 (2001); “Organic Solvent Dispersions of Single-Walled Carbon Nanotubes: Toward Solutions of Pristine Nanotubes,” Kevin D. Ausman, Richard Piner, Oleg Lourie, Rodney S. Ruoff, and Mikhail Korobov, *Journal of Physical Chemistry B*, 104, pp. 8911-8915 (2000).

**Dinner Reservations:** Please e-mail William Straub at [straub@pittcon.org](mailto:straub@pittcon.org), by Thursday, November 3, 2005 to make dinner reservations. Bill's preference for reservations is an e-mail. Should you not have e-mail, please call 412-372-8312. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACP. If you have any dietary restrictions, let Bill 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.

## Call For Nominations Advancing Diversity In The Chemical Sciences

The American Chemical Society Committee on Minority Affairs is pleased to announce a Call for Nominations for the Stanley C. Israel Regional Award For Advancing Diversity in the Chemical Sciences

**Purpose:** To recognize individuals and/or institutions that have advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region.

**Nature:** The award consists of a medal and a \$1,000 grant to support and further the activities for which the award was made. The award also will include funding to cover the recipient's travel expenses to the ACS regional meeting at which the award will be presented.

**Rules of Eligibility:** Individuals nominated for the award may come from any professional setting: academia, industry, government, or other independent facility. Nominees may also be organizations, including ACS local sections and divisions. The awardees will have increased the participation and leadership of persons from diverse or underrepresented minority group(s), persons with disabilities, or women.

**To Nominate:** For nomination of individuals, a letter of nomination of no more than three pages and a CV or resume is required. For institutions or corporations, a brief description of the institution or organization must be included. Nominations may also include up to two supporting letters of no more than three pages and up to five different samples of program materials.

Send nominations to:  
Committee on Minority Affairs  
American Chemical Society  
1155 16<sup>th</sup> Street NW  
Washington, DC 20036

For information regarding the award, contact Stephanie Allen, 800/227-5558 ext. 6262, or e-mail: [s\\_allen@acs.org](mailto:s_allen@acs.org).

Deadline for receipt of nominations is January 13, 2006.

*ACS Cut and Paste  
September/October 2005*

## Councilors' Corner

### Report on: ACS FALL 2005 NATIONAL MEETING Washington D.C.

Three of our ACS Pittsburgh Section Councilors were in attendance in Washington D.C. Neither Alternate Councilors were available to attend the meeting.

The meeting attracted over 13,000 attendees and featured over 7000 scientific presentations and an exposition of 504 booths.

Councilors elected Cherlyn Ivaughn Bradley, William H Breazeale, Jr., Peter K. Dorhout, Mamie W. Moy, and Connie J. Murphy for membership on the Committee on Committees for the 2006-2008 term.

Councilors elected R. Gerald Bass, Martha L. Casey, Janan M. Hayes, Valerie J. Kuck and Bonnie Lawlor for membership on the Council Policy Committee.

Councilors elected Steven A. Fleming, Michelle M. Francl, Peter C Jurs, Roger A. Parker, and Sara J. Risch for membership on the Committee on Nominations and Elections.

The candidates for the fall 2005 ACS National Elections were:

#### ***President-Elect 2006***

George E. Heinze, Rockland Technimed, Ltd, New York

Catherine T. Hunt, Rohm and Haas Company, Pennsylvania

#### ***Directors-at-Large - 2006-2008***

James D. Burke, Retired, Rohm and Haas Company, Pennsylvania

Edwin A. Chandross, Materials Chemistry, LLC, New Jersey

C. Gordon McCarty, Retired, Bayer Corporation, Adjunct Professor -University of South Carolina

Frankie K. Wood-Black, Conoco Phillips, Texas

The Committee on Meetings & Expositions reported that the total meeting registration was 13, 040. Of these, 7,584 were regular registrations, 11,795 were exhibitors, 2,715 were students, 468 were exposition only,

and 478 guests. The exposition had 312 companies represented in 504 booths.

In Washington D.C., 1917 job seekers registered with the NECH with 1678 interviews scheduled for 289 positions.

Membership in the American Chemical Society was 155,567 as of July 31, 2005. This is an increase of 282 over the end of July, 2004.

On the Recommendation of the Local Section Activities Committee, the Council approved a petition for change in section territory for the Central New Mexico Local Section. The annexation is intended to improve services to the ACS members in the northern New Mexico Section.

On the recommendation of the Committee on Constitution and Bylaws, the Council approved revised charter bylaws for new local sections and for international chemical sciences chapters.

The Board of Directors voted to designate the development of Rumford Baking Powder as a national chemical landmark.

The Board of Directors voted to include requests for funding of the following programs in the development of the Society's 2006 proposed budget:

-A two-year pilot program for ACS High School Chemistry Clubs

-ACS activities in connection with the international Science and Engineering Fair

-A Leadership Development Program that delivers a pool of capable, effective and motivated leaders for volunteer roles throughout the Society

-Reauthorization of, and continued funding for the Green Chemistry Institute

-A complete reinvention of the Society's Web Presence

Respectfully submitted,

Pittsburgh Section Councilors  
Richard S. Danchik (Author)  
Michael Mautino  
Theodore Weismann

### 2006 Pittsburgh Conference Memorial National College Grant Program

The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy and its co-sponsoring technical societies, The Society for Analytical Chemists of Pittsburgh (SACP) and The Spectroscopy Society of Pittsburgh (SSP), proudly announce the 2006 Pittsburgh Conference Memorial National College Grants (PCMNCG) Program.

Grants will be awarded to small college science departments for the purchase of scientific equipment, audio-visual or other teaching aids, and/or library materials for use in the teaching of science at the undergraduate level.

Based on available funds, about thirteen colleges are expected to be selected to receive grants. The amount requested in each proposal may not exceed \$9,000.

Faculty members may obtain application forms and additional information from:

John P Baltrus, Ph.D.

The Pittsburgh Conference  
PCMNCG

300 Penn Center Blvd., Suite 332

Pittsburgh, PA 15235-5503

412-825-3220 Ext. 204

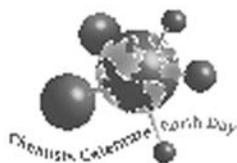
Fax 412-825-3224

E-mail: baltrus2@pittcon.org (for proper handling, please use PCMNCG in subject line)

Information and applications may also be found on the Pittsburgh Conference website at [www.pittcon.org](http://www.pittcon.org).

Schools must meet certain criteria to be eligible for an award. All applications and proposals must be received by December 1, 2005. Awards will be announced by February 2006.

## Local Students Win National CCED Contest



As part of the 2005 Chemists Celebrate Earth Day (CCED) program, the Pittsburgh Section sponsored a music video contest for students in grades K-12. The 2005 CCED theme was "Air - Here, There, Everywhere!" Students were encouraged to produce a music video best illustrating the theme. Winning entries from the local section competition were submitted to the national music video contest, sponsored by the ACS's Committee on Community Activities, the Committee on Environmental Improvement, and the Green Chemistry Institute. Winners of the national music video contest were announced at the 230th ACS National Meeting in Washington, D.C. in August 2005.

The Pittsburgh Section is proud to announce the national award winning entry in the 9<sup>th</sup> - 12<sup>th</sup> grade category is:

### Penn-Trafford High School

**Teacher Sponsor:** Dr. Helen Loughner

**Title of Video:** Air, Air, Its Everywhere

**Students:** Mark Almes, Alexander Burkardt, Ian Carlin, and Benjamin Mahosky

Winners received \$100 and a special invitation to the Pittsburgh Section's 2005 National Chemistry Week event held in October, where they were personally congratulated by ACS President Dr. William F. Carroll, during the Pittsburgh stop of his 2005 "Extreme NCW Tour."

Congratulations to Penn-Trafford High School for winning the ACS's 2005 CCED national music video competition!

### 2006 CCED

The topic for the 2006 Chemists Celebrate Earth Day program will center on soil, with the theme "Dig It!" The national unifying event will be "Plant It For The Planet," which will focus on local sections performing community outreach activities. In addition a K-8 Illustrated Haiku contest will be offered as well as an ACS Student Affiliate open video (music or activity relevant to theme) contest. Earth Day is April 22.

*Submitted by V. Michael Mautino  
CCED Coordinator*

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

## ENERGY TECHNOLOGY GROUP

Pittsburgh Section

American Chemical Society

Thursday, November 10, 2005

### "Clean Coal Technology: Energy Act and the Roadmap?"

by

Dr. Frank Burke

Vice President, Science & Technology  
CONSOL Energy, Inc.

### More Restaurant

214 N. Craig St., Pittsburgh, PA, 412-621-2700

11:30 am Networking-Cash Bar

12:00 noon Luncheon

1:00 pm Presentation

All are welcome! Please plan to attend. For reservations, call Christina at 412-386-4484 (for Tom Sarkus) by noon on Friday, November 4, 2005.

In August, President Bush signed into law the Energy Policy Act of 2005. The first national energy plan in over a decade, it will be discussed specifically in the context of a Clean Coal Technology Roadmap that was developed jointly by the Coal Utilization Research Council (CURC), the Electric Power Research Institute (EPRI) and the U.S. Department of Energy's (DOE's) Office of Fossil Energy.

### Biography

Dr. Burke is the Vice President of Science & Technology at CONSOL Energy, Inc., where he has worked for 30 years. He has testified before Congress on numerous occasions, and is widely recognized as a leader within CURC, the National Mining Association and the FutureGen Industrial Alliance. He received a B.S. in Chemistry from Gonzaga University and a Ph.D. in Physical Chemistry from Iowa State University.

**December Meeting:** Watch for details in the December issue of The Crucible!

## A good vacuum system

### needs a great vacuum trap:

## Posi-Trap positive flow vacuum inlet traps!

- No "blow-by" . . . **ever!**
- Filter elements matched to **your** application.
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**Director**  
Guy Berry  
Joseph MacNeil

### **Guy Berry**

Guy C. Berry, is University Professor Emeritus of Chemistry and Polymer Science of Carnegie Mellon University. He has been a Director (1999-2005), Chair (1997), Chair-elect (1996), Webmaster of the Section web site (1998-present) and Alternate Councilor of the Pittsburgh Section of the ACS. He is chair of the Selection Committee for the PhD in Polymer Science and Engineering Award of the National ACS. Berry joined the Polymer Program of the Mellon Institute in 1960, having received B.S, M.S. and Ph.D. degrees from the University of Michigan. He became a member of the faculty of Carnegie Mellon University on the merger of Mellon Institute with the Carnegie Institute of Technology in 1966. Berry's research interests are in the physical chemistry and physics of polymers and their solutions. He has served as Head of the Department of Chemistry, as well as Acting Dean of the Mellon College of Science of Carnegie Mellon. He is co-editor of Progress in Polymer Science, past co-editor of the Journal of Polymer Science: Polymer Physics, and serves on the editorial boards of a number of journals. He has held Visiting Professorships at the Universities of Kyoto and Tokyo and Colorado State University. Awards include the 1994 Pittsburgh Award of the ACS, Pittsburgh Section and the 1990 Bingham Medal of the Society of Rheology; he is a Fellow of the American Physical Society and the Division of Polymeric Materials: Science and Engineering, of the American Chemical Society.

### **Joseph MacNeil**

Dr. Joseph MacNeil graduated with a B. Sc. degree in chemistry from St. Francis Xavier University in 1988 before enrolling in graduate studies at Queen's University in Kingston, Ontario. He received a Ph.D. in inorganic chemistry in 1993 for a dissertation with Michael C. Baird on the structure of Jahn-Teller distorted organometallic compounds. Dr. MacNeil took a post-doc position with Bill Trogler at the University of California in San Diego exploring the

redox chemistry of nitrogen oxides before moving to an assistant faculty position at Chatham College. He was awarded continuous tenure in 2003, and now holds the title of Irene Heinz Given Associate Professor of Chemistry. His teaching load encompasses general, inorganic and analytical chemistry, and his current research is focused on the phytoremediation of heavy-metal contaminated water and soil. He is an eleven year member of the ACS, and is also locally active in the SACP and the SSP. Other professional affiliations include the Society of Environmental Toxicology and Chemistry and the AAAS.

### **Councilor**

Mark Bier  
V. Michael Mautino  
Mildred Perry

### **Mark Bier**

Mark E. Bier received his B.S. degree in Chemistry with Honors from Allegheny College in Meadville, PA and a Ph.D. from Purdue University. He has worked at the V.A. Medical Center in Pittsburgh, the American Sterilizer Corp. in Erie, PA, Thermo Electron Corporation in San Jose, CA. and he is now an Associate Research Professor and Director of the Center for Molecular Analysis in the Department of Chemistry at Carnegie Mellon University. He also does mass spectrometry (MS) consulting. Mark was a key scientist in the development of Thermo Electron's GCQ and LCQ mass spectrometers and he has co-authored book chapters, journal articles and patents. The linear ion trap invention is now sold world-wide. His research interests include bio-physical chemistry in the area of ion-activation, membrane inlet MS and advanced MS development. He is currently working on a NSF funded instrument development project to build a heavy-ion mass spectrometer. Mark has judged numerous science fairs and has co-directed the development of the educational resource entitled, Virtual MS Lab. (<http://sVMMSL.cmu.chm.edu>) and uses the remote-control of mass spectrometers for teaching. Outside the lab, Mark enjoys swimming, backpacking, XC-skiing, sailing, and tango.

•SSP- Mass Spectrometry Discussion Group (SSP-MSDG), member 1998 to present, Chair 1998-99 and 2004-05.

•Spectroscopy Society of Pittsburgh (SSP), member 1997 to present.

•ACS, member, Chair-elect 2001, Chair 2002, Past-Chair 2003, Secretary 2000 for Pittsburgh Section.

•American Society for Mass Spectrometry (ASMS), member 1984 to present.

•International Mass Spectrometry Society (IMSS), member 1999 to present.

•Society of Analytical Chemist of Pittsburgh (SACP), member 1997 to present.

•Bay Area Mass Spectrometry Society (BAMS), member 1988-96, treasurer 1995.

•Past president, Purdue Nu chapter, honorary chemical society Phi Lambda Upsilon.

### **Michael Mautino**

Michael Mautino has worked for Bayer Corporation for the past fifteen years and is currently a Senior Research and Development Specialist. During this time he has worked in the applications and development area. Michael began his career at Bayer as a chemical technician. In 2001, he was promoted to a scientist position and now directs the work of the chemical technicians that are in his business group. Michael has authored papers and presented at both American Plastics Industry and American Chemical Society (ACS) conferences. He obtained a Bachelor of Science in Business Management degree from the University of Phoenix in December 2005.

Michael is a very active member of the ACS at both the local and national levels. In addition to being Councilor (2003-05), he has been the Pittsburgh Section's National Chemistry Week (NCW) Coordinator since 1999, during which time the Section has received six consecutive national ACS awards in recognition of its NCW program. He has also been chair (1997 & 1998) of the Western Pennsylvania Technician Affiliate Group. Nationally, he was chair of the Division of Chemical Technicians

(2001-02) and is currently chair of the Committee on Community Activities (2004-06), a committee of the ACS Board of Directors.

#### Statement

“As well as representing the Pittsburgh Section within ACS governance, I believe that a key duty of a Councilor is to serve as an information conduit for local section members. During my first term as Councilor I have written over two dozen articles in the Section’s newsletter, keeping you informed about pertinent ACS-related issues, seeking input and ideas on how the ACS could better serve you, and reported on community outreach activities of the Section. I hope you have found this information to be of value and that you will allow me to continue to serve as your Councilor.”

#### Mildred (Mille) Perry

Mille received her Ph.D. in Chemistry at the University of Tennessee (Knoxville) and a M.S. in Biology and B.S. in Chemistry at Austin Peay State University in Clarksville, Tennessee.

Mille has been employed at the National Energy Technology Laboratory (NETL), since she came to Pittsburgh in 1983 as a postdoctoral appointee. Her career began as a Research Chemist developing characterization methods, for the “Structural Definition of Synthetic Fuels” project in the Coal Science Division. She presently serves as Senior Analyst in the Strategic Center for Coal.

Mille is a Director of the ACS Pittsburgh Section, a former Chairman of National Chemistry Week, the ACS Coal Technology Group, the Pittsburgh Section ACS, the SSP, General Chairman of the ACS Central Regional Meeting (2003), and President of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon 2003).

As Chair-elect/ Program Chairman of the Pittsburgh Section, Mille initiated the On-the-Road Program bringing programming and speakers to the broader membership of the Section at various academic and industry locations.

When Mille was Chairman, the Section hosted the International Chemistry Olympiad for the first time that it was ever convened in the United States, planned for a Retired Chemists Group that was chartered and later merged with the Pittsburgh Chemists Club, and developed a relationship with the newly chartered Pittsburgh Chinese ACS. In 1992 the Section was awarded the ACS Award for Outstanding Performance by Local Sections in the Medium-Large Size Category.

Mille served as General Chair of the Central Regional Meeting and the 100th Anniversary celebration of the Pittsburgh Section in October 2003. About 550 registered for the meeting that featured John Fenn, 2002 Nobel Prize winner in Chemistry, as keynote speaker.

Her hobbies include genealogy, art, and gardening, and her volunteer activities with the ACS, the SSP, the Pittsburgh Conference, and the Zonta Club.

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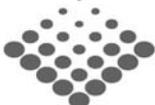
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## Project SEED Continued from Page 1

supervision of Assistant Professor Ellen Gawalt in the Department of Chemistry and Biochemistry. Tim's project involved studying the reactivity of calcium aluminates that can be potentially useful as bone replacements. In the process of his investigations, Tim became proficient in the operation of diffuse reflectance FTIR and the interpretation of the resulting spectra. This summer Tim said that he learned to be more patient with his work, since not all experiments always work as planned.

August 28 thru September 1<sup>st</sup> Tim attended the 230<sup>th</sup> American Chemical Society National Meeting which was held in Washington DC. Timothy presented a poster about his work in Duquesne University's Mylan School of Pharmacy carried out during his first summer in Project SEED at the SciMix Poster Session. At the meeting, Tim had the opportunity to meet Project SEED students from other colleges and universities and chemistry professionals from all over the country. Now a senior at Sto-Rox High School, Tim is planning to attend college next year and major in either biochemistry or pharmacy.

In addition to their individual research projects, the students participated in many activities as a group. These activities included field trips to local companies that were organized in collaboration with the Project SEED program at Washington and Jefferson College led by Assistant Professor Michael Leonard. This year students toured the R. J. Lee Group, Bayer, Ferro and PPG Industries. Laboratory safety training and library research training was provided to the students by Duquesne University Faculty and Staff. A highlight of the summer was the Undergraduate Research Symposium at Duquesne University where the Project SEED students, alongside undergraduate researchers from Duquesne University and other local universities, presented posters of their work.

Project SEED is designed to encourage economically disadvantaged high school students to pursue career opportunities in the chemical sciences. Direction for Project SEED is provided by the ACS Committee on Project SEED. Funding for the Project SEED program is obtained through gener-

ous donations from individuals and companies. The R. J. Lee Group, Marc A. McKithen, Acucis, Bayer Materials Science and R & R Electronic Products funded this year's program at Duquesne University. The program was also greatly aided by the local Pittsburgh section's Committee for Project Seed headed by Ms. Tabitha Riggio of Bayer Materials Science. Duquesne's Bayer School of Natural and Environmental Sciences also provided lunch every day for the students. More support is needed for the coming year because the students' stipends will be increased and we will be expanding the program to include more students. We encourage those who donated to continue their good will in the future. For those who have yet to donate, please consider what a profound impact this program can have on the life of a student.

*Submitted by Dr. Jennifer Aitken*



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Material must be received by the 1<sup>st</sup> 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 1<sup>st</sup> day of every publication month).

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# Pittsburgh Area Calendar

## November

- Mon. 7 **Society for Analytical Chemists of Pittsburgh (SACP)**  
Duquesne University, Maurice Falk Hall  
*“Health and Environmental Implications of Engineered Nanoparticles”*  
Kevin D. Ausman, Ph.D., Executive Director for Operations, Rice University, Center for Biological and Environmental Nanotechnology
- Thurs. 10 **Energy Technology Group**  
More Restaurant  
*“Clean Coal Technology: Energy Act and the Roadmap?”*  
Dr. Frank Burke, Vice President, Science and Technology, CONSOL Energy Inc.
- Wed. 16 **Spectroscopy Society of Pittsburgh (SSP) Technology Forum**  
Duquesne University, Maurice Falk Hall  
*“Energy Supply/Demand Trends and Forecast: Implications for a Sustainable Energy Future for Canada and the World”*  
J. David Hughes, Geologist, Geological Survey of Canada
- Wed. 16 **Spectroscopy Society of Pittsburgh (SSP)**  
Duquesne University, Mellon Hall of Science, Maurice Falk Hall  
*“The Ever-Shrinking Spectrometer: From Bench-Top Behemoth Down to the Spectral Sensor - The Wave of the Future for Applied Spectroscopy”*  
John Coates, PhD, CChem, CSci, FRSC, Coates Consulting
- Tues. 29 **ACS Pittsburgh Chemists Club**  
Duranti’s Restaurant  
*“Understanding the Demand for Undergraduate Research and Improving the Opportunities”*  
Joseph J. Grabowski, Associate Professor of Chemistry, University of Pittsburgh

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