National Chemistry Week 2002
“Chemistry Keeps Us Clean”

MARK YOUR CALENDAR -
NCW 2002 is scheduled for October 20-26, 2002. The NCW Theme for this year is “Chemistry Keeps Us Clean.”

Once again the Pittsburgh Section will be holding a two-day event at the Carnegie Science Center on Friday and Saturday, October 25-26, 2002, from 10:00 AM to 5:00 PM each day. There will be 20+ tables throughout the Carnegie Science Center staffed with volunteers from area businesses, professional societies, high schools and colleges performing hands-on activities, demonstrations, and shows. This could be your opportunity to help educate Pittsburgh and surrounding communities of the importance that chemistry plays in the quality of our daily lives.

The Pittsburgh Section is looking for individuals and groups to assist in coordinating this event. If you have not volunteered or attended a Local Section activity in the recent past, here is a great opportunity to get involved. Your participation will ensure that the Pittsburgh Section brings about a positive change in the public’s impression of chemistry and will help to promote a positive message about chemistry, particularly to elementary and secondary school children.

For more information or to volunteer, contact the Pittsburgh Section’s NCW Coordinator:

V. Michael Mautino
Bayer Corporation
100 Bayer Rd. Bldg. 2
Pittsburgh, PA 15205
Phone: 412-777-4792
Fax: 412-777-7864
E-mail: vincent-m.mautino.b@bayer.com

Pittsburgh Section Executive Committee Nominations Due by August 30, 2002

Nominations are being solicited for the following offices:

Chair - Elect
Secretary-Elect
Treasurer - Elect
Director
Councilor

If you are interested in running for one of the above offices or would like to nominate someone, please contact Nominations Chair, Brian Strohmeier, at 412-820-8190 or by e-mail at strohmeier@ppg.com before August 30.

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Christine Keating received her B.S. in Chemistry and Biology from St. Francis College in 1991. She attended graduate school at Penn State University, working in the laboratory of Professor Michael Nathan studying the application of metal nanoparticles in biological spectroscopy, with particular emphasis on protein surface-enhanced Raman scattering. For her efforts in this area, Keating was the recipient of the 1996 Henkel Fellowship in Colloid and Surface Chemistry. After earning her Ph.D. in Chemistry in 1997, she worked as a postdoctoral associate in the laboratories of Professors Paul Weiss and Michael Natan and held a brief fixed-term assistant professorship in the Department of Chemistry at Penn State before beginning her current tenure-track appointment in that department in 2001. She has co-authored over 20 publications. Her research interests include synthesis, characterization, and application of functional nanostructures, including directed self-assembly of nanoparticles, amphiphiles, and/or biomacromolecules to form structures ranging from sensor architectures to models of biological cells.

This presentation will focus on the characterization, derivatization, and some applications of segmented metallic nanowires containing stripes of different metals along their length. These particles are prepared by sequential electrodeposition of metals (e.g. Au, Ag, Pd, Pt, Co) into the pores of alumina or polycarbonate filter membranes, which act as templates. Nanowire diameter is determined by the pore size, and is tunable between 30 and 350 nm. The length of each segment is controlled by the amount of metal electroplated before changing the plating solution to the next metal. After release from the membrane, nanowires are derivatized with proteins or nucleic acids for use in sensing or assembly. The metal segments can be used as an optical barcode to enable multiplexed bioanalysis or as a chemical pattern to spatially control (bio)chemical derivatization along the length of the particle. DNA hybridization on the nanowire surface for both multiplexed bioanalysis and DNA-directed nanowire assembly will be discussed.

"Biomolecule-Coated Metal Nanowires for Bio-Sensing and Self Assembly"

by

Christine D. Keating, Ph.D.
Chemistry Department
The Pennsylvania State University
University Park, PA 16802

Dinner Reservation: Please call Nick Barsic at 412-825-3220 Ext. 271 or by email to: nbarsic@nb.net to make your dinner reservations. Do not Call the SACP office to Make Dinner Reservations. Dinner will cost $8.00 ($4.00 for Student Affiliates). If you have dietary restrictions, please let Nick know. Also, should you wish to be placed on a permanent dinner attendance list, leave a message for Nick at the above number.

Parking Instructions: Duquesne University Parking Garage entrance is on Forbes Ave. Upon entering the garage, receive a parking ticket and drive to upper floors. Pick up a sticker at the dinner/meeting. Contact Mitchell Johnson at Duquesne University if any difficulties arise.
SPECTROSCOPY SOCIETY OF PITTSBURGH

September Meeting - Wednesday, September 18, 2002

Duquesne University
Mellon Hall of Science
Maurice Falk Auditorium

6:00 PM - Dinner (City View Cafe - 6th Floor)
8:00 PM - Business Meeting
8:15 PM - Speaker’s Presentation

“Accurate Mass Measurement: Taking Full Analytical Advantage of Nature’s Isotopic Complexity”

Alan G. Marshall
Center for Interdisciplinary Magnetic Resonance, National High Magnetic Field Lab, Tallahassee, FL
Department of Chemistry, Florida State University, Tallahassee, FL 32306-43901

Most mass analysis relies on “nominal” mass accuracy (i.e., to within 1 Da). However, an increasing number of applications are based on much more accurate mass measurement. The Figure shows that mass spectrometric resolution (defined here as the spacing between resolved peaks) does not increase monotonically with increasing spectrometer resolving power for electrosprayed biomolecules. Rather, resolution improves by a series of steps. First, one must resolve different charge states. No additional peaks appear until adducts are resolved, then not again until isotopic peaks are resolved (unit mass resolution), and finally when isotopic “fine structure” (i.e., different elemental compositions of same nominal mass) is resolved. The easiest way to apprehend the advantages of Fourier transform ion cyclotron resonance mass spectrometry (FT-ICR MS) is that it effectively extends the onset of each “plateau” in Figure 1 to ~100 times higher mass than with any other mass analyzer.

Mixtures and Elemental Compositions. High mass resolving power (m/.m > 300,000 over a wide mass range) offers two major advantages. First, it becomes possible to separate complex mixtures without prior chromatographic or gel separation. Second, elemental composition may be determined from accurate (to ~1 ppm) mass measurement alone for unknown molecules up to ~1,000 Da. Examples from environmental, petrochemical, analytical, and biological problems will be presented, including new world records for mass resolution.

Acknowledgments. Supported by NSF (CHE-99-09502), ExxonMobil Corporation, STINT (Sweden), Florida State University, and the National High Magnetic Field Lab in Tallahassee, Florida.


Alan George Marshall, Kasha Professor of Chemistry at the Florida State University in Tallahassee, was awarded the 2002 Pittsburgh Spectroscopy Award from the SSP in recognition of his co-invention (with Melvin Comisarow) of the Fourier transform ion cyclotron resonance mass spectrometry (FT-ICRMS) technique and other advancements he has stimulated in mass spectrometry. Professor Marshall received a B.A. in Chemistry from Northwestern University (1965) and a Ph.D. in Physical Chemistry from Stanford University (1970). He has been a Professor of Chemistry at Florida State University since 1993 and is Director of the ICR Program at the National High Magnetic Field Laboratory.

Marshall’s honors include the ACS Division of Analytical Chemistry Award in Chemical Instrumentation, the Eastern Analytical Symposium Award in Analytical Chemistry, the ACS Field/Franklin Award in Mass Spectrometry, the SSP’s Maurice F. Hasler Award, the New York Society of Applied Spectroscopy Gold Medal, the Professorship at Florida State University, and the Thomson Medal of the International Society for Mass Spectrometry. He has published over 300 refereed papers on spectroscopy: X-ray Diffraction, Gamma-ray Spectroscopy, UV-Visible (including Circular Dichroism and Raman), Infrared, Nuclear Magnetic Resonance, Magnetic Resonance Imaging, Electron Spin Resonance, and FT-ICR MS.


Dinner Reservation: Please call Denise Wilkins at 412/825-3220 Ext. 290 or 412/476-6615 (leave message). If you have any dietary restrictions, please make them known when you call Denise.

Parking Instructions: Duquesne University parking garage entrance is on Forbes Avenue. Upon entering the garage, receive ticket and drive to upper floors. Pay parking fee upon exiting with SSP parking chit. Pick up parking chit at the dinner or the meeting. Call Mitchell Johnson at Duquesne University if any difficulties arise.

http://membership.acs.org/P/Pitt
Pittsburgh Tripartite Symposium

“Starting a Chemical Business: Issues and Experiences”
with
Keynote Speaker, Michael Strem
President, Strem Chemicals, Inc.

Thursday, September 5, 2002
9:30 AM to 4:30 PM
Registration from 9:00 - 9:30 AM
Carnegie Mellon University’s building at the Pittsburgh Technology Center
(formerly Carnegie Mellon Research Institute)
off 2nd Avenue, Pittsburgh.

The symposium is free of charge. Pre-registration is requested. To register or for more information please see the following websites: www.ssp-pgh.org, www.sacp.org, http://membership.acs.org/P/Pitt

Sponsored by: The Pittsburgh Section of the American Chemical Society, the Society for Analytical Chemists of Pittsburgh, and the Spectroscopy Society of Pittsburgh.

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EAS---Back to November and Back to Somerset

By popular demand, the 2002 Eastern Analytical Symposium returns to the week before Thanksgiving (Nov. 18-21) and returns to Somerset, New Jersey, to the Garden State Convention Center. The Exhibition will include the old well-known exhibitors from the past, but also a number of new exhibitors who are looking to provide us with resources to make our analysis tasks easier. There are a full complement of short courses and workshops, an employment bureau, some special programs for academic chemists and analytical chemistry students, and a first-rate technical program. Of special note are the sessions on problem-solving for pharmaceutical, food, forensic, natural product, environmental, and industrial hygiene analyses. A special session is also slated to address Forensics and 9/11 with speakers who participated in the forensic analysis in New York City.

The Somerset site is close to many analytical chemists. Free parking and easy access via automobile, train, or airplane makes it easy to attend the whole meeting or just to spend a couple of days on site. The technical program will be in the local hotels within easy walking or shuttle distance to the Convention Center. The facilities allow for ease of interaction with the speakers, short course instructors, and exhibitors.

For additional information look at the EAS website at http://www.eas.org/. You can register for the meeting including courses and workshops as noted at that site.

Spectroscopy Society of Pittsburgh Technology forum

Duquesne University
Mellon Science Hall
5:30 p.m.

Wednesday
September 18, 2002

Robots and Robotic Technology for Detection of Cracks and Corrosion in Aging Aircraft

by
Mel Siegel,
Director, Sensor, Measurement and Control Lab
The Robotics Institute, CMU
Preliminary Announcement

The 35th Central Regional Meeting
100th Anniversary of the Pittsburgh Section, ACS

October 19-23, 2003
Sheraton Station Square
Pittsburgh, PA

Plenary Lectures

General Sessions
Analytical, Inorganic, Organic, Physical, Polymer Chemistry, and Chemical Education

Planned Symposia
- Computational Chemistry
- Proteomics
- Environmental Benign Chemistry
- Tissue Engineering
- Polymer Advances
- Surface Science
- Teaching Innovations
- Combinatorial Chemistry
- Bioinformatics
- Drug Design
- Food Chemistry
- Energy/Fuel
- History of Chemistry/Pittsburgh
- High School Chemistry

Special Events
- Pittsburgh Award
- High School Teaching Award
- Industrial Innovations Awards
- Exposition
- Short Courses and Workshops
- Former Chairmen’s Dinner
- Women Chemists Luncheon
- Student Affiliates Regional Meeting
- YCC Leadership Development Workshop
- Technician Affiliates

For more information, contact:

Dr. Mildred B. Perry, General Chair
U.S. DOE/NETL
PO Box 10940
Pittsburgh, PA 15236-0940
mildred.perry@netl.doe.gov
412-386-6015

Dr. Paul E. Beck, Co-Chair
Department of Chemistry
Clarion University
Clarion, PA 16214-1232
beck@CLARION.EDU
814-393-2580

http://membership.acs.org/P/Pitt
ACS Women Chemists Committee Travel Awards - Year 2003

The Eli Lilly & Company is sponsoring a program to provide funding for undergraduate, graduate, and postdoctoral women chemists to travel to scientific meetings in 2003 to present the results of their research. Grants may be applied only for registration, travel, and accommodations, and are restricted to travel to meetings within the United States. Grant funds are limited, but there are some funds set aside for undergraduates. Only U.S. citizens and permanent residents are eligible. Applications should be limited to one per research group. Awards will be given with preference to the following order: (1) any applicant who will be making her first presentation (regardless of format) at a national or major meeting, (2) graduate or postdoctoral applicants who have not presented at a national or major meeting since leaving undergraduate school. Women who have received a prior award under this program are ineligible.

The deadline dates for receipt of applications for 2003 meetings are as follows:

- **September 15, 2002** - Meetings between January 1 and June 30, 2003
- **February 15, 2003** - Meetings between July 1 and December 31, 2003

In order to apply for the award, please submit the following:

- A resume (include permanent address).
- A completed official application form that you must obtain from your department chair, or may download from [http://membership.acs.org/W/WCC/travap00.pdf](http://membership.acs.org/W/WCC/travap00.pdf) (if you need an acrobat reader, go to [http://www.adobe.com/store/products/reader.html](http://www.adobe.com/store/products/reader.html)). The application form is also available from the WCC Staff Liaison at the American Chemical Society. (See address below or call 800/227-5558, ext. 6123; e-mail: wcc@acs.org)
- An abstract of the work to be presented, using the official meeting abstract form (or printed copy of an online abstract submission). If not on the official meeting abstract form, reason must be stated on the application form. You will also need to submit your paper through the meeting registration process independent of this Travel Award application.
- A letter detailing the reasons you want this award (both scientific and financial), and specifying whether you have made a previous presentation at a national or major meeting.
- A letter from your advisor confirming your participation in the meeting at which you will be making your presentation, commenting on your technical ability and potential, and listing any other travel support that would be available from the department or research grants.

Awards will be made on the basis of scientific merit and financial need, with the WCC Membership/Awards Subcommittee serving as the selection jury. Through this program, the Eli Lilly & Company continues to increase the participation of women in the chemical sciences.

Please send your application to: Ms. Cheryl H. Brown, Women Chemists Committee, American Chemical Society, 1155 16th Street, NW, Washington, DC 20036.

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34th International Chemistry Olympiadi Winners Announced

Two hundred twenty five students representing 57 countries participated this year at the 34th IChO in Groningen, the Netherlands. The U.S.A team brought home two gold medals, one silver, and one bronze, and placed seventh in the competition. China, Thailand, and Taiwan placed in top performances.

Helen Shi - Oklahoma Section, Gold
Daniel Cissell - Cincinnati Section, Gold
Colin Whittaker - Northeastern Section, Silver
Timothy Davenport - Oklahoma Section, Bronze

For more details visit the Web site (page 3-4): [http://www.chem.rug.nl/icho34/eng/icho34/catalyzer12.pdf](http://www.chem.rug.nl/icho34/eng/icho34/catalyzer12.pdf)

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Call for Papers

225th National Meeting of the American Chemical Society
New Orleans, Louisiana
March 23 - 27, 2003

The Division of Chemical Technicians cordially invites you to present a paper (or poster) at the “Successful Alliances” Symposium during the 225th National ACS meeting in New Orleans.

We are looking for individuals who are interested in sharing their experiences and/or insights in regard to successful alliances between TECH, TAGs and academia, industry, government, etc. All submissions welcome!

Abstract deadline is November 2002.

For more information contact:
Stephanie Bloxom
The Dow Chemical Company
1712 Building
Midland, MI 48674
989-638-4366, sabloxom@dow.com

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Eastern Analytical Symposium
November 18-21, 2002

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Phone: 610-485-4633 Fax: 610-485-9467
For continuous program & exhibit updates and online registration information - easinfo@aol.com (e-mail)

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- Spectroscopic Imaging
- Thermal Analysis
- Optimization of Chromatographic Separations
- Forensics / Terrorism / Homeland Security
- Near Infrared Analysis
- Multi-dimensional Chromatography
- Fourier Transform Spectroscopy
- Chiral Analysis
- Analytical Applications in Industrial Hygiene
- Analytical Science in Conservation of Works of Art
- An Integrated Approach to “Green Chemistry”
- And much, much, more!
Fresh on the heels of its debut at last month’s national meeting, NECH - the onsite career center where attendees can search and participate in job interviews–promises to deliver a wealth of advantages to job seekers and employers as they make their plans for ACS’ spring meeting in New Orleans, March 23-27.

The online NECH, is fully computerized and Internet accessible. Among the many improvements is that job seekers can post their resume online weeks before the meeting. This affords job seekers additional time to prepare for their interviews such as researching the prospective company.

For employers, the principal benefit of online interview scheduling is that they can immediately setup interviews after reviewing resumes. And they can use the private NECH email system to contact jobseekers for more information.

For both job seekers and employers, NECH’s “new way of doing business” will allow attendees to set up their calendars more effectively, thus leaving more time for their onsite interviews.

And because the new NECH database is accessible, via the Internet, from any computer, both parties will have more freedom to attend other events during the meeting.

Another feature of the new database is that both parties will have individual electronic accounts which will record how many responses they have received to their resume or job posting. Job seekers and employers can set up “agents” that will send electronic alerts about jobs/candidates that fit their needs. Other opportunities for sharing information with a prospective employer/employee, include attaching a research paper or linking to the company’s website.

Employers and job seekers who were among the first to go online when sign up for the Boston national meeting began on June 17 say they were impressed with the ease and convenience of the online NECH.

“The signup is seamless. It’s very easy. Very user-friendly,” commented Lesley King, human-resources manager at TransTech Pharma.

She says the fully computerized and Internet-accessible NECH, debuting at the Boston meeting, is a vast improvement over the previous method which required many employers to scramble to set up last-minute interviews onsite.

“Before you went to the ACS and you would have to allot two hours--minimum--trying to schedule interviews. Then, you would try to coordinate them, go through the resumes and go through the books. Now, you can do it all online and it does the search,” King says.

Among the benefits of the new system, job seekers will be able to:

* Maintain a personal calendar
* Search job postings
* Request interviews
* View interviews scheduled by employers
* Get personal e-mail reminders
* Get information about jobs and employers before the meeting

...from any computer with Internet connection, located anywhere.

Employers can get online and:

* Maintain a personal calendar
* Search resumes
* Setup interviews
* Get personal e-mail reminders
* Track interview activity
* Collect statistics on postings and interviews

To find out about more about NECH’s reception in Boston and for general information about signup for the New Orleans national meeting, visit http://chemistry.org/careers.

ACS Cut and Paste July 2002

Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has.

--Margaret Mead

The only job you start out at the top on is digging a ditch.

--William Ensley
Polymer Group
Pittsburgh Section
American Chemical Society

Wednesday, September 11, 2002

“Comparison of Bisphenol-A and 4,4’-Dihydroxydiphenyl Copolycarbonate with Bisphenol-A Polycarbonate”

James Yoo-Jin Chung, Ph.D
Plastics Division, Bayer Corporation
Pittsburgh, PA

Duranti’s Restaurant
128 North Craig Street, Oakland PA
parking accessible from Neville Street
(one block east of Craig Street)

Social Hour (cash bar)............. 5:30 p.m.
Dinner....................................... 6:30 p.m.
Technical Presentation ............. 7:30 p.m.

For dinner reservations please contact Leoné Hermans-Blackburn
(Tel: 412-777-7509, leone.hermans-blackburn.b@bayer.com)
by Monday, September 09, 2002. The cost of dinner is $16.00 per person, or $11.00 for retirees, and no charge for students; there is a $5.00 parking charge for seminar only attendees.

PACS Positions Available

Education Position

PACS needs a part-time professional to function as director or chairperson for focused PACS conferences. Individual needs strong interest and knowledge-base in the PACS conference they will grow. Interested parties should contact: Dr. Henry Nowicki, PACS, 409 Meade Dr., Coraopolis, PA 15108. E-mail: Hnpacs@aol.com, phone: 724-457-6576. All communications are held in strict confidence.

Laboratory - Business Development

PACS needs a full-time person to work in its water and activated carbon testing laboratory in Beaver, PA. Prior knowledge of carbon and new product development is required. Interested parties should contact: Dr. Henry Nowicki, PACS Inc., 409 Meade Dr., Coraopolis, PA 15108. E-mail: Hnpacs@aol.com or phone: 724-457-6576. All communications are held in strict confidence.

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September 24, 2002

“Proteomics and Mass Spectrometry: Instrumentation, Applications and Education”

Mark E. Bier
Center for Molecular Analysis
Department of Chemistry
Carnegie Mellon University

Duranti’s Restaurant
128 North Craig Street, Oakland PA

Cocktail Time (cash bar)........ 6:00 p.m.
Dinner..................................... 6:30 p.m.
Program................................... 7:45 p.m.

For reservations, please call Ed Martin by noon, Friday, September 20, 2002, at (724) 335-0904 or e-mail at esm@icubed.com

Abstract:
Mass spectrometry has become the technique of choice for sequencing peptides, identifying proteins and for determining protein modifications at the femtomole level. The recent impact that mass spectrometry has had on proteomics is primarily due to two ion sources that allow large non-volatile biomolecules to be flown intact in a mass spectrometer. These two sources, electrospray and matrix-assisted laser desorption ionization, along with other instrumental advances such as mass spectrometry/mass spectrometry (MS/MS) will be discussed with proteomic applications.

The second part of this talk will demonstrate the Virtual Mass Spectrometry Laboratory (VMSL). The VMSL is an Internet based educational tool being developed to teach mass spectrometry. A protein identification problem will be examined using the VMSL.
September

Thurs. 5 Pittsburgh Tripartite Symposium
Carnegie Mellon’s building at the Pittsburgh Technology Center
“Starting a Chemical Business: Issues and Experiences”
Michael Strem, President, Strem Chemicals, Inc.

Mon. 9 Society for Analytical Chemists of Pittsburgh (SACP)
Duquesne University, Maurice Falk Hall
“Hyphenating Separations to NMR”
Jonathan V. Sweedler, University of Illinois

Wed. 11 ACS Pittsburgh Polymer Group
Duranti’s Restaurant, 128 N. Craig St., Oakland, PA
“Comparison of Bisphenol-A and 4,4’-Dihydroxydiphenyl Copolycarbonate with Bisphenol-A Polycarbonate”
James Yoo-Jin Chung, Ph.D., Plastics Division, Bayer Corporation, Pittsburgh, PA

Wed. 18 Spectroscopy Society of Pittsburgh Technology Forum
Duquesne University, Mellon Science Hall
“Robots and Robotic Technology for Detection of Cracks and Corrosion in Aging Aircraft”
Mel Siegel, Director, Sensor, Measurement and Control Lab, The Robotics Institute, CMU

Tues. 24 ACS Pittsburgh Chemists Club
Duranti’s Restaurant, 128 N. Craig St., Oakland, PA
“Proteomics and Mass Spectrometry: Instrumentation, Applications and Education”
Mark E. Bier, Center for Molecular Analysis, Department of Chemistry, Carnegie Mellon University

October

Mon. 7 Society for Analytical Chemists of Pittsburgh (SACP)
Duquesne University, Maurice Falk Hall
“Biomolecule-Coated Metal Nanowires for Bio-Sensing and Self Assembly”
Christine D. Keating, Ph.D., Chemistry Department, The Pennsylvania State University, University Park, PA

Fri.-Sat. 25-26 National Chemistry Week
Carnegie Science Center
“Chemistry Keeps Us Clean”