

The Crucible

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

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October 2004

Professor Terrance J. Collins of Carnegie Mellon University to Receive the 2004 Pittsburgh Award



Professor Terrance J. Collins of Carnegie Mellon University will receive the 2004 Pittsburgh Award. Areas of application include bleaching (paper and pulp processing, laundry, textiles processing, and effluent decolorization), oxidative synthesis, priority pollutant destruction, renewable feedstocks conversions, metals processing facile pollutant destruction and/or mineralization, and chemical and biological (anthrax-like spores) warfare agent decontamination.

The award, established in 1933, recognizes contributions toward increasing chemical knowledge, promoting industry, benefiting humanity or advancing the Pittsburgh Section. A full list of past award winners can be found on the section website (<http://membership.acs.org/P/Pitt/activities.html#award>). An award dinner will be held later in the Fall, the time and place to be announced in a forthcoming Crucible.

Dr. Collins, the Thomas Lord Professor of Chemistry, is an international leader in the field of Green Chemistry. He received his Ph.D. from the University of Auckland (New Zealand) in 1978 before assuming faculty positions at Caltech and subsequently Carnegie Mellon. His major contributions include development of a novel catalyst, a TetraAmido Macrocyclic Ligand (TAML®), which activates oxidants such as hydrogen peroxide and oxygen in various aqueous environments, permitting efficient and environmentally benign oxidation in industrial processes and in post-emission cleanup applica-

Dr. Collins has been a member of the American Chemical Society since 1979. He is a leader in education relating to Green Chemistry with ACS nationally, serving on the Committee on Environmental Improvement, delivering 150 external lectures on green chemistry since 2000, serving as the Editor for the Americas of the Royal Society Journal Green Chemistry, and organizing and running the 2004 Summer School on Green Chemistry at Carnegie Mellon this August under ACS-PRF sponsorship. His work has led to 10 US Patents and 70 international patents as well as over 100 publications in the peer-reviewed literature. Previous awards include the 1999 Presidential Green Chemistry Award.

Submitted by Neil M. Donahue

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2005 CANDIDATES FOR OFFICE

Pittsburgh Section
American Chemical Society

The 2004 Nominating Committee of the Pittsburgh Section of the American Chemical Society (*) submits the following slate of candidates for Section office for 2004. 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, Christina Mastromatteo, by November 1, 2004.

Chair-Elect

Dr. James Manner

Dr. James Manner

Educational Background: BS in 1961 from Bowling Green State University; MS in Organic Chemistry in 1963 from Michigan State University; PH. D. in Organic Chemistry in 1971 from The University of Akron.

Industrial Experience: A total of 37 ½ years with PPG Industries and retired on April 1, 2000 as a Senior Research Associate. The above work resulted in 13 US and 12 foreign patents.

American Chemical Society: I have been a member of ACS for 41 years. I started my active involvement in the Akron Section of the American Chemical Society. My activities from 1963 through 1989 included meetings and social committee chairperson. In 1989 I was elected to the position of Chairperson prior to my transfer by PPG Industries to Monroeville, Pa. I have been a member of the Pittsburgh section since 1989. I have been active in NCW (1989-1990) and I am currently the Treasurer for the Pittsburgh Section.

Needs for the Pittsburgh Section: I would like to encourage more involvement by members of the Pittsburgh Section in our activities. This can be done through high quality programs and Crucible articles. The Pittsburgh Section is doing a great job in many areas and I will work to continue these fine programs (Pittsburgh Award, HS Chemistry Contest, National Chemistry Week, Kids & Chemistry, etc. and subgroups such as Polymer Group, WPTAG, etc.). Project Seed was initiated this year and we need to continue this program of reaching out to young high school students.

Secretary-Elect

Leoné Hermans-Blackburn

Leoné Hermans-Blackburn

Leoné Hermans-Blackburn is an Associate Scientist who joined Bayer MaterialScience in 2001. She is part of the Polyurethane Innovations Group and leads a team responsible for developing the synthesis and processing of amine co-reactants for isocyanates. These reactants are components of high solids chemically resistant polymer coating systems typically used in Maintenance and Automotive applications. She has also been part of a group that developed high-throughput screening methods for evaluating coating formulations. These methods have been used to identify the structure- property relationships in formulations that included one component moisture cure coatings, UV curable coating formulations and aqueous systems.

She received a Bachelor of Science (Honors) degree from the University of Cape Town in the Republic of South Africa, a Master of Science degree from the State University of New York (SUNY) - Binghamton in 1996 and a Ph.D. in Physical-Inorganic Chemistry in 2000. Her doctoral research focussed on the synthesis and characterization of photoactive, polymer assemblies that when irradiated with electromagnetic radiation will undergo an electron transfer process to oxidize the conjugated polymer backbone. The approach to this goal was to electro-copolymerize transmissive, conducting, benzothiophene-type polymers with functionalized metal-to-ligand charge transfer (MLCT) chromophores as thin films. The photoinduced conductivity, kinetics and reversibility of the system were extensively investigated.

She has been a member of the ACS for 8 years and has actively participated on the steering committees of a number of local ACS groups that include the Women Chemists Committee and the Polymer Group.

Treasurer-Elect

Peg Kendi

Peg Kendi

I graduated from Penn State University with a bachelor's degree in Chemistry. After college I joined Rohm and Haas Company in Spring House Pennsylvania. There I worked in their agricultural chemical development group, studying the metabolism of a pesticide in the environment. I also developed methods to extract, purify and quantitate trace amounts of pesticides from animal and plant commodities. After leaving Rohm and Haas in 2000, I joined Bayer Corporation in Pittsburgh. After short assignments in Polymer Analysis and Coatings Research, I joined the High Throughput Screening (HTS) group in November of 2001. Since that time we have developed numerous methods to study the physical and chemical characteristics of materials in a miniaturized and automated fashion.

I have been a member of ACS since 1996 and a member of the Pittsburgh region since 2001.

Director

Mark Bier
Tom Sarkus
Mordecai Treblow

Mark E. Bier

Mark E. Bier received his B.S. degree in Chemistry with Honors from Allegheny College in Meadville, PA and a Ph.D. in Analytical Chemistry from Purdue University. He has worked at the V.A. Medical Center in Pittsburgh, the American Steril-

Continued on Page 6

BALLOT
For Offices of the
2005
Pittsburgh Section
American Chemical Society

Chair-Elect

CHAIR-ELECT is a three-year term, serving one year as Chair-Elect (during 2005), one year as Chair (during 2006) and one year as Past Chair (during 2007).

(Vote for One)

James Manner.....

Secretary-Elect

SECRETARY-ELECT is a two-year term, serving one year as Secretary-Elect (during 2005) and one year as Secretary (during 2006)

(Vote for One)

Leoné Hermans-Blackburn.....

Treasurer-Elect

TREASURER-ELECT is a two-year term, serving one year as Treasurer-Elect (during 2005) and one year as Treasurer (during 2006)

(Vote for One)

Peg Kendi.....

Directors

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

(Vote for Two)

Mark Bier.....

Thomas A. Sarkus.....

Mordecai Treblow.....

Councilors

Councilor is a three-year term. Councilors attend national ACS council meetings.

(Vote for two)

Brian Strohmeier.....

Theodore (Ted) James Weismann.....

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, Christina Mastromatteo. Print your return address in 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 1, 2004.



SPECTROSCOPY SOCIETY OF PITTSBURGH



October Meeting , Wednesday, October 20, 2004 Duquesne University

Mellon Hall of Science, Laura Falk Auditorium

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

“Recent Results from the Mars Exploration Rovers: Spirit and Opportunity”

Robert C. Anderson

NASA Jet Propulsion Labs

Abstract

The Mars Exploration Rover Spirit landed successfully in Gusev Crater on January 4, 2004 (UTC), followed three weeks later with the successful landing in Meridiani Planum of its twin, Opportunity. Both rovers are in excellent health and all the instruments are working properly.

Gusev Crater: The landing site at Gusev Crater lies on a densely populated rock-strewn plain. Rocks identified around the lander range in a variety of sizes and angular shapes. Preliminary results of the rock textures show that a majority of the rocks consist of fine-grained volcanic and several (Adirondack) appear to contain some sort of surface coating. Three sets of measurements have been made on Adirondack, one on the natural rock surface, one on the same area after the surfacing coating (dust) was removed by the RAT brush, and one of the interior of the rock at the same spot after removing 3 mm of rock with the RAT. The concentrations of presumably dust-borne elements like sulfur and chlorine decrease and you go deeper into the rock. All of the observations of Adirondack are consistent with the rock being classified as an unweathered olivine, magnetite-bearing, low silica basalt.

Meridiani Planum: The Opportunity landing site lies inside a 20 m diameter impact crater. The lander came to rest near an exposed layer (roughly 12 m long; 0.5 m high) of bedrock in the crater wall. Initial results from microscopic images (MI) data suggest this unit consists of fine-grained rock with a variety of sedimentary structures consisting of cross-bedded, thin layer of sediments. Alpha Particle X-ray Spectrometer (APXS) suggest a high concentration of sulfur. Embedded within the outcrop and weathering out are highly spherical granules.

Biography

Dr. Bob Anderson was born in Anchorage, Alaska and raised in Newport News, Virginia. He attended Old Dominion University in Norfolk, Virginia, where he received his Bachelor of Science Degree in geology in 1979. In 1985, he received a Master of Science from Old Dominion University in geology with emphasis on structural geology and mapping tectonic features surrounding the Tharsis region of Mars. In 1995, he received a Doctor of Philosophy from the University of Pittsburgh in geology with emphasis on visible and near-infrared remote sensing. His Ph.D. research was centered on mapping young Quaternary surfaces, desert pavements and varnish, and soils around the Whipple Mountains of southwestern Arizona to better understand the past climatic history of the region.

He is presently Adjunct Research Faculty at the University of Pittsburgh Department of Geology and Planetary Science as well as Adjunct Faculty at Pasadena City College where he is presently teaching a class on Planetary Geology.

His current science research is centered on unraveling the geologic history of Mars with emphasis on understanding the tectonic, structural, paleohydrologic evolution of the Tharsis region. His recent publications in the Journal of Geophysical Research have focused on identifying volcanic centers of activity on Mars with emphasis on identifying associated recent hydrothermal activity.

Dr. Anderson recently was assigned to the Mars Pathfinder Project under Dr. Golombek (Project Scientist) where his duties included Mars Pathfinder Outreach Coordinator as well as science support assigned to the Mineralogy and Geochemistry Science Operations Group (MinSog). During the landing on the 4th of July, he appeared in national and international television and radio interviews representing the Mars Pathfinder Project in addition to multiple national science and education presentations.

After the conclusion of the Mars Pathfinder project, he was Deputy Director of Mars Education under Dr. Cheick Diarra and subsequent Mission Planner for the Mars 2001 lander. He has work with the FIDO rover team and is presently a geological consultant for Machine Learning Systems Group at JPL where his emphasis is on machine learning for autonomous rover operations.

He is a Senior member of the Technical Staff at the Jet Propulsion Laboratory and is currently employed as the Investigation scientist for the Rock Abrasion Tool (RAT), Physical Properties, and science support for Mission Operations on the Mars 03 mission.

Dinner Reservations: Dinner - 6:00 PM in the City View Cafe (6th floor) Entree for October is “Pulled Pork.” Please call Virginia Naylor at 412/476-6255 or e-mail naylor@pittcon.org to make your dinner reservations no later than Thursday, October 14, 2004. Dinner will cost \$8.00 and checks should be made out to the SSP. If you want to be placed on the permanent dinner list, please let Virginia know when you RSVP. Also, if you have any dietary restrictions, please let Virginia know when you call or email.

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.

Bier Bio Cont'd From Page 2

izer Corp. in Erie, PA, Thermo Electron Corporation in San Jose, CA. and he is now employed as an Associate Research Professor in the Department of Chemistry at Carnegie Mellon University. He also consults in mass spectrometry (MS). Mark was a key scientist in the development of Thermo Electron's GCQ and LCQ mass spectrometers and he has also co-authored book chapters, journal articles and patents. The linear ion trap invention is now sold world-wide. His current research interests include bio-analytical chemistry, membrane inlet MS and advanced MS development. Mark has judged numerous science fairs and has co-directed the development of the educational resource entitled, Virtual MS Lab. (<http://svmsl.cmu.chm.edu>). Outside the lab, Mark enjoys 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.

Thomas A. Sarkus

Tom Sarkus is Director of the Advanced Energy Systems Division at the U.S. Department of Energy's National Energy Technology Laboratory, supervising project management activities under the \$3.7 billion Clean Coal Technology demonstration program, the \$100 million Power Plant Improvement Initiative, and the \$2 billion Clean Coal Power Initiative. The Clean Coal projects managed by Sarkus garnered national and international recognition, including Power magazine's annual Powerplant Award, the National Society of Professional Engineers' Outstanding Achievement Award, and the R&D 100

Award. Sarkus earned a B.S. in chemistry and geology, and an M.S. in earth science from California University of Pennsylvania; and a J.D. in law from Duquesne University. His professional interests include the common themes of energy and the environment. He has worked on advanced combustion, gasification, and emissions control. Tom hosts specialty conferences on Unburned Carbon in Utility Fly Ash (annually since 1995, with 118 attendees last year) and Selective Catalytic & Non-Catalytic Reduction for NO_x Control (annually since 1997, with 236 attendees last year), convening scientific and engineering professionals from the United States and 22 foreign countries in Pittsburgh. Sarkus served as ACS Pittsburgh Section Secretary, Chairperson of the Coal Technology Group, and Secretary of the 2003 Central Regional Meeting Organizing Committee. He currently serves on the Section's Library and Pittsburgh Award committees, and helped rejuvenate the Section's Energy Technology Group as Acting Chairperson. Sarkus would like to improve the Section's financial position, to ensure ample resources for continuing, growing, and communicating the good work of the Pittsburgh Section.

Mordecai Treblow

BA (University Pennsylvania), MS (Penn State University, PhD (University of Pittsburgh) all chemistry. Half career academic; half industrial. Retired - Mead Corp. Industrial positions include: Calgon Corp. (Senior Chemist); Rohm & Haas (Junior Chemist). Academic: Bloomsburg State University (Associate Professor); Mercy College, Detroit (Associate Professor; Chair, Physical Sciences). Authored or co-authored 12 papers, mainly chemical education; presented 10 papers at national, regional, international meetings.

Pittsburgh Section: Active since 1979. Committees: Chair, Professional Relations/Employment (1991-99, 2001-04); ACS Affairs (1997-02), Membership (1982-83). Committee member: Long Range Planning; Finance (Chair, 2004) Organized, Chaired (1996-97) Retired Chemists Group, merger with Pittsburgh Chemists Club. Pittsburgh Section Councilor (1984-92; 1997-2002).

National ACS: Member since 1956. ACS Board of Directors, District-II (1992-95). ACS Council committees:

Local Section Activities (2001-02) Professional Relations (1984-89); Membership Affairs (1998-2000); Divisional Activities (1991-92).

ACS Divisions: Chair Cycle Division Professional Relations (1990-92). Current PROP; Nuclear Chem. and Technology; Fuel Divisions. Member SACP (active), SSP, American Association Textile Chemists and Colorists.

Received 1998 Chairman's Award for "Outstanding Service to the Pittsburgh Section"; 2004 Chair's Award for "Outstanding Contributions and Guidance to Pittsburgh Section."

ISSUES: Mordecai has been and continues as a strong advocate for equality for women chemists nationally, locally. Energy: Advocate for strengthening Federal support energy R&D; activist for economically sound, scientifically accurate ACS federal energy policy (ongoing). Strong supporter of professional and economic needs of chemists in national ACS

Problem for Section: Recruiting and developing leadership corps. (On-going efforts).

Councilor

Brian R. Strohmeier
Theodore (Ted) James Weismann

Brian R. Strohmeier

Brian R. Strohmeier is the Assistant Chairman of the Department of Chemistry at the University of Pittsburgh. Prior to joining Pitt, he was employed in various scientific and managerial leadership positions at the Glass Technology Center of PPG Industries, Inc. and the Alcoa Technical Center. He holds a Ph.D. degree in Analytical Chemistry from the University of Pittsburgh (1984) and an M.A. degree in Business Leadership from Duquesne University (1999). His scientific research interests involve applications of surface analytical techniques, such as X-ray photoelectron spectroscopy (XPS or ESCA), Auger electron spectroscopy (AES), secondary ion mass spectrometry (SIMS), and scanning electron microscopy (SEM) for the characterization of complex materials. He holds one patent and has more than forty publications and twenty

conference presentations dealing with the surface characterization of various materials.

Dr. Strohmeier's leadership interests involve promoting the study and application of modern leadership principles in R&D organizations as well as in undergraduate and graduate level chemistry curricula. He has six publications and three conference presentations dealing with leadership topics and teaches a one-day short course on "Leadership Principles for R&D Managers and Scientists" at National ACS and PITTCON meetings. He has been a member of the ACS since 1977 and is past Chairman of the Pittsburgh Section ACS (2000). He has chaired and/or served on many various committees of the Pittsburgh Section ACS, the Society for Analytical Chemists of Pittsburgh (SACP), the Spectroscopy Society of Pittsburgh (SSP), and the PITTCON organizing committee.

Theodore (Ted) James Weismann

T.J. Weismann graduated from North Catholic High School (Troy Hill) and received a BS (1952), MS (1954) and Ph.D. (1956) in chemistry from Duquesne University. He obtained a job as bench chemist with Gulf Research & Development Co. in the emerging area of geochemistry, ascended the "ladder" through research chemist, research associate and senior scientist, section head and finally manager of the Geochemistry & Minerals Department, from which he retired in 1982.

He was instrumental in establishing the Geochronology Laboratory at Gulf, has published in the areas of boron free radical chemistry, sulfur organic chemistry, ion optics in mass spectrometry and mass spectrometry instrumentation and holds a basic patent.

Ted served as the geochemist on the six-member exploration team seeking oil and gas deposits for the Chinese government on an extended mission following President Nixon's resumption of contacts in the late seventies.

Since retirement Ted has been an adjunct Professor of Chemistry at Duquesne. He coordinates the Student Affiliate Activities for the Pittsburgh Section ACS and has

mentored over 60 Duquesne undergraduates. He has been an ACS member since 1952 currently serving as Councilor. He was past chair of the ACS Division of Geochemistry and the Pittsburgh Chemists Club. He's on the board of directors for Exploration Technologies, Inc. He is the 1999 recipient of the ACS Pittsburgh Section Award. He is a member of the American Association for the Advancement of Science, American Physical Society, Geochemical Society, American Society for Mass Spectrometry and Sigma Xi.

Don't Delay!

All ballots must be received by Pittsburgh Section Secretary, Christina Mastromatteo, by **November 1, 2004**.

Ballots must be in the envelopes provided in this newsletter. Voter's signature must appear in the space provided in the upper left hand corner of the return envelope. Ballots received in any other manner will be disqualified.

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Society for Analytical Chemists of Pittsburgh

October Meeting

Monday, October 4, 2004

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 (6th Floor) 6:30 P.M.

Business Meeting - 7:40 P.M.

Technical Presentation 8:00 P.M.

“Overview of Weapons of Mass Destruction”

Eric Poach, BS, Ed, EMT/P

Chairman, Emergency Preparedness Committee

Mercy Hospital of Pittsburgh

Abstract:

The presentation will provide an overview of the different types of weapons of mass destruction along with an introduction of the skills and techniques necessary to protect medical personnel and the public in the event of a terrorist incident involving nuclear, biological, and chemical weapons.

Bio:

Mr. Poach is currently the Manager of Emergency Medical Services at Mercy Jeanette Hospital which is part of The Pittsburgh Mercy Health System. Currently he is the Chairman of the Special Projects Committee for the Metropolitan Medical Response System of the PA-Region 13 Counterterrorism Task Force. Prior to this he was the Project Director of an EMS Development Project in Saudi Arabia. During the Gulf War Mr. Poach helped develop a Chemical and Biological Preparedness program for the National EMS Service of Saudi Arabia, The Saudi Red Crescent Society. A paramedic since 1977 Mr. Poach also has an extensive background in the Fire Service, having served the Monroeville (PA) Fire Department since 1975. He holds a Bachelors of Science Degree from West Virginia University; He is a certified Rescue Instructor and EMT Instructor in PA, an ACLS, PALS and CPR instructor, as well as a Weapons of Mass Destruction instructor from the Department of Defense and an Emergency Response to Terrorism instructor for the National Fire Academy. Mr. Poach also serves as an Adjunct Instructor for Texas A&M University for Weapons of Mass Destruction programs.

Dinner Reservations: Please call Julie Theys at 412/823-3077 or e-mail theysj@pittcon.org, by September 23, 2004 to make dinner reservations. If you want to be placed on the permanent dinner list, let Julie know when you RSVP. The entrée for October is Stuffed Halibut. Dinner will cost \$8 (\$4 for students) and checks can be made out to the SACAP. If you have any dietary restrictions, let Julie 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.

Bill Carroll Wants Your Ideas!

2005 ACS President Bill Carroll is compiling information related to two of his presidential agenda items for sharing with members and others next year.

Service opportunities: If you have run a program that is a community service through which you were able to reach out with the positive message about chemistry while doing something to benefit the community (painting, clean-up, etc.), Bill would like to hear from you. Please send the details to him at carroll@acs.org

Second career high school teachers: Bill believes strongly in the benefits of having trained chemists and chemical engineers entering the teaching profession. If you are one of these teachers and would like to share your experiences, he would be pleased to hear from you. Just drop a note to carroll@acs.org

ACS Cut and Paste July 2004

Spectroscopy Society of
Pittsburgh
*Technology
forum*

Duquesne University

Mellon Science Hall
5:30 p.m.

Wednesday

October 20, 2004

*“Archaeology at the
Fort Pitt Blockhouse:
A View into
Pittsburgh’s Past”*

David A. Anderson



You're Invited!

**Join the Pittsburgh Section as
We Celebrate**

**National Chemistry
Week 2004!**

**Carnegie Science Center
October 22-23, 2004
10 a.m. to 5 p.m.**

2004 National Chemistry Week (NCW) celebrations in Pittsburgh will be held on Friday, October 22 and Saturday, October 23, at the Carnegie Science Center. Join in the NCW activities as the Pittsburgh Section of the American Chemical Society (ACS) celebrates this year's NCW theme "Health and Wellness." The mission of National Chemistry Week is to reach out to the public, especially students, with positive messages about the important role chemistry plays in our lives. This year's event will highlight science and chemistry contributions to our health and wellness.

Theater Shows - Prizes - Surprises - Celebrity Mole

- Visit more than 25 tables with science and chemistry related hands-on science experiments, activities and demonstrations
- Register to win a chemistry set or one of several prizes
- Get your picture taken with the Celebrity Mole on Mole Day, October 23
- Catch special NCW-related theater shows throughout each day

For more information contact the Carnegie Science Center at (412) 237-3410 or the Pittsburgh Section's NCW Coordinator V. Michael Mautino at (412) 777-4792 or e-mail michael.mautino@bayermaterialsscience.com

NCW '04 is sponsored by the Spectroscopy Society of Pittsburgh, the Society for Analytical Chemists of Pittsburgh, the Carnegie Science Center, and Bayer Corporation.

ENERGY TECHNOLOGY GROUP
Pittsburgh Section
American Chemical Society

Thursday, October 7, 2004

**“O Biomass! Biomass!
Wherefore Art Thou Biomass?”**

by

William Guyker, P.E.

More Restaurant
214 N. Craig St.
412-621-2700

11:30 am Networking - Cash Bar
12:00 noon Luncheon
1:00 pm Presentation

For reservations, please call Christina at 412-386-4484 (for Tom Sarkus) by noon, Monday, Monday, October 4, 2004.

Biomass fuels include corn-to-ethanol, other grains and seasonal crops, woody crops, municipal solid wastes, animal wastes and wastes from wood, paper and food processing. Biomass utilization for energy production, particularly co-firing with coal to generate electricity, can be attractive environmentally and economically. For instance, landfilling of biomass waste results in some anaerobic composting, thereby releasing methane gas, which has a global warming potential more than 20 times that of CO₂, per unit weight; therefore burning the material avoids the release of methane. Improved biomass utilization for energy production can also enhance fuel diversity domestically and internationally. However, biomass faces obstacles ranging from supply seasonality and uncertainty to transportation, handling and storage difficulties. This presentation will consider why biomass is not utilized more by the electric power sector, and what can be done to enhance its attractiveness as an opportunity fuel. Biomass co-firing projects at seven power plants will be summarized. Case studies relating to corn, switchgrass and short rotation woody crops will be presented, and bio-refinery concepts will be discussed. Public awareness, market strategies and research needs will all be addressed.

Biography

A graduate of MIT, Mr. Guyker retired from Allegheny Energy (AE) in 2002, and held the unique positions of Corporate Research Director and Principal Consulting Engineer. He introduced the research process into AE's operations, designed and helped build AE's 500-kV transmission system, and was responsible for introducing biomass into the fuel mix of AE's 14 gigaWatt system. He has authored over 50 published technical articles (e.g., http://www.energypulse.net/centers/article/article_display.cfm?a_id=527), and has received several professional awards. Mr. Guyker now works as a utility consultant.

November Meeting: Thursday, November 4, 2004 - "Mercury Emissions Control" by Thomas J. Feeley, Environmental Systems Technology Manager, National Energy Technology Laboratory. (Mr. Feeley recently briefed the U.S. EPA Administrator on the performance, costs and development status of mercury emissions technologies for the electric power industry. Come and learn the latest information about this important topic.) Note that the November meeting will be a dinner meeting at the Engineers Society of Western Pennsylvania, and will be jointly sponsored by the AIChE. 5:30 p.m. Cash Bar; 6:00 p.m. Dinner; 7:00 p.m. Presentation.

**Students Win National
CCED Music
Video Contest**

As part of the 2004 Chemists Celebrate Earth Day (CCED) program, the Pittsburgh Section sponsored a music video contest for students in grades K-12. The 2004 CCED theme was "What do you know about H₂O?" 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, Committee on Environmental Improvement, and Green Chemistry Institute. Winners of the national music video contest were announced at the 228th ACS National Meeting in Philadelphia, PA, in August 2004.

The Pittsburgh Section is proud to announce the winning entry in the 3rd - 4th grade category is:

Burkett Elementary School

Teacher Sponsor: Ms. Alyssa Kidd
Title of Video: Water Squad 2004!
Students: Shane Brudnok, Mercedes Bryant, Caleb Cordell, Jenna Conti, Shane Coyner, Elizabeth Hoggard, Corey Crist, Danielle Marzullo, Nicholas Fanase, Lauren O'Conner, Eugene Gracyk, Caitlin O'Donnell, Anthony Marks, Vaishali Patel, Siva Sivaji, Rachel Pecharka, Kayleigh Reiff, Amy Ruhl, Rachel Tuite, Anthony Zukowski

Winners will receive a group award of \$100 and a reception to be held in their honor at the Carnegie Science Center on Saturday, October 23, 2004 during the Pittsburgh Section's National Chemistry Week celebration. Congratulations to Burkett Elementary School for winning the ACS's 2004 CCED national music video competition!

2005 CCED

The theme for the 2005 Chemists Celebrate Earth Day program is "Air - Here, There, Everywhere." Earth Day is April 22nd.

*Submitted by V. Michael Mautino,
CCED Coordinator*

POLYMER GROUP
Pittsburgh Section
American Chemical Society

Wednesday, October 13, 2004

Duranti's Restaurant
128 N. Craig St.
Parking accessible from Neville Street

Social Hour (cash bar)	5:30pm
Dinner	6:30pm
Technical Presentation	7:30pm

“Organic Coatings, The Paradoxical Materials”

Clifford K. Schoff
Schoff Associates
4736 Magnus Drive
Allison Park, PA 15101

Organic coatings in the 21st Century exhibit a number of paradoxes: they are ancient and modern, high tech and low tech, well understood and complete mysteries - virtually all at the same time. They are applied by techniques ranging from Stone Age daubing to robotic spraying. They are tested with pencils, fingernails and coins, but also with lasers and by neutron scattering and secondary ion mass spectrometry. They add decorative and protective value far beyond their cost, yet the users continually demand lower prices. Formulas are in a state of flux as technologies evolve to give better properties and lower emissions of less hazardous solvents. It is difficult to know where we are, much less where we are going! This overview discusses current aspects of formulation, manufacturing, application and testing. The emphasis is on automotive coatings, but other products are considered as well. It presents future trends that will be driven by quality, environmental and economic pressures along with competition from other materials. The paper closes with a series of challenges and opportunities for the coatings industry in a number of areas, including price pressures and e-commerce, formulation, pigment dispersion, rheology, mechanical properties and adhesion.

For dinner reservations please contact Terri Ziegler (Tel: 412-951-6411; e-mail: mziegler@zoominternet.net) no later than Monday, October 11, 2004. The cost of dinner is \$16.00 per person; discount rate of \$11.00 for retirees; no charge for students. *All are welcome!*

**Why Your Wealth Is
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Albert Einstein was once asked what he thought was the greatest force in the universe. With a twinkle in his eye, he replied, “Compound interest.” In a way, he was right on. The effect of time on your wealth and asset building is amazing.

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The ACS website offers all the information you need at chemistry.org/insurance. Plan Administrators are available at 1-800-752-0179.

ACS Cut and Paste July 2004

ACS Pittsburgh Chemists Club

Pittsburgh Section, American Chemical Society

Tuesday, October 26, 2004

"Quantum Dots for Cell Tracking and In Vivo Labeling"

by

Bryan Ballou

Research Scientist, Carnegie Mellon University

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, October 22, 2004 at (724) 335-0904 or e-mail at esm@icubed.com.

Abstract

The chief difficulty in using quantum dots for biological purposes is their instability in aqueous solvents. We have developed surface coatings to stabilize quantum dots in aqueous solution and to allow specialized applications, including surfaces that cause rapid, high level uptake of quantum dots by cells in vitro. Mixtures of such quantum dots can be used to label cells combinatorially. By using near-infrared-emitting quantum dots, fluorescence could be visualized in standard, stained tissue sections with negligible background. We developed fixation techniques that allow visualization of fluorescence in 1 micron plastic sections; these can be subsectioned for electron microscopy. Cyanine dyes were easily usable with quantum dots. We developed surfaces that increased circulating lifetime in vivo from minutes to several hours. These long-circulating quantum dots enabled visualization of minute details of the vasculature. Localization in tissues was monitored by fluorescence imaging of living animals, by necropsy, by frozen and paraffin tissue sections for optical microscopy, and by electron microscopy, on scales ranging from centimeters to nanometers, using only quantum dots for detection. We subsequently prepared quantum dot conjugates for labeling and targeting. Our coated quantum dots retained their fluorescence in vivo for at least eight months.

Biography

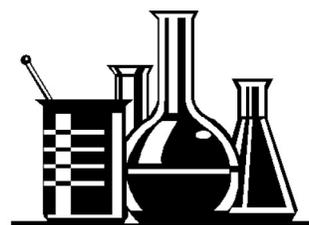
Byron Ballou was born 1941, attended the University of North Carolina (BA, 1963 Zoology, Honors) and Yale University (M.S. 1965, Ph.D. 1969, both Biology). Postdoctoral fellowships at the University of Wisconsin 1970-1976, were followed by 19 years as a Research Professor in the Department of Surgery, University of Pittsburgh. From 1998 on he has been a Research Scientist at Carnegie Mellon University. His main interest is targeting reagents in vivo; his laboratory was the first to target tumors using monoclonal antibodies. Since 1990 he has worked with collaborators at CMU to develop near-infrared labels for in vivo targeting, including quantum dots.

Bayer HealthCare Delivers for 2004 National Chemistry Week

Bayer HealthCare's Diagnostics Division has made an extraordinary in-kind contribution to the 2004 American Chemical Society National Chemistry Week Celebration: "Health and Wellness" valued at more than \$260,000! The NCW Coordinator in each ACS local section will be offered 2 digital glucometers with test strips, hundreds of CliniStix and MultiStix (urinalysis test strips), testing standard solutions and tablets, as well as test tubes and paper cups. The donation was made possible due to the efforts of former ACS President Helen Free and Senior Vice President Joe W. Martin of Bayer Healthcare.

The 2004 ACS Matching Gift Fund matched Bayer HealthCare's gift one-for-two. The ACS Office of Community Activities will use the matching funds to enhance offerings for NCW including a web-based interactive for children, expansion of the chemistry.org/kids website, and materials for ACS local sections.

ACS Cut and Paste July 2004



2005 ACS ProSpectives Conferences

Detailed information for these, and other ACS ProSpectives conferences, can be found by visiting www.acsprospectives.org

Process Chemistry in the Pharmaceutical Industry

February 6-9

Miami, Florida

Chairs: Margaret Faul, Amgen; Joseph Armstrong, Merck

Interplay of Chemistry and Biology in Integrative Biology

March 6-9

Miami, Florida

Chairs: Stephen Naylor, MIT; Michael Briggs, Vertex Pharmaceuticals

Advanced Forensic Science Applications for the Food and Drug Industries

May 1-4

San Diego, CA

Chair: Fred Fricke, FDA

Discovery and Selection of Successful Drug Candidates

May 15-18

Boston, MA

Chair: Andrew Combs, Incyte Corporation

(Tentative) Organic Microelectronics (joint with IEEE and MRS)

July 10-13

Ogunquit, Maine (tentative)

Chairs: Tobin Marks, Northwestern (ACS); Henning Sirringhaus, Cambridge University (IEEE),
George G. Malliaras, Cornell University (MRS)

ACS Cut and Paste July 2004



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Aliquippa, PA 15001

724-378-9334

e-mail: tracijohnsen@comcast.net

2004 Directory of Pittsburgh Section Officers and Committee Chairs Available Online

A complete directory of names, phone numbers, and addresses for Pittsburgh Section officers and committee chairs can be found on the section's website.

**[http://membership.acs.org/
P/Pitt](http://membership.acs.org/P/Pitt)**

Paper copies are also available. Please contact Pittsburgh Section Chair, Kay Bilal, at 304-723-2358 if you would prefer a paper copy of the directory.

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The Crucible

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Pittsburgh Area Calendar

October

- Mon. 4 **Society for Analytical Chemists of Pittsburgh (SACP)**
Duquesne University, Maurice Falk Hall
“Overview of Weapons of Mass Destruction”
Eric Poach, BS, Ed, EMT/P, Chairman, Emergency Preparedness Committee, Mercy Hospital of Pittsburgh
- Thurs. 7 **Energy Technology Group**
More Restaurant
“O Biomass! Biomass! Wherefore Art Thou Biomass?”
William Guyker, P.E.
- Wed. 13 **Polymer Group**
Duranti’s Restaurant
“Organic Coatings, The Paradoxical Materials”
Clifford K. Schoff, Schoff Associates
- Wed. 20 **Spectroscopy Society of Pittsburgh (SSP)**
Duquesne University, Mellon Hall of Science, Laura Falk Auditorium
“Recent Results from the Mars Exploration Rovers: Spirit and Opportunity”
Robert C. Anderson, NASA Jet Propulsion Labs
- Wed. 20 **SSP Technology Forum**
Duquesne University, Mellon Hall of Science
“Archaeology at the Fort Pitt Blockhouse: A View into Pittsburgh’s Past”
David A. Anderson
- Fri.-Sat. 22-23 **NCW Celebration**
Carnegie Science Center
- Tues. 26 **ACS Pittsburgh Chemists Club**
Duranti’s Restaurant
“Quantum Dots for Cell Tracking and In Vivo Labeling”
Bryan Ballou, Research Scientist, Carnegie Mellon University

November

- Thurs. 4 **Energy Technology Group**
More Restaurant
“Mercury Emissions Control”
Thomas J. Feeley, Environmental Systems Technology Manager, National Energy Technology Laboratory

*The
Crucible*

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A newsletter of the Pittsburgh Section of the American Chemical Society

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