THE OCTAGON

Volume 90, No. 4, April 2007 Lehigh Valley Section of the American Chemical Society

In This Issue:

April Meeting Announcement: 795th LVACS Meeting: Moravian College Undergraduate Student Poster Session and Student Awards Night

Date: Tuesday, April 24th
Reception and Student Poster Session: 5:00 – 6:15 pm, Lobby Collier Hall of Science
Dinner: 6:15 pm – UBC Room, Haupert Union Building
Meeting and Student Awards Presentation: 7:30 pm Dana Lecture Hall, Collier Hall of Science
Talk: At the conclusion of the meeting - Dana Lecture Hall, Collier Hall of Science
Menu: Buffet featuring Baked Chicken Breast with Pineapple/Orange Sauce and Pasta Primavera
Cost: members $20, students & retirees $10
Contact: LouAnn Vlahovic by Noon, Thursday, April 19th. Please include your name, affiliation, and for students whether they are an awardee, poster presenter or both. Registration can be made by phone (610-861-1300) or by email melnv01@moravian.edu (the last two digits are numbers). Please put LVACS Registration in the subject line. (Note: email registrations will be confirmed by a return email.)
Directions: Directions to Moravian can be found on the web at http://www.moravian.edu/admission/directions.htm. Suggested parking is in Lots M, N, & O, along Locust Street. campus map: www.moravian.edu/campusMaps/north.htm.
Speaker: Les McQuire
Les McQuire was born in Dundee, Scotland and completed both his undergraduate degree and PhD at his home town University. He received a Fulbright Scholarship to travel to the University of Texas at Austin where he carried out Post-doctoral work with Prof. Phil Magnus culminating in the total synthesis of Strychnine. Les then moved to Ciba Pharmaceuticals (now part of Novartis) in 1992 where he was part of the Arthritis and Bone Group. He has initiated and led several projects including the Novartis Cox-2 and MMP efforts. In 2003 he switched to the Cardiovascular disease area and help build the Novartis chemistry group in Cambridge, MA. Les is very active in ACS, having chaired the North Jersey Section, and is currently a councilor for that section. He is active in several ACS Divisions and the Royal Society of Chemistry.
Talk: Drug Discovery: A Life in a Day
The talk with provide an overview of drug discovery, the challenges and opportunities. It will also discuss how research is carried out and scientists interact in an industrial setting. The talk will end with a discussions of "Lessons Learned Down on the Pharm(a)", common sense thoughts that are as relevant for our job searches, careers and lives today as they were to our great great grandparents "down on the farm".

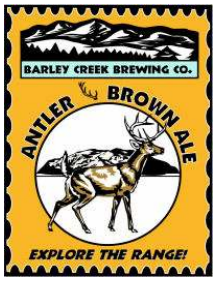
May Meeting Announcement: 796th LVACS Meeting: East Stroudsburg University at Barley Creek Brewing Co Pub Night - Year End Celebration! Second Spouse's Night

Date: Tuesday, May 15th
Social: 6:00-7:30 PM - Barley Creek Back Deck- Open Bar - Complimentary beer and house wines 6:00-8:00 PM (other alcoholic beverages available as cash bar). Wings, Jalapeno Poppers, Assorted Cheese and Crackers and Stuffed Celery. Shuffle board, darts, chess and other games available. Come have fun and let off some steam!

Beer Tasting: 7:00 PM - The Brewmaster of Barley Creek Brewing Company will lead us in sampling the fine beers the brewery has to offer. Discussion of brewing ingredients and techniques will make this worth the drive!
Brewery Tours: Throughout the evenign with the BCB Brewmaster
Dinner: 7:30 PM - Barley Creek Back Deck
Menu: House salad, Choice of:
8 oz top sirloin topped with sautéed mushrooms, served with mashed potatoes and seasonal vegetables OR Cajun grilled salmon filet, served with rice and topped with a creamy dill sauce, Veg option - Penne a la Vodka with garlic bread
Dessert - New York cheese cake
Meeting: Business meeting during dinner
Cost: $26, spouses, students and retirees $18
Contact: Michelle Jones-Wilson by 4PM, Monday May 7. Please provide choice of entree and affiliation. mjwilson@po-box.esu.edu or 570-422-3703 - email contact preferred.

Directions: Directions: Barley Creek Brewing Company, Sullivan Trail & Camelback Road, Tannersville, PA **http://www.barleycreek.com/find_us/index.shtml**

About Barley Creek Brewing Co: Located in Tannersville, right off route 80's exit 299 in between the Crossings Outlet Stores and Camelback Ski area (Camelbeach Water Park, Barley Creek is the Pocono Mountains' Original Brewpub and Restaurant, where you can always find great food, freshly brewed beer, a comfortable atmosphere, friendly people, and a unique place to kick back, relax and have a great time. Bring your friends, bring your family, bring your friends' families. Cheers!



February Meeting Minutes:

The 793rd meeting of the Lehigh Valley Section of the American Chemical Society was held on Fenruary 27, 2007 at Cedar Crest College. Chair Paul Bouis called the meeting to order at 7:30 pm. He began the meeting with a poem in tribute to Dorothy Blaney, Cedar Crest College President from 1989-2006 who passed away this past year.

The current Officers of the LVACS for 2007 were introduced:
Chair Paul Bouis
Immediate Past Chair and Alternate Councilor T. Michelle Jones-Wilson
Chair Elect Julie Ealy
Treasurer John Freeman
Secretary Chester Crane
Councilor Carol Baker Libby
Councilor Pamela D. Kistler
Alternate Councilor Roger Egolf

Minutes from the November meeting were approved by the section as published in *The Octagon*. If there are any members who are not receiving *The Octagon*, please inform the editor, Michelle Jones-Wilson.
Treasurer's Report: We are solvent.
Organic Scholarship: John Freeman described the details of the award:

The Lehigh Valley Section of the American Chemical Society's Scholarship for Organic Chemistry Competition takes place on Saturday April 28, at Moravian College Bethlehem, PA, Collier Hall of Science - Dana Lecture Hall 9:00AM-10:30AM. The competition entails taking the ACS Organic Chemistry Examination (50%), a letter of recommendation from the student's organic chemistry professor (10%), and an essay on a topic in organic chemistry (40%). The value of the scholarship is $1000. Additionally the top essay will receive $100. Details for the letter and the essay have been published in the Octagon (*Editor's note: Details are available in this issue page #.*)

Carol Baker Libby described the details of the Undergraduate Research Poster Session coming up in April:
Undergraduate Research Poster Session
Sponsored by
The Lehigh Valley Section of The American Chemical Society on April 24, 2007 at Moravian College, 5:00-6:15 PM Preceding the 795th meeting of the Lehigh Valley Section of the ACS. (Meeting details will be published in the March and April Octagon).

The next meeting will be held at DeSales University on March 23, 2007. It will be High School Teacher's Night.

Professor John Griswold introduced the speaker for the evening, Dr. Thomas Brettell. His talk for the evening was entitled "Measuring Alcohol in Blood and Breath for Forensic Purposes - A Historical Perspective". A detailed abstract appeared in *The Octagon*.

The meeting was adjourned following the presentation.
Respectfully submitted,
Chester Crane, Secretary LVACS

This Month in Chemical History

Harold Goldwhite, California State Univ. Los Angeles
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Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Gorgonio Sections of the American Chemical Society

I don't want my readers to get the wrong idea; I do read books other than those featuring old science. In fact I read many mystery stories, and perhaps one day I'll write some columns about an interest of mine in scientific detectives in mystery fiction. But not today. The opening of this column was inspired by my reading recently "Lelia: The Life of George Sand" by Andre Maurois, translated by Gerard Hopkins (Penguin Books, London, 1977). The life story of the great French woman novelist is splendidly presented in this book, including her liaisons with many distinguished men in the arts including Chopin. But my attention was caught by references to a man who was not one of Sand's lovers, but was a distinguished 19th.Century chemist.

"George Sand's Diary, February 12th., 1866: Dinner at Magny's dinner with my 'pals'. Their welcome could not have been warmer. They were all very brilliant except Berthelot, the great scientist …

April 9th. 1866; Our Magny dinner with all the pals…. Berthelot did not open his lips. He and I exchanged not a single word."

Perhaps Marcelin Berthelot was overawed by the brilliance of the literary ensemble at those dinners which included Edmond and Jules Goncourt, Gautier, Flaubert, Taine, Renan, and Sainte-Beuve among others.

Berthelot (not to be confused with Lavoisier's contemporary and colleague Claude-Louis Berthollet) was indeed a great scientist. My account of his career draws on the Berthelot memorial lecture, delivered by Harold Bailey Dixon, a pioneer in reaction kinetics, to the Chemical Society of London on November 23, 1911.

Berthelot was born in Paris on October 25, 1827 and died, also in Paris, on March 18, 1907. His father was a physician and his parents sent their precocious son to a distinguished school, the College Henri IV, where he won the highest prizes in competition with scholars from all over Paris. His education was rich in the classics, but he decided to study natural sciences at university. He completed the full medical course but also worked at chemistry in the laboratory of Pelouze, a pioneer in natural products chemistry. He was appointed in 1851 as lecture assistant at the College de France to Ballard, who discovered bromine. He earned his doctorate in three years with a thesis "On the Combinations of Glycerine with Acids, and on the Synthesis of the Immediate Principles of Animal Fats". Organic chemistry was now his chosen domain.

The next few years saw successions of successes in this field. Studies of the chemistry of sugars were followed in 1855 by the earliest of his papers on the total syntheses of organic compounds from simple building blocks: ethanol from ethylene; and formic acid from carbon monoxide. He followed this up with syntheses of hydrocarbons, methanol, and oxalic acid. Passage of hydrogen through a carbon arc yielded acetylene which could be elaborated into more complex organic compounds and also trimerized to benzene, parent of the aromatics. These syntheses of organic compounds from relatively simple starting molecules were perhaps the true death of the vitalism doctrine in organic chemistry. Berthelot was appointed Professor in the Ecole Superieure de Pharmacie in 1859 and lectured there, but continued his researches at the College de France. In 1860 his most famous book appeared: "Organic Chemistry founded on Synthesis." Wide recognition of Bethelot's talents soon followed; membership in the Academie des Sciences and in foreign chemical societies; prizes from the Academie, the Royal Society, and the Chemical Society of London.

In mid-career Berthelot turned to topics in physical chemistry. His studies of the ethanol/acetic acid/ethyl acetate/water system with his student St. Gilles were among the earliest of both reaction kinetics and equilibrium. He also studied the partition of solutes between immiscible solvents. But his great work in this area was in thermochemistry. From 1863 until 1879 he and his students established the thermochemical data for hosts of reacting systems which he published in two major books. He enunciated his (incorrect) "principle of maximum work" that every chemical system reacts to produce the maximum amount of heat energy – which ignores what we now know of the effects of entropy. But that was a considerably later notion. Berthelot also made important contributions both theoretical and practical to the study of explosions.

In a subsequent column I will discuss Berthelot's contributions to public life in France – and to the history of chemistry.

ChemShorts for Kids: Carbon Dioxide Tests

Reprinted with permission from Dr. Kathleen A. Carrado, Chicago Local Section.

An archive of previously published ChemShorts is available at: http://membership.acs.org/C/Chicago/home.html

(This ChemShort was originally published in March and April of 2006 for the Chicago section of the ACS)

Part I. Limewater

Kids, here you will make a solution that can test for the presence of carbon dioxide (CO_2) gas. This is a two-part project. Save the limewater you make for use in the next issue of ChemShorts. You will need two glass quart jars with lids, a tablespoon, and lime (CaO, the substance used in making pickles, not the small green citrus fruit). Fill one jar with water. Add one tablespoon of lime and stir. Secure the lid and allow the solution to stand overnight. Pour off the clear liquid into the second jar very carefully, do not let any of the settled lime sneak in. Keep the jar of clear limewater closed until needed.

At first the liquid should be milky white and opaque. Opaque means that light cannot pass through, making the solution impossible to see through. The milky appearance is due to undissolved particles of lime that are temporarily suspended in the water. It takes time for all of these particles to settle down. The resulting clear liquid contains as much dissolved lime as it can hold before settling out. This is called a saturated solution. It is similar to dissolving Kool-Aid or lemonade crystals in water. When too many crystals are used, the extra settles out on the bottom.

The jar must be kept tightly closed so that carbon dioxide from the air won't dissolve in it. We have other plans for this solution.

(Notes: Do not let anyone drink this solution and let an adult partner handle the lime for you).

Part II. Chemical Breath

Kids, now we can use the limewater made last month to test for carbon dioxide (CO_2) gas in your exhaled breath. You will also need a straw and a pint-sized jar. Fill this jar halfway with the limewater. Use the straw to exhale your breath into the limewater, and continue until the clear solution turns milky. Why does this happen? Limewater always turns milky when CO_2 is mixed with it. The chemical in the limewater is dissolved calcium oxide (CaO). This combines with the CO_2 gas to form a white powder called calcium carbonate ($CaCO_3$). This is not at all soluble in water, kind of like sand does not dissolve at all. Have you ever heard of limestone? This is what you just made with your own breath! The powdery limestone precipitate should settle to the bottom of the jar after several hours.

(Notes: do not drink this solution - take care with the straw to only exhale, not inhale).

Reference: Janice Van Cleave in "Chemistry for Every Kid", Wiley: NY, 1989.

LVACS Scholarship Opportunities Organic Chemistry Scholarship

The Lehigh Valley Section of the American Chemical Society's Scholarship for Organic Chemistry Competition takes place on Saturday April 28, at Moravian College Bethlehem, PA, Collier Hall of Science - Dana Lecture Hall 9:00AM-10:30AM. The competition entails taking the ACS Organic Chemistry Examination 50%), a letter of recommendation from the student's organic chemistry professor (10%), and an essay on a topic in organic chemistry (40%). The value of the scholarship is $1000. Additionally the top essay will receive $100. Details for the letter and the essay follow below. The student should be below the junior level currently enrolled in organic chemistry attending college at an institution in the section. The student also must be a chemistry biochemistry or chemical engineering major. Students should indicate their interest in the scholarship in advance to John Freeman at 522 Raub St Easton PA 18042 , jcf2@rcn.com

Letters of Recommendation: When writing a letter of recommendation on behalf of a student who is applying for Lehigh Valley ACS Scholarship, please speak to the student's skills in lecture and laboratory from Organic Chemistry I and Organic Chemistry II. In addition to performance on written exams and a course grade for Organic Chemistry I, it would be helpful to comment on the student's proficiency in organic lab and his or her participation in recitations. We would also like, if possible, the letter to address the students' quantitative skills by commenting on their performance in quantitative analysis or its local equivalent. Please place your letter of recommendation in a sealed plain envelope and place your signature over the seal. The student will be required to bring the sealed letter to the ACS Organic Chemistry Standardized Exam on 9 AM April 28, 2007. Please email Dr. Freeman at **jfreeman@po-box.esu.edu** if you plan to attend and compete for the scholarship.

Essays: The student should choose a molecule, a group of molecules or a process in organic chemistry including its synthesis or structural elucidation for a molecule or a representative molecule of a group or a number or examples and mechanism for a process. Judicious use of structures is expected. The essay should address the impact of the molecule or process on society, and the student's personal interest in the process or molecule. The essay should run approximately 3 pages +/- a quarter page of text, not including figures in times new roman 12 point font or equivalent with 1 inch margins on all sides. The students name a brief title and page number should appear in the header of each page. An additional page with references should be included. References should be presented as end notes according to the style of the Journal of Biological chemistry.

(See http://www.jbc.org/misc/ifora.shtml).

The essay will be rated on:

- 20% - Ease of reading, including grammar, spelling, and logical flow of the material.
- 40% - Appropriate depth of coverage on the development of the molecule.
- 30% - Appropriate depth of coverage on the impact on society and student's interest.
- 10% - Appropriate use of references.
- 5% - Adherence to the formatting rules provided.

engineering major. Students should indicate their interest in the scholarship in advance to John Freeman at 522 Raub St Easton PA 18042 , jcf2@rcn.com

Introduction to ChemInsight™

In response to the growing demand for scientific experts in the legal, accounting and consulting fields, ACS is launching ChemInsight™ – a scientific experts matching service – at the Chicago National Meeting.

Legal professionals often find themselves involved in litigation with scientific topics which a lay person would have difficulty understanding. They resolve this problem by hiring experts to assist in the understanding of scientific issues, make pre-trial preparations or provide testimony to persuade a jury during trial. In these roles, experts often play a critical role in determining the course and outcome of a case. Demand for experts is not limited to the legal domain. In the wake of the Sarbanes-Oxley Act of 2002, forensic accountants and consulting firms also seek experts to provide insights into the sciences, technologies, processes, and other areas with strong scientific content. As chemical and allied sciences increasingly find their way into commercially successful products and services, the demand for scientific experts to help legal and other professionals is bound to increase.

Initially, ChemInsight™ plans to offer two services:

1. Directory Listing Service, which would promote experts through a free search on ChemInsight.org and through a free print directory distributed to over 60,000 law, forensic accounting and consulting firms;
2. Expert Matching Service, whereby ChemInsightTM would contract with law, accounting and consulting firms to conduct a customized search to identify the most relevant experts who best meet their needs.

By helping scientists in chemical and allied sciences gain access to opportunities beyond their core disciplines, ChemInsight™ would enable them to earn additional income and solve challenging problems in a new context, thereby enhancing their visibility beyond the scientific community. This would also help legal, consulting, and accounting firms solve the ever increasing number of cases and problems involving complex scientific topics.

If you have expertise in a relevant science area, ACS invites you to list with ChemInsight™. Listing with ChemInsight™ offers several advantages over other expert services in the market, such as:

* Exclusive focus on chemical and allied sciences – there is no other service that caters exclusively to these sciences
* Offered by the American Chemical Society – the world's largest scientific organization
* Lowest listing fees among comparable services
* Attractive member discounts on top of the already low listing fees
* Active promotion through the web and print media, including:

Custom-designed www.cheminsight.org website providing comprehensive search, registration and profile editing capabilities

* Direct access to 60,000 legal, accounting, and consulting professionals through the free distribution of the National Directory of Scientific Experts
* Multiple ACS websites that generate over 110 million visitors annually
* Journals and magazines relating to intellectual property and several other relevant areas of law
* Premier legal websites and legal symposia/conferences
* Direct contacts and promotions to business consulting and forensic accounting firms with interest in the chemical enterprise

ChemInsight™ is a new initiative of the Office of New Business Development (NBD) of the Society. Thomas Smith serves as the Manager of ChemInsight™. For more information, please visit **www.ChemInsight.org.**

Regional Meetings

39TH Middle Atlantic Regional Meeting (MARM) Opens May 16

May 16 – 19 are the dates for MARM 2007 to be held at Ursinus College, Collegeville, Pennsylvania. Visit their website at www.marmacs.org to view both their technical and social programs and for information on where to stay.

MARM 2007 designed an exciting and innovative program with the professional interests of the regional members in mind. Topics include biological chemistry, chemistry of aging, sirtuin biochemistry, molecular magnetism, carbon nanotubes, glycoproteins, and a symposium dedicated to Alan G. MacDiarmid. The symposia begin officially on Wednesday morning, but a welcome reception is scheduled for Tuesday evening.

Also planned is a Cope Scholars Award symposium, along with a number of awards recognizing the contributions of chemists, industry, and educators in the region, a Women Chemists luncheon and half-day workshop on "Thriving in the Workplace" and ACS Career Management workshops.

39th Central Regional Meeting (CERMACS) Scheduled for May 21 – 23 in Covington, Kentucky

The Cincinnati section is hosting CERMACS 2007, at the Northern Kentucky Convention Center. You can get details on the program by visiting the meeting website at http://www.cermacs2007.org/. If you have not reserved a room yet, you can do so at the website.

They promise a strong and innovative program. Topics include forensics as presented by William Dean, chief of forensic sciences, Hamilton County Coroner's Office; the "Fantastic Four Science Guys": Bassam Shakhashiri, David

Katz, Al Hazari and John Fortman know how to make learning fun; the art of brewing, hosted by the Master Brewers Association of America; illuminating molecules; and chemical /biological sensors.

62ND Northwest Regional Meeting (NORM) to Meet in Boise, Idaho June 17 – 20

The Richland, Washington, local section is hosting NORM 2007 in Boise, Idaho,

The meeting will be held in conjunction with the annual meeting of the Pacific Division of the American Association for the Advancement of Science (2007 AAASPD). This offers an opportunity for a broad spectrum of topics by the scientific communities represented, with special emphasis on the chemical sciences.

Symposia include an Experimental Green Chemistry Lab, Thermodynamic Modeling, Effect of Contaminants on Fuel Cells, Agricultural and Public Health Protection, Radiopharmachemistry, Undergraduate Chemistry Demos, Semiconductor Materials, and Community College Options in Chemistry.

The meeting opens Sunday with a poster session and welcome mixer. NORM 2007 has scheduled lunch and a field trip to the Birds of Prey Center. Visit their website for more details and to make your room reservation: http://northwestchemistry.org/Norm_2007.

Fall Regional Meetings

Advance registration and online abstract programs are open for fall regional meetings. Each has unique and topical programming planned. Visit their websites to submit a paper, register, or peruse their topics.

20th RMRM, Denver, CO
August 29 – September 1
www.uwyo.edu/rmr2007acs-aiche

41st WRM, San Diego, CA
October 10 – 13, 2007
http://www.wrmacs.org

59th SERMACS
Greenville, SC
October 24 – 27
http://www.sermacs2007.org/

63rd SWRM, Lubbock, TX
November 4 - 7
http://www.depts.ttu.edu/chemistry/SWRM07/

42nd MWRM, Kansas City, MO
November 7 – 9
http://membership.acs.org/m/mwrm2007/

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