

the Alembic



Chair's Corner



This month our speaker is Jim Phillips of UWEC; he will be speaking on "The Climate According to Dr. Jim: A Concerned Scientist's Best Attempt at Assessing Global Climate Change". This seminar as others this year are related to the National Chemistry Week 2003 Theme: Earth's Atmosphere and Beyond. The ACS has a few events scheduled for NCW and now would be a goodtime to get thinking about how we might participate.

The NCW Unifying Event is to "Honor Innovators and Pioneers in Aviation and Atmospheric Chemistry." Predicting weather, understanding the ozone layer, combating acid rain, studying the impact of greenhouse gases, and preparing materials for space flight are a few areas that are covered under this theme. Do you know of any honorable pioneers or innovators in Central Wisconsin? Do you have comments on how studies in aviation and atmospheric science have benefited our environment, especially in Central Wisconsin? Do you have ideas about how we might best celebrate the advances in these areas?

Another National Event for NCW is a Poetry Contest for K-12 students. There are prizes awarded for K-2, 3-5, 6-8, and 9-12 for poems about the chemistry of

trees; the 3-12 groups are required to submit a poem in the haiku format. The ACS example haiku follows:

Trees are beautiful
They clean our water and soil
Trees nourish our souls

It has been a few years since we had K-12 students participate in the National Contest; if you know of any teachers who might be interested in having their students participate in the contest, please contact Martin Rudd (UW-Marathon) or me for more information.

REMINDERS: Please send your nomination letters for the 2003 Outstanding Service Award by April 15, 2003. The 2003 awards will be given at our meeting on May 7, 2003 in Stevens Point. Our next meeting is on April 16, 2003 in Eau Claire. Dave Lewis is hosting his colleague, Jim Phillips. I look forward to seeing you in Eau Claire.

Robin

ACS-CWS Web Page

www.uwsp.edu/chemistry/acscws/

Contains the most up-to-date information about section activities including all issues of the Alembic and meeting notices.

ACS - CWS Mini-Directory

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American Chemical Society

Central Wisconsin Section



A Concerned Scientist's Best Attempt at Assessing Global Climate Change

by

Dr. Jim Phillips

University of Wisconsin – Eau Claire

Wednesday, April 16, 7:30 pm

UW-Eau Claire

Phillips Hall Room 413

5:30 Cocktails; 5:45 Dinner, Sweetwaters Restaurant

Abstract:

Global Climate Change is among the most controversial issues at the science-public policy interface, mainly because mitigating the potential effects of greenhouse gas emissions will undoubtedly require a substantial economic sacrifice. As a result, science underlying this issue is often distorted, mainly through non-peer reviewed publications and web sties. Unfortunately, many find this "junk science" to be credible. My frustration with this situation motivated me to use my background in atmospheric chemistry to sort through the "junk" and identify the most credible data and conclusions. My goal is to present these results, raise awareness on this issue, and aid fellow chemists in reaching their own conclusions. In the talk, I will give a brief history of the issue and an overview of factors that affect climate, present data of particular significance, and review the conclusions in the most recent (2001) technical summary report from the Intergovernmental Panel on Climate Change. I will also touch a few ethical facets of this complex issue.

The Speaker:

Jim is a native of the Twin Cities area. He obtained a B.A. in Chemistry from Middlebury College (VT) in 1991, and a Ph.D. in Physical Chemistry from the University of Minnesota in 1996. He then spent two years in as a NOAA Postdoctoral Follow in Climate and Global Change, working mainly in the Chemistry Department at the University of Colorado, but also with the Chemical Kinetics Group at the National Center for Atmospheric Research. Currently, Jim is an Assistant Professor of Chemistry at the University of Wisconsin - Eau Claire. He teaches general, physical, and environmental chemistry, and maintains an active research program focused mainly on fundamental aspects of molecular structure.

The social mixer at 5:30 and dinner at 5:45 PM will be at Sweetwaters Restaurant, 1104 W. Clairemont Ave, Eau Claire (near the intersection of Clairemont (US 12) and State Highway 37). **Make reservations by Tuesday at 5 PM** by leaving a message at 715-836-4744 or email lewisd@uwec.edu.

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ACS - Central Wisconsin Section 2003 Meeting Schedule

DATE	LOCATION	SPEAKER	TOPIC	HOST
April 16	Eau Claire	Jim Phillips	A Concerned Scientist's Best Attempt at Assessing Global Climate Change	Dave Lewis
May 7	Stevens Point	John Fortman	The Chemistry of Flight	Marv Lang
Sept 10	Wisconsin Rapids	Robert Radel	Chemical Weapons: What, Where, How	Dave Thiel
October 15	Wausau	Robert Bates	The Chemistry and Alchemy of Brewing	Martin Rudd
November	Marshfield	Kevin Lang	Monoclonal Antibodies	Dana Haagenon

Patents — What Every Chemist Should Know

A new patent is granted every 3 minutes – 155,000 were granted by the U.S. government last year. The chemical sciences account for a significant portion of those patents. And for people in the chemical sciences, knowing how to register a patent or protect a patent is an important aspect of their professional skills.

Copies are available through the ACS Office of Society Services by calling 800-227-5558. The first copy is free, and additional copies are \$5 per copy. Bulk orders of more than 25 copies are \$3 each. The booklet is also available on the ACS Office of Legislative & Government Affairs Web site at <http://www.chemistry.org/government/patentprimer.pdf>

Call for Nominations 2003 Awards

One of the more significant activities that the Central Wisconsin Section of ACS sponsors each year is the recognition of outstanding performance by chemists in our area. Recipients of these awards

are recognized at our annual Awards Banquet and Spouse's Night, this year to be held on May 7, 2003. The time has come for **YOU** to submit your nominations. Please consider taking a little time and submitting nominations for:

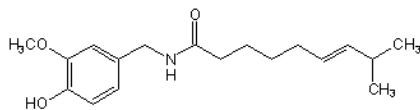
Outstanding Contribution to Chemistry

Outstanding Company

Outstanding Service

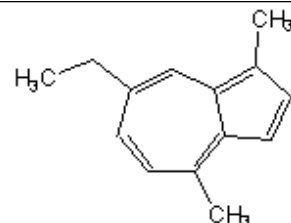
Nominations for these awards should be submitted by April 15 to:
Robin S. Tanke
Dept. of Chemistry, UW-SP
Stevens Point WI 54481
phone (715) 346-4325 (office)
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Molecules of the Month



Chemical Structure of Capsaicin

Would New Orleans Cajun food be as spicy without **capsaicin**? We think not. Cayenne peppers get their spiciness from this "pungent" molecule. Capsaicin is so powerful, the human tongue can detect its heat at one part per 100,000.



Chamazulene is a deep blue oil extracted from the chamomile flower. It is a "natural" anti-inflammatory agent used in herbal remedies and cosmetic products.

This Month in Chemical History

Harold Goldwhite, California State University, Los Angeles

Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Gorgonio Sections of the ACS

This is the final column devoted to anniversaries of important developments in chemical history that take place in 2003. The year 1828, just 175 years ago, was a rich year for chemistry. Berzelius published a major revision of his atomic weight table which drew on new ideas such as the Law of Petit and Dulong and isomorphism to correct a number of values. One of my personal heroes of early chemistry, William Hyde

Wollaston, died of a brain tumor in 1828. Discoverer of palladium and rhodium, Wollaston was best known for developing a process for making pure malleable platinum, and made a fortune by his process. And Alexander Butlerov was born in September of 1828. A pioneer of organic structural theory, Butlerov was the first chemist to appreciate that organic compounds actually had structures, that is a defined connectivity among their atoms.

Friedrich Woehler had a busy 1828. With an associate he prepared pure beryllium for the first time, and he synthesized urea without the use of an animal kidney, the first synthetic preparation of a compound important in animal metabolism. The significance of this synthesis, in particular whether it was the death blow to the theory of vitalism in organic chemistry, has been argued by chemical historians almost since it was first announced. The jury is still out, but the arguments make interesting reading. Ted Benfey's excellent book "From Vital Force to Structural Formulas" (Houghton Mifflin, 1964; reprinted more recently by ACS) gives a detailed account of this discovery and its perceived implications by chemists in the nineteenth century.

The year 1878 saw one of those interesting occurrences of simultaneous discovery, this time in the field of polymer science and technology. Louis-Marie Bernigaud, the Count of Chardonnet, invented a process by which cellulose was dissolved in a solution of cuprammonium sulfate and then precipitated by acid. If the cellulose solution was extruded into the acid through jets a lustrous fiber was produced, an artificial silk that was called rayon. But just before this an English chemist, Joseph Swan, had patented a similar process. Chardonnet was the

more energetic developer. Fabrics made by his rayon process were exhibited at the Paris Exhibition of 1891 under the name of Chardonnet Silk and were a great success. Of course rayon, which is a reconfigured form of cellulose rather than a synthetic polymer, is still very much with us, and recently developed treatments have made it washable. Joseph Swan went on to develop nitrocellulose as an explosive propellant and as a precursor of carbon filaments in incandescent lamps. He became a pioneer of the electrical industry later in the nineteenth century.

Moving ahead 25 years the third Nobel Prize in chemistry was awarded in 1903 to Svante Arrhenius of Sweden for his theory of electrolytic dissociation. Disdained by his doctoral committee, Arrhenius was awarded the lowest class of doctoral degree and had to look abroad for opportunities. The younger generation of physical chemists headed by Ostwald and Van't Hoff recognized his originality and penetration, helped him to get a position, and sponsored his work. After the award of the prize Arrhenius was lured back to Sweden by the offer of a prestigious professorship and lavish support. The first successful process for fixing atmospheric nitrogen to produce nitric acid and hence artificial fertilizers containing nitrogen was developed in 1903 by Birkeland and Eyde, Norwegian chemists. Their process involved passing air through an electric arc and then rapidly chilling the resultant gas. This contained a few percent of nitric oxide formed by the high temperature combination of nitrogen and oxygen. The nitric oxide was easily further oxidized and dissolved in water to form nitric acid. The Birkeland and Eyde process could only be run economically where electric

power was abundant and cheap - conditions that were fulfilled in Norway with its hydroelectric resources. The process was supplanted by that of Haber and Bosch a decade or so later.

Councilor's Report
225th National ACS Meeting,
New Orleans, Louisiana

by
C. M. Lang; UW-Stevens Point

The first Council meeting of 2003 was an unusual one ... several significant proposals were presented and voted upon under a somewhat somber setting. President Elsa Reichmanis began the meeting precisely at 8:00 am on Wednesday March 26th with a request. "Would those Councilors who have family members currently serving in the armed forces of the United States please stand" was her request. About 20% of those in attendance stood; applause was given and a moment of meditation observed for the safety of all combatants. It was a poignant time for me personally. As many of you know, I have two sons, who are currently on active duty, both hold the rank of major ... one in the Marines and the other in the Air Force. Twelve years ago, during Desert Shield and Storm, all three of my sons were on active duty. These are difficult times and emotions run high on both sides of this political issue. But the attitude expressed by the elected leadership of the ACS at this particular time in history made me proud to be an ACS member.

Overall, the New Orleans ACS National Meeting had 14,576 attendees 11,705 of which were members ... the remainder were guest, one day registrants or exhibitors only. Over 8700 technical papers and posters were presented, 504 booths were sold to 209 exhibitors located in

the Morial Convention Center ... all this was handled in a 4-1/2 day time period! As Councilor from the Central Wisconsin Section, I represented the local membership at the Council meeting. Further, I continued my sixth year of service on the Council Committee on Constitution & Bylaws, which met all day Sunday (3/23) before the official start of the meeting. C&B held a two hour session immediately following the close of the Wednesday Council meeting. I also continue to serve on the National Chemistry Week Task Force which held its meeting on Saturday afternoon (3/22). As has been my custom, let me now take a few moments to share some "random thoughts and miscellaneous items" I've noted regarding the Council meeting and other sessions I attended. Hopefully you'll find them of interest. Also refer to forthcoming issues of *C&EN* for further details.

President-Elect (2004):

Next fall you will be asked to participate in the ACS national elections. You will be asked to choose between two candidates for the position of President-Elect in the year 2004. The Committee on Nominations and Elections presented four (4) nominees and the Council selected two to be the official candidates for 2004. Selected were *William F. Carroll, Jr.* of Occidental Chemical Corp, Dallas, TX and *Michael E. Strem* of Strem Chemicals, Inc., Newburyport, MA. The individual elected by the Society membership will also serve as President in 2005 and Immediate-Past President in 2006. Bylaw provisions allow for petition candidates to be placed on the ballot provided such petitions are received by July 15th. Position statements will appear in future issues of *C&EN* along with information

supplied with your ballot. Another election item is **District V's** elected member to the **Board of Directors**. Incumbent *E. Ann Nalley* of Cameron University, Chickasha, OK and *Judith Benham*, of 3M Corp., St. Paul, MN have been selected as candidates for a three-year term (2004-2006). CWS is in District V. Thus, when September rolls around, please **VOTE!**

Petition for Division and Local Section Funding:

For several years, attention of the Council and the Board of Directors has been drawn to the fact that several Local Sections and technical Divisions of the Society are in deep financial trouble. Clearly, some of these units are operating in the red and have done so for several years. The Board of Directors upon advice from the Committee on Budget and Finance established an emergency fund wherein \$100,000 was set aside for Divisions in 2001 and \$50,000 for Local Sections. The Divisional Activities Committee (DAC) and the Local Section Activities Committee (LSAC) were charged with devising an appropriate allocation plan. The same dollar amount was been committed for fiscal year 2002. As I have noted in previous reports, looming on the horizon was a method designed to provide a permanent allocation plan of our dues dollar back to Local Sections and Divisions. Such changes would require an alteration of our Society's Constitution and Bylaws. It happened at this meeting! A complex proposal for action was presented and passed which allows the Divisions and Local Sections to receive a share of the annual Society dues (45% and 55%). A complex set of changes to our Society's governing documents will be enacted once confirmed by the Board and the

membership. How will it affect the Central Wisconsin Section? We will receive a bit more in our annual allocation. It is the various technical Divisions that will receive a significant boost in their finances. How will this boost be paid for? Essentially, the Board will assess each member an additional \$2 on their 2004 dues, \$4 on their 2005 dues, etc., up to 2007.

I have much more to report ... including (1) National Chemistry Week themes for 2003 and 2004 are "*Chemistry: The Atmosphere and Beyond*" and "*Chemistry: Wellness and Health*," respectively, to be celebrated in the last full week in October each year (2) Brooklyn Polytechnic and the Wisconsin Alumni Research Foundation (WARF) have been selected as Chemical Landmark Sites, (3) 20% of our Society's membership is over the age of 60 and Immediate Past President Eli Pierce is attempting to establish a "Silver Circle" program for senior members to keep them involved in the chemical enterprise, (4) a new benefit to members is the establishment of homeowners and auto insurance programs offered through Liberty Mutual, (5) dues for 2004 will be increased by \$4 to \$120 plus the special Board assessment totaling \$122.

There really was more to report but I've run out of space. Call me [(715)346-3609] or "quiz" me at the next Section meeting. I'm happy to chat about the meeting and its many different facets. And again thank you for choosing me to represent the Central Wisconsin Section as your National ACS Councilor.

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