



Green Mountain Local Section of the ACS

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Green Mountain Section website:

<http://membership.acs.org/g/greenmt>

Officers 2005

Chair..... Beth Medeiros

Chair-Elect..... Fiona Case

Secretary..... Michele Johnson

Treasurer..... Beth Medeiros

Councilor..... Willem Leenstra

Alternate Councilor..... Martin Case

Committee Chairs

Awards..... Michele Johnson

PR/Web Master..... Fiona Case

NCW Coordinator...Larry Marzec-

.....Gerrior

Newsletter Editor.. Willem Leenstra

Upcoming Events

June, 2005 – We are planning an evening cruise on Lake Champlain on the Spirit of Ethan Allen sailing from Burlington harbor (date TBD)

Fall, 2005 – Ingrid Applequist from Unilever (date TBD)

Fall, 2005 – Vermont Winery Tour (date TBD)

September 22 – Dr. William Zoller – Chemical Outreach Program

October 16-22 – NCW Theme “**The Joy of Toys**” Contest and Mall Demo Events



ACS website: www.Chemistry.org

GMLS May Meeting, 2005

“Soil Chemistry”

Date: Wednesday, May 18, 2005

Time: 6:30 p.m.

Speaker: Dr. Don Ross
Department of Soil Chemistry
UVM

Don Ross started his college education at Middlebury, finishing at UVM where he earned both his M.S. (1980) and Ph.D. (1990) degrees in Soil Chemistry under Prof. Rich Bartlett.

Title: “A Brief History of Soil Chemistry and Soil Testing”

The historical development of soil chemistry from its agricultural roots to its current environmental focus will be described, including his current research on the effects of nitrogen (from acid rain) on forest soils and bog ecosystems, and the interaction between soil manganese oxides and heavy metals. He will also talk about the philosophy and development of soil fertility testing and describe the analytical methods available to evaluate the quality of soil in home gardens.

Location: Middlebury College
McCardell Bicentennial Hall
Room 216

For directions to the talk’s venue use the Middlebury College link: www.middlebury.edu. At their homepage, click on “Campus Map” at the lower bar, followed by selecting McCardell Hall in the Building Index in the upper right of the campus map screen.

Dinner Prior: 5:00 p.m. at Tully and Marie’s, on Bakery Lane in Middlebury

Please RSVP Willem Leenstra at 656-0273 or via e-mail by May 16 to willem.leenstra@uvm.edu

Science Fair

The 42nd Annual Vermont State Science and Mathematics Fair was held at Norwich University on April 9th. Beth, Fiona and Martin were section members who judged for our local section awarding of three monetary prizes to the following budding young scientists:



The \$100 First Prize went to Skyler Degenkolb, a 10th grader from Bellows Falls Union High School. His project was "Hydrogen Emission Spectrum Prediction by the Schrodinger Equation and Confirmation by Spectral Analysis".



The \$50 Second Prize went to Issac Potvin, a 7th grader from Saint Francis Xavier School. His project was "The Effect of Detergent Enzymes on the Decomposition of Protein". Issac used a peeled hard boiled egg to demonstrate the degradation ability of the enzymes in laundry detergent.



The \$50 Third Prize went to Stephen Akiki, a 7th grader from Mater Christi School in Burlington. His science teacher is Tricia Finkle. Stephen won for his project "What Detergent/Soaps Will Extract DNA Best". Stephen extracted the DNA from onions using various detergents.



Honorable mention goes to Jenna Abateill, an 11th grader from Rutland High School. Her project was entitled "How Do Environmental Factors Affect Oxidation of Vitamin C?"

Green Mountain Section Earth Day Celebration

Last month we celebrated Earth Day by hosting a public lecture by Dr. Lauren Bartlett Heine from GreenBlue of Charlottesville, VA. Lauren described the principles of green chemistry and green product design. Many individual chemists, and chemistry companies (including some of the largest corporations) are trying to embrace the idea of sustainability. The challenge is to design and develop chemicals, materials and products that are safe and healthy, and flow in sustainable material cycle.

A classic example of Green Chemistry is provided by the synthesis of Ibuprofen. The original commercial synthetic route, developed by Boots in the UK, has seven steps. The synthesis gives good yields, but of even more importance to the green chemist than yield is atom economy, the percentage of the raw materials and reagents that actually end up in the final product. From this point of view the Boots synthesis was poor, with more than half the materials ending up as waste. In the late 1980's a new company, BHC, was set up to develop a new 'green' synthesis of Ibuprofen. Their method involves only three synthetic steps. It provides good yields, but more importantly the atom efficiency is 77%, a significant reduction in waste. In this case the new synthesis was rapidly adopted, and most Ibuprofen is now made this way.

But in other situations green methods and products have not been so successful. Lauren suggested that this is because some of the first "green products" to reach the market were not as effective as their "non-green" competitors, and also were more expensive. She suggests that consumers should look again at green products, since there have been many improvements. In other cases, government intervention may be necessary to overcome inertia, particularly in situations where the environment is threatened by current products. She gave the example of Sea-Nine - an environmentally friendly alternative to coating the bottom of ships with tributyltin oxide. Rohm and Haas developed the product more than a decade ago, and it received the US EPA Green Chemistry Award, but is still not widely used in the USA (in contrast to most other parts of the world).

Lauren gave a fascinating insight into the challenging and rewarding field of green chemistry. Her presentation was appreciated by a diverse audience, including our guests from engineering departments at UVM, and from New York state.

More information, including links to websites describing the principles of green chemistry, and giving more information about the Ibuprofen synthesis, is available at our website:

http://membership.acs.org/g/greenmt/Earth_Day05.html

Welcome to New Members

Lianhui Cong – UVM
Dr. L. Deresh – Seldon Technologies

Councilor's Report from the San Diego Meeting

by Willem Leenstra

I. Highlights from the Council Meeting

Presidential Candidates. Out of four people that the Committee on Nominations and Elections presented on the slate of presidential candidates, the Council elected two to stand for election later this fall. Katherine Hunt of Rohm and Haas, and John Kozarich of ActivX Biosciences will be joined by one additional candidate, George Heinze, who bypassed the CNE-slate route by collecting signatures on a petition drive.

Dues Increase. A raise in annual dues was approved. By ACS bylaws, dues are tied to the CPI, subject to approval by Council.

Ethics Committee. At the previous national meeting, a proposal to create an Ethics Committee was tabled. At this meeting, the motion to establish such a committee passed overwhelmingly. The charge of this committee will be to develop and oversee such ethics-related activities as will serve ACS members and promote the Society's standards of ethical conduct within the profession of chemistry and its related disciplines.

Meeting Statistics. The Meeting met expectations with more than 15,000 registrants (significantly up from the previous meeting). Such a large figure guarantees that the ACS will not have lost money.

Financial Performance. The Committee on Budget & Finance reported that the ACS ended 2004 with a surplus budget of approximately \$3 million more than anticipated. This increase was in part due to the sale of a conference center in the Maryland countryside.

II. Councilor's Committee Participation

Members of the Committee on Meetings & Expositions are expected to serve on two subcommittees. Out of the six choices, I asked to be on the Subcommittee on Regional Meetings and on the Site Selection Subcommittee. The former has made great progress in preparing a set of documents that will make the job of

putting on a regional meeting less daunting. These address such areas as: preparing a budget for the meeting, guidelines for seeking bids from potential meeting sites, a statement on core programming (e.g., technical program, awards, special events, etc.), and a meeting final report (in the form of a template). Our subcommittee plans on rolling out the new documentations at this year's regional meetings.

The Site Selection Subcommittee at this past meeting adopted a new plan of rotating national-meeting host cities. Out of all the acceptable sites (as judged by the number of hotel rooms near a large convention center), three have always been at the top in terms of attendance: San Francisco, San Diego, and Boston. The financial outcome of a national meeting is, of course, tied to the attendance. Thus we have adopted a three-year rotation schedule in which each of these cities will host every three years. This then leaves three spots every three years to rotate in such "second-tier" sites as Chicago, Philadelphia, New Orleans, etc. In addition, cities that have never (or not recently) hosted will be considered as "experimental" sites, and will be rotated in as the schedule allows. We are currently assigning the sites for 2015-2016. This year, two experimental cities have developed the state of their facilities to where they have become eligible for hosting a national meeting. Thus, this summer, members of our Site Selection Subcommittee will be visiting Denver and Houston to inspect the readiness of these cities to serve as ACS national meeting host sites.