



Green Mountain Local Section ACS

e-mail: GreenMntACS@yahoo.com

Green Mountain Section website:
<http://membership.acs.org/g/greenmt/index.html>

Officers 2004

Chair..... Beth Medeiros
Vice-Chair Michele Johnson
Chair-Elect **Vacant**
Secretary Beth Medeiros
Treasurer Beth Medeiros
Councilor..... Willem Leenstra
Alternate Councilor J.C. Van Houten

Committee Chairs

PR/Web Master Fiona Case
NCW Coord... Larry Marzec-Gerrior
UVHS Phone: 802-247-6833
Lgerrior@ottervalleyuhs.k12.vt.us

Announcement & Events:

December 9th Holiday Party:

At the Swift House Inn,
Middlebury from 6-8 pm see
details in this news letter

April 9 2005 - 42nd Annual VT
State Science and Mathematics Fair
– Norwich University

April 21, 2005 - Dr. Lauren Bartlett
Heine from GreenBlue of
Charlottesville, VA will talk on
“Green Chemistry: Challenges &
Opportunities for All Chemistry in
the Twenty-first Century”



ACS website: www.Chemistry.org

November 2004 Meeting

“Chemistry in Your Bathroom – Computer modeling of nanostructured fluids: liquid soaps and detergents”

Date: Thursday November 18, 2004
Time: 5:30 pm
Location: 212 Dewey Hall; UVM Campus

Dinner after talk: 7:00 pm at Roque's Restaurante Mexicano &
Cantina, 3 Main Street, Suite 100, CornerStone
Building, Burlington, VT RSVP Beth Medeiros via
phone 802-770-7238 or e-mail
(beth.medeiros@omya.com) **by Nov. 17th**

ABSTRACT

Many soft or fluid consumer products, such as foods, paint, detergents, personal and home care products, and cosmetics, contain nanometer (10^{-9} m) to micron (10^{-6} m) scale structures formed by the spontaneous self-assembly of natural or synthetic surfactants, or block copolymers. In many cases complex mixtures of different surfactants and polymers are required to create the desired structure and performance.

Members of the broadly defined nanotechnology community are also increasingly interested in self-assembly and nanostructured fluids, which have the potential to provide robust and inexpensive strategies for creating nanoscale materials. For example, IBM recently highlighted the potential for block-copolymer self-assembly to create nanometer size structures for electronics applications.

This presentation will start with an overview of surfactant and block copolymer self-assembly, describing the empirical rules that have been developed to aid the design of nanostructured fluids, and some of the experimental approaches to characterizing their structure. We will then focus on more recent developments in computational chemistry and simulation that have the potential to revolutionize the design of these commercially important materials. We will also learn what makes liquid hand soap so thick, shower gel so good at softening your skin, and dish-liquid so good at removing grease!

Directions to Talk: 212 Dewey Hall

Take the Burlington exit off I-89, heading west Stay on Williston Road (becoming Main Street) to the UVM Green Take a right on South Prospect Road (at the traffic light) At the intersection with Colchester Ave, go straight across. The first building on your right is Dewey Hall. There is a small parking lot behind the building, but parking is only by permit until 6:00 p.m. There is street parking nearby, however.

Biographical Sketch:

Dr. Fiona Case
Case Scientific, 125 Main Street, Essex Junction, VT 05453

Fiona@casescientific.com

<http://www.casescientific.com/Fiona.html>

Fiona's technical expertise is in polymer and surfactant science, and the industrial application of computational chemistry, molecular modeling and property prediction.

Her introduction to industrial polymer science was in the late 80's at Courtaulds Research in the UK where she worked as part of the team developing Tencel - a new, environmentally friendly, solvent spun cellulose fiber. She also investigated the effects of polyacrylonitrile microstructure on carbon fiber performance using early molecular and quantum mechanics modeling techniques. In 1991 she moved to California to join Biosym - a small startup molecular modeling company.

Fiona spent nine years at Biosym/MSI (now Accelrys). She carried out contract research and worked in marketing and technical sales support. In 1999 she was hired into a central research group at Colgate Palmolive. This presented new challenges, including materials structure and property prediction for toothpaste, detergent, hard surface care and personal care products, and packaging and fragrance technology.

In 2003 Fiona left Colgate Palmolive to move to Vermont with her husband, Martin Case, where she founded Case Scientific, offering consultancy and contract research. She has also embarked on a "second career" in scientific journalism.

In her spare time she organized a symposium on Mesoscale phenomena in Fluid Systems which was held during the ACS National Meeting in Boston, 2002. She co edited a book based on this symposium (ACS Symposium Series #861).

Fiona was the 2003 Chair of the ACS Princeton Local Section and is now Public Relations Chair and Webmaster for our Green Mountain Section.

Summary of Last Meeting:

“The Phosphorus Problem in Lake Champlain and Its Solutions”

by Eric Smeltzer an Environmental Scientist at the Vermont Dept. of Environmental Conservation in Waterbury, VT

The problem of phosphorus in the lake is that it promotes growth of algae and changes the color of the lake from blue to green. This affects tourism and recreational use of the lake, as well as clogging water filtration systems, and impairing the biological community because the algae produce toxins.

There is a tri-partisan agreement between Vermont, New York and Quebec to monitor and “control” phosphorus concentrations in the lake. Vermont is responsible for 66%, NY 24% and Quebec 10%.

Sources of Phosphorus:

Agriculture 55%
Urban 37%
Forests 8%

Phosphorus primarily gets into the lake through run off from streams. There has been a 75% reduction in phosphorus flow into the lake from waste water since 1991 which has been accomplished by engineering controls.

Farmers are being helped to reduce the agricultural source of P through better management of manure storage, crop management, and stabilization of stream banks.

The economic benefits of these P management is

- Clean water attracts tourism and business
- Improvement of farm efficiency
- Reduced property and infrastructure damage from stream flooding.
- Reduced town road maintenance costs
- Reduced municipal waste water operation costs



Members also enjoyed touring the ECHO museum exhibits before and after the talk; especially the exhibit on aging.



Call for Nominees for Green Mountain Section Councilor:

If you are interested in running for the position of Councilor please contact Beth Medeiros – Chair by November 19th. If necessary, an election involving the section membership will be conducted November 22 ending November 26th. Listed below are the job responsibilities:

Councilor (Three-year term)

Councilors are elected for three-year terms, unless serving the unexpired term of a preceding Councilor.

Critical Objective

Councilors represent the Green Mountain Local Section at both National Council Meetings of the American Chemical Society. The National Council is the deliberative assembly of the National ACS. Its duties include: nominating members of the office for ACS President-elect; electing Directors-at-Large, members of the Council Policy Committee (the executive committee of the National Council), the Committee on Committees, and the committee on Nominations and Elections; nominating members for the offices of District Directors; studying, recommending, and acting on all activities of direct and indirect interest to the members of ACS, including the setting of ACS annual dues; advising the ACS Board of Directors on matters concerning the management of the Society; influencing decisions for which the ACS Board has responsibility; chartering Local Sections and Divisions; and amending the Constitution and Bylaws of the Society.

Key Duties

1. Keeps informed on issues at the ACS national level with particular attention to those, which have implications for the Green Mountain Section.
2. Attends, participates, and votes at meetings of the ACS National Council, which are generally held at ACS National meetings, as often as possible.
3. Notifies the Chair and Secretary well in advance if a National Council meeting cannot be attended so that an Alternate Councilor may be certified by the Secretary to attend.
4. Reports to the Executive Committee on matters of interest that are considered or acted on at National Council meetings. Solicits the opinions of members of the Section on major issues prior to the Council.
5. Consults the Executive Committee for prior advice on items of interest to the Section. Solicits the opinions of members of the Section on major issues before the Councilor.
6. Attends Local District Councilor Caucus meetings.
7. Is willing to serve on Council Committees and dedicate considerable time and energy to fulfilling the obligation of such membership. Completes and returns the Committee Preference Form mailed by the ACS National Office in the spring.
8. Serves as required as an intermediary and exchange resource between the section and National offices of the ACS.
9. Communicates Society issues and Council decisions to the Section via oral reports and in writing, as needed. Obtains brochures and other publications that may be of interest to the Section.
10. Notifies the Executive Committee if travel expenses to a National ACS meeting are to be requested from the Section. Requests for reimbursement should be first agreed upon with all other councilors to assure adequate coverage for our Section and approval by the Executive Committee. Travel expenses up to two meetings per year may be requested. The National ACS office will reimburse a major percentage of the expenses and the Section underwrites the remainder.
11. Keeps an accurate record of expenses incurred at National ACS meetings, National Council meetings, and other activities carried out on behalf of the section.
12. Performs other duties as specified or requested by the Chair, the Executive Committee, and National offices of the ACS.
13. Serves as a member of the Long Range Planning Committee.
14. Serves as a member of the Executive Committee.

Preferred Qualifications

Candidate will have served as a local section Chair for at least one year.



Happy Holidays!



The Green Mountain Local Section will be hosting a holiday party on Thursday, December 9 at the Swift House Inn on 25 Stewart Lane in Middlebury, VT. Please join us from 6 – 8 PM for the festivities.

Free hors d'oeuvres will be served alongside a cash bar. All local section members are cordially invited to attend with one guest. This event is a wonderful opportunity to network and socialize with other local section members.

If you are interested in attending, please RSVP no later than December 2 to Beth Medeiros at (802)770-7238 or greenmntacs@yahoo.com.

Directions from Rutland: Take Route 7 North to Middlebury. Proceed through town. At the end of town, you will come to a traffic light with a Mobil gas station on your left. Turn right at the light onto Stewart Lane. Proceed halfway up Stewart Lane and park in the parking lot on your right. The restaurant is located in the main house, which is across Stewart Lane from the parking lot.

Directions from Burlington: Take Route 7 South to Middlebury. As you enter Middlebury, there is a traffic light with a Mobil gas station on your right. Turn left at the light onto Stewart Lane. Proceed halfway up Stewart Lane and park in the parking lot on your right. The restaurant is located in the main house, which is across Stewart Lane from the parking lot.

We look forward to celebrating the holidays with you!