



## Green Mountain Local Section of the American Chemical Society

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Green Mountain Section website:  
<http://greenmntacs.sites.acs.org/>

### Officers 2015

Chair..... Richard Milius  
Chair-Elect..... David Heroux  
Secretary..... Senthil Natesan  
Treasurer..... Beth Medeiros  
Councilor..... Willem Leenstra  
Alternate Councilor..... Jeffrey Byers

### Committee Chairs

PR/Web Master..... Senthil Natesan  
Awards..... Sandra Lynch  
Gov't Affairs..... Sarah Locknar  
Newsletter Editor... Willem Leenstra



### Upcoming Events

On April 28, 2015, at 5.30 PM,  
Dr. Benjamin Littenberg (UVM) will  
speak on "The Discovery of  
Insulin" at St. Michael's College.



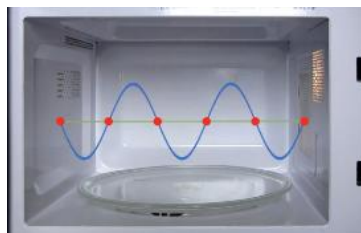
ACS website: [www.acs.org](http://www.acs.org)

# Green Mountain LS March 2015 Newsletter

## "Microwaves"

**Date:** Tuesday, March 17, 2015

**Time:** Talk at 5:30 PM -- Dinner at 7:30 PM



**Speaker:** Prof. Michael McGinnis  
Norwich University

[biography can be found on the next page]

**Title:** "Microwave Chemistry: Not Just for Your  
Kitchen Anymore"

[abstract can be found on the next page]

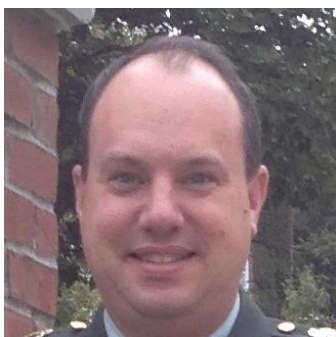
**Location:** Math-Science Complex, Room U125  
Norwich University  
Northfield, Vermont

Find directions to Norwich University on the internet. As you approach the University on Route 12, at the yellow blinking light, turn into Parking Lot A which is across from the University. If lot A is filled, there is parking adjacent to Kreitzberg Library, the large white structure next to the Math-Science Complex. The Math-Science building is directly across the street from that lot. Rooms are numbered sequentially, U125 is on the first floor.

**Dinner:** Sarducci's  
3 Main Street  
Montpelier, Vermont

If you wish to join us for dinner at 7:30 (after the talk), please RSVP Dick Millius at 802-485-2228 or via e-mail to [rmilius@norwich.edu](mailto:rmilius@norwich.edu). We would like an approximate headcount as soon as possible, but by the end of the business day, **Monday, March 16** at the latest. For directions, use [maps.google.com](http://maps.google.com).

## Biography for Dr. Michael McGinnis



*Michael McGinnis*

Michael McGinnis is Dean of the College of Science and Mathematics, and Professor of Chemistry at Norwich University. Dean McGinnis earned his ACS-certified B.S. degree in Chemistry from Elizabethtown College (PA) and Ph.D. in Organic Chemistry from the University of Tennessee. He completed a one-year teaching-research Postdoctoral Fellowship based at the University of Tennessee; also working at Oak Ridge National Laboratory. He has won awards for his undergraduate teaching and advising, and he has been active in Science Bowl, Science Fair and the Science Olympiad. McGinnis has served at the local, regional and national level for the American Chemical Society (ACS), previously as co-chair of the Regional Meetings Committee for the Division of Chemical Education and currently national chair for ACS's Chemists Celebrate Earth Day (CCED) celebrations. McGinnis's research, much of it involving undergraduates, presently focuses on microwave-assisted organic reactions.

### Abstract of This Month's Talk

The microwave oven was discovered in the 1940s, but not popularized until the 1960s with the introduction of a counter-top model. Chemists in the 1980s first reported that microwaves could be used to catalyze reactions. Around 2000, industrial strength microwaves were introduced and 2002 saw the first wave (only 20) of significant publications with laboratory-grade, industrial microwaves. A dozen years later, today thousands of peer-reviewed microwave articles are published each year. This presentation will examine at the young history of the microwave, current developments of microwave assisted organic reactions (MAOS) and gaze into the future of microwave chemistry.

### Annual Elections of Officers

On Saturday, January 17, the Executive Committee and a number of members met at NECI in Montpelier to formally elect the slate of unopposed officers, which is listed on the masthead.

## Introducing Our New Chair-Elect



*David Heroux*

Dr. David Heroux is Associate Professor of Chemistry at Saint Michael's College in Colchester. Originally from Rhode Island, he received his B.A. in Chemistry from Manhattanville College in Purchase, NY and a Ph.D. in Inorganic Chemistry from Kansas State University under the guidance of Kenneth Klabunde. He was Assistant, then Associate Professor at the University of Maine at Farmington. After a sabbatical stint at the Colorado School of Mines, David moved to St. Mike's in the fall of 2013. He has also held appointments as visiting researcher and visiting professor at the Borekov Institute of Catalysis in Novosibirsk, Russia. His primary research interest is nanotechnology with a focus on catalysis and environmental applications of metal oxides.

He has served in a number volunteer roles for the ACS including two ACS Exams Institute exam writing committees, the membership committee of the Division of Chemical Education (DivCHED), and as the National Chemistry Week coordinator for the Kansas State, the Maine, and the Green Mountain Local Sections. Recently, he was appointed to the DivCHED's Biennial Conference Committee. Additionally, he has organized and presided over several nanotechnology-based symposia at national ACS meetings, and serves as the faculty advisor for the Saint Michael's College Student Affiliates Chapter.

Recently, David attended the ACS Leadership Institute in Dallas where he picked up valuable information that will help him lead our section in the not too distant future.



*David and fellow Chairs-Elect at the ACS Leadership Institute*

## GMLS Co-Sponsors a Joint Meeting with the Northeast Section at Dartmouth College

Our Chair, Dick Milius, was instrumental in organizing a joint meeting that was held October 23, 2014. The topic that evening centered on toxic metals in the US and world's food/water supplies. Featured speakers were Dr. Seth Frisbie of Norwich University and Dr. Brian Jackson of Dartmouth College.



*Prof. Seth Frisbie and environmental health researcher Bilqis Hoque of Bangladesh conduct field testing of arsenic in drinking water*

Frisbie led off with a presentation titled "Discovering the Largest Mass Poisoning in History: Arsenic, Manganese, Uranium, and Other Toxic Metals in the Drinking Water of India, Bangladesh, Myanmar, and Ultimately the World." Since 1997, he has been working on drinking water and public health in developing countries.



*Research Associate Professor of Earth Sciences, Brian Jackson is the Director of the Trace Metal Analysis Core Facility at Dartmouth College*

Brian Jackson followed Frisbie on the podium and talked about the extensive Dartmouth research on arsenic. He cited the presence of toxic arsenic in New Hampshire's drinking water, noting that arsenic, as in Bangladesh, is also geologically derived in this area and extends into Maine, as well.

It was the opinion of the dozens of attendees that this first meeting of the New Hampshire Area, and joint venture between the two neighboring ACS sections was a rousing success. Plans are in the works to continue the momentum later this year.

## Vermont Science and Math Fair Needs Judges

On Saturday, March 28, Norwich University will once again host our state's Science and Math Fair. The organizers have asked us for help in finding additional judges as this year's number of entries appears to be especially high. The commitment would be for just that Saturday morning for about four hours, starting at 8:30, and finishing with a complimentary lunch. The need for member judges is especially critical because the Green Mountain Local Section will award Merck Indexes and cash prizes for the best chemistry entries at various levels. Also, a \$10,000 per-year Next Generation Scholarship to Green Mountain College is offered to the winners.



This is an exciting and rewarding opportunity to talk to aspiring middle and high school scientists, and their teachers as they showcase the results of their scientific inquiry. If you are interested in participating, or if you have questions, send an email to [rmilius@norwich.edu](mailto:rmilius@norwich.edu) with "judge" as the subject line.

## National Chemistry Week Report



Our Local Section, under the guidance of David Heroux, organized an outreach event by doing some hands-on chemical demonstrations at the Burlington Town Center on October 25. We were given the center court of the mall to set up tables at which various activities were conducted. A number of the activities were centered on this year's theme of "The Sweet Side of Chemistry". As well, a number of tried and true experiments such as slime-making were enjoyed by the visitors. The day was punctuated with several crowd-pleasing chemical magic shows.





*Saint Michael's College students Ben Peters and Jordan Roach show kids the "sweet side of chemistry"*

This year, David Heroux of Saint Michael's College stepped up to the plate and brought with him a contingent of about 10 undergraduate chemistry students, representing St. Mike's Student Affiliates Chapter. As the photos show, their enthusiasm put chemistry in a good light. The GMLS appreciates Dave's planning and execution of a successful event, and congratulate him for his success as the advisor of the Saint Michael's College ACS student chapter.



*Kaylee Jackson, Jordan Roach, and Chris Ricciardi help kids make slime as part of the NCW event at the Burlington Mall*

## **Molecular Modeling Workshop**

Drs. Senthil Natesan and Stefan Balaz were awarded an American Chemical Society's (ACS) Local Section Innovative Project Grant (IPG) for their proposal, entitled "Molecular Modeling Summer Workshop". This 2-day workshop (held on July 12-13, 2014) has offered a unique opportunity for twelve undergraduate/graduate students and research faculty from the universities and colleges affiliated with the ACS-Green Mountain Local Section to learn basic molecular modeling techniques.

The participants used state-of-the-art, industry-standard software applications as they gained hands-on computational chemistry experience, and performed cheminformatics tasks to extend their research skills. High-performance work stations under Linux operating system environment were provided by the Albany College of Pharmacy and Health Sciences, which co-sponsored the event.



*Senthil Natesan (far right) and participants take a moment from the workshop to record their presence at this historic "first" event.*

At the conclusion, students took home with them a binder containing all workshop handouts, and slides covering theoretical background. As well, they were given an 8GB flash drive with electronic copies of the materials, as well as their collective activities/exercises used during the workshop.



*Students from area colleges at their work stations*

The participating students and faculty expressed that the workshop was very useful. A few quotes from their feedback:

"I learned a lot about using the software and getting hands-on experience in performing simulations."

"I thought this was a very good workshop and I could not have imagined anything better, other than extending the time we had. For 2 days however I feel this was very informative."

"The binder with the instruction manuals and slideshow were very useful and will be a good resource in the future."

This event was a "first" for the Green Mountain Local Section. The presence of four major colleges in the area provides an eager pool of students

The GMLS is indebted to Dr. Natesan, and we hope that its success may be a catalyst for future such events.