

The Blue Ridge Chemist

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National Chemistry Week



Ferrum College Hosts October Meeting

<http://www.acs-vbrs.org>

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

650th SECTION MEETING

Hosted by Ferrum College

Thursday, October 25, 2012

PROGRAM:

5:30-6:30 Social Time, Virginia Room, Franklin Hall

6:30-7:30 Dinner, Virginia Room, Franklin Hall

7:30-8:30 Presentation, Room 106, Garber Hall

The social time and dinner will take place in the Virginia Room in Franklin Hall. The talk will take place in room 106 in Garber Hall. The evening speaker is Dr. Laura Grochowski from Ferrum College. She will be presenting a talk on "Accessing the Chemical Potential of the Metagenome in the Search for New Medicines".

The dinner consists of confetti salad (colorful greens, tomatoes, purple onions, cucumbers and Ferrum house dressing); slow roasted pork loin with onion compote; red wine beef pot roast with shitake mushrooms & roasted carrots; fennel Yukon gold mashed potatoes; Ferrum garlic green beans; maple leaf bread and chief's choice assorted dessert and beverage service (hot water with tea bags). Vegetarian meals will be made upon request. Cost for the meal is \$14.00, with students and retired ACS members being half price.

Reservation for the dinner should be made by Thursday, October 18, **SEVEN DAYS** before the meeting by calling Maria Puccio 540-365-4238, or e-mail to mpuccio@ferrum.edu, or regular mail to Dr. Maria Puccio, Garber Hall 309, 80 Wiley Drive, Ferrum, VA 24088.

Laura Grochowski Ferrum College

Laura Grochowski received a BS in Biology with a minor in Chemistry from Delaware Valley College in 1997. She studied antibiotic and nonribosomal peptide biosynthesis with Mark Zabriskie at Oregon State University where she obtained a Ph.D. in Medicinal Chemistry in 2004.



Laura then joined Bob White's lab in the Department of Biochemistry at Virginia Tech as a postdoctoral associate. While at Virginia Tech her work focused on the uncanonical biochemistry and coenzyme biosynthesis of methanogenic archaea. Her work has been published in a variety of journals including *Biochemistry*, *ACS Chemical Biology*, and the *Journal of Biological Chemistry*. Laura joined the faculty at Ferrum College in 2011 and is currently developing undergraduate research programs in areas of both natural products and methanogenesis.

Accessing the Chemical Potential of the Metagenome in the search for New Medicines

Despite the rise in infectious disease, development of multidrug resistant bacteria, and the need to develop new therapies for diseases such as cancer and hypertension, the rate of new drug discovery is

decreasing. Over the past few decades the number of new biologically active compounds has declined and only two new chemical classes of antibiotics have entered clinical trials. These trends punctuate the need to develop new methodologies and techniques to improve the rate of drug discovery and development, especially in regards to antibiotics.

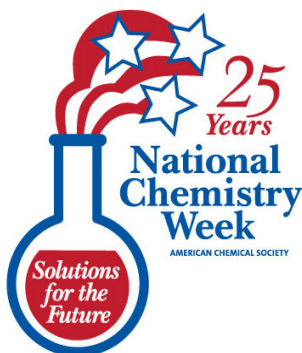
Historically, soil microorganisms have been the largest producers of antibiotics. Actinomycetes, in particular have been an abundant source of bioactive compounds and produce two thirds of known microbial antibiotics. In recent years, however, the rate of new antibiotic discovery from soil bacteria has diminished, and a 99% rediscovery rate for actinomycete antibiotics has been observed. This decrease in antibiotic discovery is due in part to the inability to culture 99% of soil microbes through current techniques. With the decreased rate of drug discovery from soil microbes, attention has turned to new, diverse environments in the search for drug leads. Unfortunately, drug development from many of the new sources of bioactive compounds comes with its own challenges. One of these challenges is the difficulty in producing adequate quantities of the desired compound.

There is a growing effort to gain access to the chemical and biological diversity of these unculturable organisms through the cloning of specific genes from the metagenome and the subsequent harnessing of the biochemical machinery. Although the cloning of biosynthetic gene clusters has traditionally been motivated by an exciting activity or structural feature of a natural product, the development of molecular genetic approaches to natural product chemistry may also allow for the discovery of new natural products that may not have otherwise been detected.

National Chemistry Week Nanotechnology: The Smallest BIG Idea in Science!

It's time to get excited and get involved with National Chemistry Week (NCW), October 21-27, 2012! NCW is the annual event that unites ACS Local Sections, businesses, schools, and individuals in communicating to their communities the importance of chemistry in everyday life.

NCW encourages chemists and chemistry enthusiasts to build awareness of chemistry at the local level. Local Sections, businesses, schools, and individuals are invited to organize or participate in events in their communities with a common goal: To promote the value of chemistry in everyday life. This year marks the 25th anniversary of the NCW program and we are excited to partner with the Nanoscale Informal Science Education Network (NISE Net). Read more about this partnership at http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=1033&content_id=CNBP_030445&use_sec=true&sec_url_var=region1&__uuid=53a6ef9b-b720-4574-89a9-da278cba1971.



National Chemistry Week in the Virginia Blue Ridge Section

The Virginia Blue Ridge section will be hosting two competitions for NCW: a K-12 Illustrated Poetry Contest and an undergraduate SACS activity contest.

The K-12 Illustrated Poetry Contest is focused on this year's NCW theme: "Nanotechnology: The Smallest BIG Idea in Science!" Participants are encouraged to illustrate concepts related to the nanotechnology theme as they relate to the environment, energy, materials, and health. Please send your entries to Kim Lane at Reed Hall 357, P.O. Box 6949, Radford University, Radford, VA 24142, or drop them at her office. All entries must follow the rules laid out on the ACS website (including an entry form). The deadline for receipt of entries is 5:00PM, Monday, October 22.

All local Student Affiliates of the ACS are invited to share their NCW activities. Participating SACS clubs should record their NCW activities and submit a poster (as a Powerpoint slide) summarizing their events. The winning SACS club will be awarded \$50. All entries should be submitted electronically to Kim Lane (ktlane@radford.edu) by November 8.



Directions to Franklin Hall, Ferrum College

From I-81 take I-581 South which turns into Route 220 South. Stay on Route 220 through Boones Mill to Rocky Mount. Take the second Rocky Mount exit to Route 40 West. Ferrum is 10 miles beyond Rocky Mount on Route 40 West. Pass Ferrum Mountain Road (Route 602) on your right, then take the next right into the college's main entrance. You will pass Garber Hall (with the greenhouse) on the right, then Stanley Library and Schoolfield Hall. The next building on the right is Franklin Hall, and parking is available below Franklin Hall across from the Fitness Center. The Blue Ridge Mountain Room is located on the upper level of Franklin Hall.

Map of Ferrum College



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Return Service Requested

The November meeting will be Wednesday, November 28, at Lynchburg College. The speaker will be Henry Schreiber, VMI, talking about his work on the chemical development of unique colorations for hydrangea (and other flowers). The contact person is Bill Lokar.