The Blue Ridge Chemist

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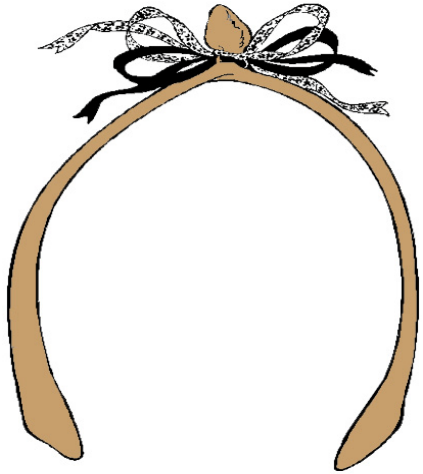


Wishing You a Happy Thanksgiving

Lynchburg College Hosts November Meeting

http:/www.acs-vbrs.org

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

651st SECTION MEETING
Hosted by Lynchburg College
Wednesday, November 28, 2012

PROGRAM:

6:00-6:30	Social Time, Burton East Room
6:30-7:30	Dinner, Burton East Room
7:30-8:30	Talk, Burton East Room

The social time, dinner, and talk will take place in the Burton East Room at Lynchburg College. The evening's speaker is Henry Schreiber who will give a talk entitled "Producing Yellow Hydrangeas and Blue Roses by Chemical Manipulation".

The buffet dinner will consist of salad, fresh asparagus, roasted red potatoes, pan seared Parmesan-crusted chicken breast with rose wine, and assorted deserts. Cost for the dinner is $14.00, with students and retired ACS members being half price.

Reservations for the dinner must be made by WEDNESDAY, NOVEMBER 21, SEVEN DAYS before the meeting, by phoning William Lokar at (434) 544-8631, or by email to lokar_w@lynchburg.edu, or by mail to William Lokar, School of Sciences, Lynchburg College, Lynchburg, VA 24501.

Dr. Henry Schreiber
Virginia Military Institute

Henry Schreiber received a BS in Chemistry from Lebanon Valley College in 1970. He then studied chromium geochemistry of lunar and terrestrial glasses at NASA Johnson Space Center and the University of Wisconsin - Madison, where he obtained a PhD in Physical Chemistry in 1976. For the past 37 years, Henry has been at the Department of Chemistry of the Virginia Military Institute, where he is currently the Beverly M. Read '45 Institute Professor in the Arts and Sciences. His research focus at VMI had been on oxidation-reduction chemistry in silicate glasses, first with applications to geochemistry, then to nuclear waste immobilization, and finally to commercial glass manufacturing. For the past ten years, he has been studying the use of metallo-anthocyanins to generate novel colors in flowers. He has more than 125 publications, about 75% of which has been with at least one student coauthor, and has obtained external funding of greater than $1.9M throughout his career. He was also the general chemistry editor for Chemical Education Resources, a publisher of laboratory modules. Selected honors include Fellow Status in the American Ceramic Society and the State Council of Higher Education in Virginia Outstanding Faculty Award.

Producing Yellow Hydrangeas and Blue Roses by Chemical Manipulation

The blooms of many hydrangea cultivars can be red, purple, or blue, depending on the soil pH. The "default" color of the blooms in neutral to basic soils is red and is attributed to the delphinidin-3-glucoside pigment. On the other hand, aluminum ions become mobile in acidic soils and are assimilated into the hydrangea blooms where they form a blue complex with the delphinidin-3-glucoside. Purples and lavenders have varying percentages of these two pigment forms. Other hydrangeas lack the pigment and have white blooms.

Bloom colors such as yellow and orange have remained elusive to produce in hydrangea blooms, and would be expected to have consumer demand. Studies have shown that molybdate, in addition to aluminum, ions also form blue complexes with delphinidin-based pigments in model solvents. However, cut stems of red hydrangea blooms, when placed in molybdate-containing solutions, displayed little if any bluing, but instead a yellowing; and cut stems of white blooms showed distinct yellowing whose intensity was proportional to the molybdate concentration. Analogous to the chemical manipulation (aluminum ions, pH) of the soil to change hydrangea blooms from red to blue or vice versa; it may now be possible to change hydrangea blooms from white to yellow through molybdate additions in the soil or through sprays.

Equally elusive as yellow and orange blooms in the hydrangeas has been the production of a blue rose. But, instead of using roses as a starting point, our strategy has been to use the lisianthus, a cut flower of rapidly increasing popularity, which has a rose-like bloom. Unfortunately, colors of lisianthus blooms only include white, red, and purple among others, but no true blue. The principal pigment in

its purple bloom is delphinidin-based, much like that in the hydrangea bloom. In this floral system, molybdate additions through the cut stem or sprays produce blue (and not yellow) blooms, while aluminum ions have no effect on the coloration. Thus, we are currently chemically manipulating lisianthus blooms to generate blooms that look like blue roses, without actually being blue roses.

Ballot, Blue Ridge Section, ACS, for 2013

The Nominating Committee has prepared the following slate of nominees for the election at the November meeting. All have agreed to serve if elected. Other nominees will be accepted from the floor at that meeting. If you would like to nominate someone, please check with that person about his or her willingness to serve.

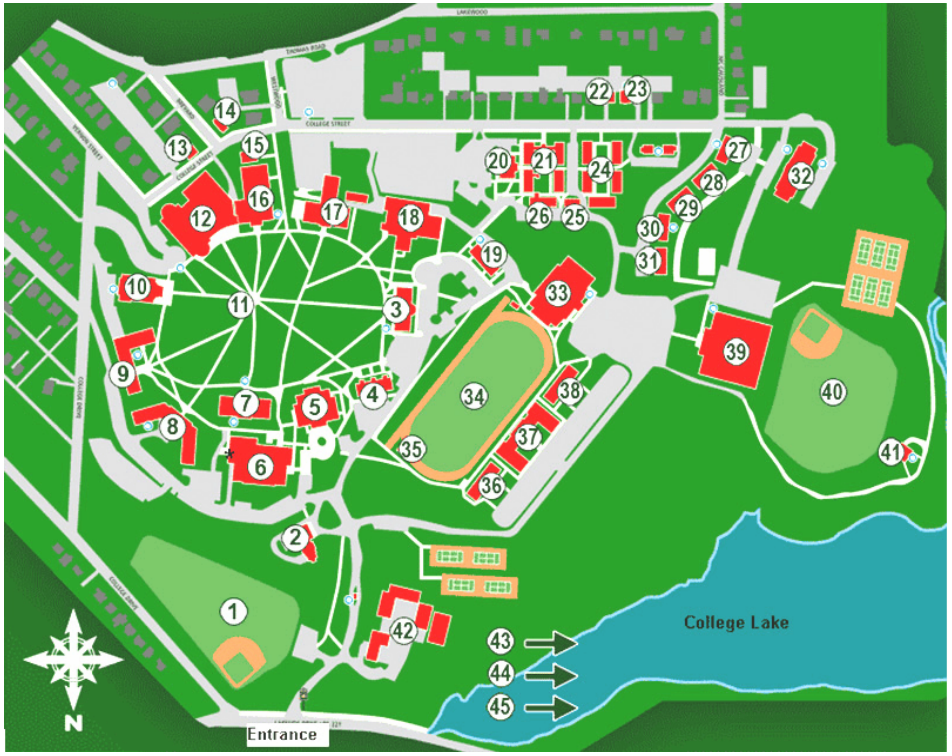
Chair	_____	Ben Huddle, Roanoke College, Retired
	_____	_____
Chair-elect	_____	Maria Puccio, Ferrum College
	_____	_____
Secretary	_____	Tim Fuhrer, Radford University
	_____	_____
Treasurer	_____	Chris Monceaux, Radford University
	_____	_____
Recorder	_____	Gary Hollis, Roanoke College
	_____	_____
Newsletter Editor	_____	Nancy Richardson, Liberty University
	_____	_____
Councilor	_____	Ben Huddle, Roanoke College, Retired
	_____	_____
Alternate-councilor	_____	Gwen Sibert, Roanoke Valley Governor's School, Retired
	_____	_____

Bring your ballot to the November meeting, or mail it to Kim Lane, Department of Chemistry, Radford University, Radford, VA 24142.

Directions for Lynchburg College

From Roanoke, follow Route 460 East and exit off Route 460 at Candlers Mountain Road. Follow signs to Route 501 North (River Ridge Mall will be on your left, and Wachovia Bank will be on your right). Take the right exit ramp to 501 North. Follow 501 North about 4 miles. At the first intersection (marked by a traffic light and Honda Dealer on the left) turn right onto 221 North (Lakeside Drive) and proceed 2 miles. The campus entrance will be on your right immediately past College Lake. The Meeting will be in Building #6 (Burton Student Center). Enter on the left side.

Map of Lynchburg College



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Vernon Miller, Editor
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Return Service Requested

The January meeting will be at Hollins University. Details will be in the next Blue Ridge Chemist.