

The Blue Ridge Chemist

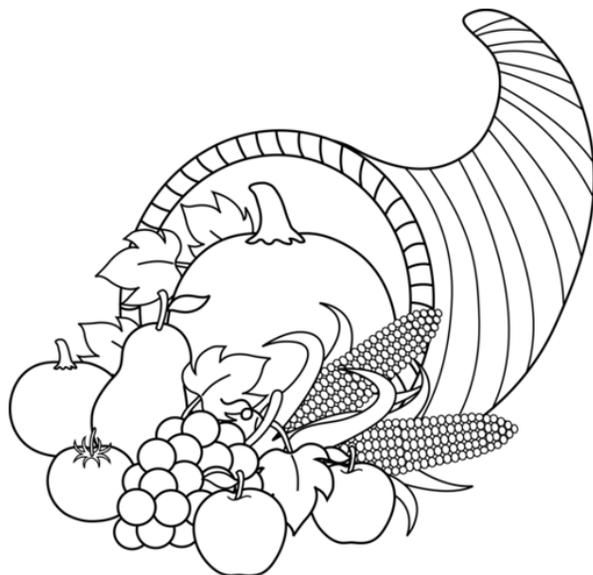
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Roanoke College Hosts November Meeting

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

675th SECTION MEETING Hosted by Roanoke College

Monday, November 30, 2015

PROGRAM:

- | | | |
|-------|-------------|---|
| 5-6pm | Social Hour | Pickle Lounge in the Colket Center |
| 6-7pm | Dinner | Go through the line in the Commons--then
bring food to Pickle Lounge |
| 7-8pm | Talk | Massengill Auditorium |

The dinner will take place in the Pickle Lounge of the Colket Center at Roanoke College. The talk will be in Massengill Auditorium. The speaker will be Dr. Chip Frazier, the T.M. Brooks Professor of Sustainable Biomaterials at Virginia Tech and the Director of the Wood-Based Composites Center, a National Science Foundation Industry/University Cooperative Research Center. He will be talking on "Biogenic formaldehyde, synthetic formaldehyde, and concerns over indoor air quality." For dinner we will be going through the cafeteria line bringing trays back to the Pickle Lounge. The usual menu includes two entrees, a salad bar, various sides and other items, with desserts and ice cream. Cost for the dinner will be \$10.00 for everyone.

So that we can set the room up appropriately, please reserve a place for the dinner by Friday, Nov. 27, (3 DAYS BEFORE THE MEETING) by contacting Debbie Duncan at 540-375-2441, by e-mail to duncan@roanoke.edu, or by mail to Debbie Duncan, Department of Chemistry, Roanoke College, Salem, VA 24153.

Dr. Chip Frazier

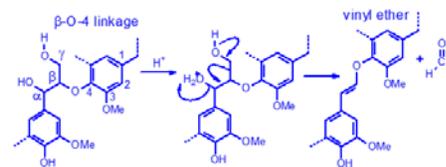
**T.M. Brooks Professor of Sustainable Biomaterials
at Virginia Tech and the Director of the Wood-
Based Composites Center**



Chip Frazier is the T.M. Brooks Professor of Sustainable Biomaterials at Virginia Tech, and the Director of the Wood-Based Composites Center, a National Science Foundation Industry/University Cooperative Research Center. Frazier teaches and researches the chemistry and polymer science of plant materials, principally lignocelluloses like wood and grass but also edible plant materials like wheat and soy. His core efforts revolve around adhesion in wood-based composites, analysis of synthetic and naturally-derived adhesives, and structure/property relationships in lignocellulose.

Biogenic formaldehyde, synthetic formaldehyde, and concerns over indoor air quality

The properties making formaldehyde useful are the same that may lead to serious health effects in humans. Formaldehyde is typically copolymerized into the adhesives used to manufacture nonstructural wood-based composites, materials often used to adorn and functionalize our home interiors. Targeting adhesive technologies, the federal government has regulated allowable formaldehyde emissions from these products for many years. The latest regulations limit emissions near to the levels produced naturally in trees. Since this biogenic formaldehyde is poorly documented and not well understood, the industry asked us to shed light on the mechanisms of its formation. Among the polymers in wood, lignin is the wild and wonderful polymer that allowed plants to move from the seas onto land, producing the enormous trees that we enjoy today. In trees, lignin appears to be the principal source of biogenic formaldehyde, and its formation is related to “self-healing” reactions that complicate efforts to produce liquid fuels from trees and grasses. Since lignin chemistry varies among trees, we have observed variations in formaldehyde levels and in the propensity to form it during heating. We will discuss these reactions and their implications for the forest products industry.



Left: Lignin reaction mechanism under study. Right: Undergrad George Lewis and grad student Guigui Wan, sampling a poplar tree on the Virginia Tech campus. No trees were killed during this research...on this day.

American Chemical Society's president comments on award of 2015 Nobel Prize in Chemistry



WASHINGTON, Oct. 7, 2015 — On behalf of the American Chemical Society (ACS), President Diane Grob Schmidt, Ph.D., congratulates today's winners of the Nobel Prize in Chemistry: Tomas Lindahl, M.D., Ph.D., of Francis Crick Institute and Clare Hall Laboratory (U.K.), Paul Modrich, Ph.D., of the Howard Hughes Medical Institute and Duke University School of Medicine and Aziz Sancar, M.D., Ph.D., of the University of North Carolina, Chapel Hill. The Royal Swedish Academy of Sciences awarded the prize "for having mapped, at a molecular level, how cells repair damaged DNA and safeguard the genetic information."

"The 2015 Nobel Prize in Chemistry recognizes the critical role chemistry plays in repairing and replicating human DNA, which is the blueprint of life itself," says Schmidt. "Understanding these processes will help us develop and design therapies to intervene when DNA errors are internally or externally caused. I extend my congratulations to all three of this year's winners, and I am so proud that Sancar is a 29-year member of ACS."

Elections, Blue Ridge Section, ACS, for 2016

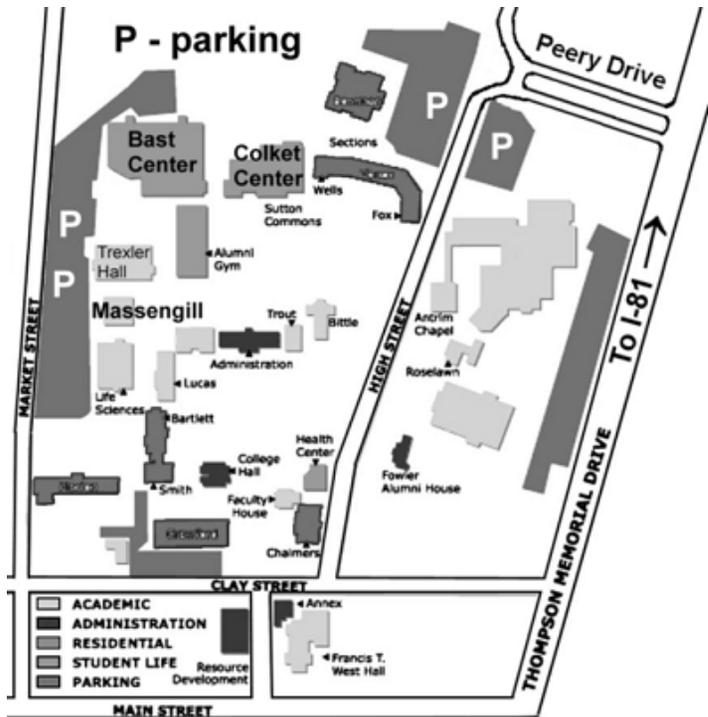
The Nominating Committee has prepared the following slate of nominees for the election at the November meeting. All have agreed to serve if elected. Other nominees will be accepted from the floor at that meeting. If you would like to nominate someone, please check with that person about his or her willingness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

Chair	_____	Kim Lane, Radford University
Chair-elect	_____	Paul Deck, Virginia Tech
Secretary	_____	OPEN
Treasurer	_____	Chris Monceaux, Radford University
Recorder	_____	Gary Hollis, Roanoke College
Newsletter Editor	_____	Nancy Richardson, Liberty University
Councilor	_____	Gary Hollis, Roanoke College
Alternate- Councilor	_____	Maria Puccio, Ferrum College

Bring your ballot to the November meeting, or mail it to Tim Fuhrer, Radford University, 801 East Main St., Radford, Virginia 24142

Directions to Roanoke College

From I-81 take exit 140 (Route 311) and go south into Salem, on Thompson Memorial Drive. Turn right onto Peery Drive or the next street, Clay Street, to enter the campus. You may park in the Market Street lot (near Massengill and Trexler). Please note that the large parking lot at Peery Drive across High Street, near Sections, is closed because of construction. For disability access routes, please contact Ben Huddle or Gary Hollis. The talk is in Massengill Auditorium, with the dinner in the Pickle Lounge of the Colket Center.



Map of Roanoke College

c/o Nancy Richardson , Editor
 VA Blue Ridge Section, American Chemical Soc.
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 Liberty University
 1971 University Blvd
 Lynchburg, VA 24515

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