

# The Blue Ridge Chemist

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**Lynchburg College Hosts the November Meeting**

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

## VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

**689<sup>th</sup> SECTION MEETING**

**Lynchburg College**

**Wednesday, November 29, 2017**

### **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 presentation will all take place in the Burton East Room at Lynchburg College. Dr. Greg Raner will speak on "Controlled Combustion in Oxygenase and Peroxidase enzymes: Exploring Nature's Blowtorches".

Three choices for dinner are

- 1) Caesar salad, Vegetarian Pasta Primavera, Peanut butter Pie
- 2) Seasonal Salad, Chargrilled chicken, garlic mashed potatoes, buttered broccoli, pecan pie
- 3) Seasonal Salad, Jerk rubbed pork tenderloin, Sautéed asparagus, Hot Fudge Cheesecake

*Please note your dinner choice when you RSVP.*

Cost for the dinner is \$15.00, with students and retired ACS members being half price.

Reservations for the dinner (noting your choice of the above) must be made by WEDNESDAY, NOVEMBER 22, SEVEN DAYS before the meeting, by contacting [crumpton.j@lynchburg.edu](mailto:crumpton.j@lynchburg.edu), or by mail to, Jason Crumpton, School of Sciences, Lynchburg College, Lynchburg, VA 24501.

*Dr. Greg Raner*  
*Professor of Chemistry, Liberty University*

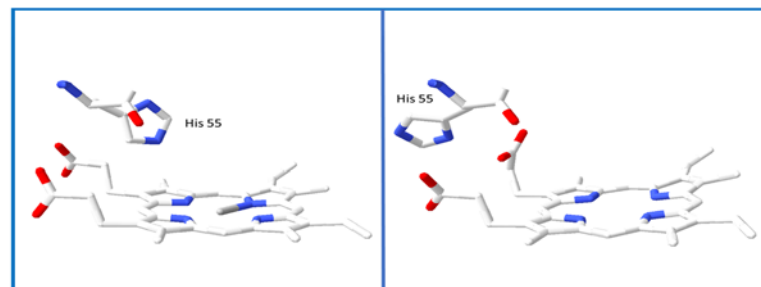


Dr. Greg Raner graduated with a B.S. in chemistry from LeMoyne College in Syracuse, NY and went on to earn an M.S. from Syracuse University. His Ph.D. in Biological Chemistry was from University of Utah with a thesis titled, “The Study of Spin-Coupled Binuclear Iron Proteins by Site-Directed Mutagenesis.” He was a Post-Doctoral Research Fellow at the University of Michigan, Medical School in Ann Arbor, MI. His research has included work in toxicology, biochemistry, and organic areas with funding from an NIH AREA award from The National Center for Complimentary and Alternative Medicine (NCCAM). He is a professor of chemistry at Liberty University where he teaches Organic chemistry and Biochemistry and works with the Center for Research and Scholarship to promote and grow undergraduate research. He and his wife Debbie live in Forest, VA and have two sons and a daughter.



## **Controlled Combustion in Oxygenase and Peroxidase enzymes: Exploring Nature’s Blowtorches**

The chemical properties of molecular oxygen are at the heart of molecular processes that support human life. Not unlike gasoline burning in a combustion engine, many of the reactions that occur within the cell convert hydrocarbon molecules into CO<sub>2</sub> and water, but whereas the energy released in the engine is converted to kinetic energy and heat, biological combustion reaction transform this energy to useful forms of chemical energy that are used to carry out functions that are vital to the cell. Oxygen serves a protective role in living cells as well. There are classes of enzymes that react directly with molecular oxygen creating very highly reactive complexes capable of destroying foreign chemicals that do not belong in the cell, as a form of protection against chemical assault. These enzymes can consume oxygen, or reduced forms of oxygen (hydrogen peroxide), and use the oxidizing power in a very controlled manner without flames or explosions. This talk will present mechanistic aspects of two families of enzymes called Cytochrome P450 monooxygenases and peroxidases, both of which catalyze oxidative reactions through related chemistries. The significance of these enzymes from the standpoint of biotechnology and human health will be discussed, and novel chemistries described in our lab will be noted.



**Figure 1.** Active site structure of the enzyme Dehaloperoxidase showing the rotation of a Histidine that may control how the enzyme carries out oxidative reactions.

## Elections, Blue Ridge Section, ACS, for 2017

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. You may also write in a candidate on the ballot.

Chair \_\_\_\_\_ Gary Hollis, Roanoke College  
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Chair-elect \_\_\_\_\_ Jason Crumpton, Lynchburg College  
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Secretary \_\_\_\_\_ Samrat Thapa, Lynchburg College  
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Treasurer \_\_\_\_\_ Steve Smith, Roanoke Valley Governor's School  
\_\_\_\_\_

Recorder \_\_\_\_\_ Gary Hollis, Roanoke College  
\_\_\_\_\_

Newsletter Editor \_\_\_\_\_ Paul Deck, Virginia Tech University  
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Councilor \_\_\_\_\_ Gary Hollis, Roanoke College  
\_\_\_\_\_

Alternate-Councilor \_\_\_\_\_ Maria Puccio, Ferrum College  
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Bring your ballot to the November meeting, or mail it to Paul Deck, Virginia Tech Dept of Chemistry, 800 W Campus Dr., 480 Davidson Hall Blacksburg VA 24061-0001

## In Memorandum:

### James Sidney Parsons



**Lexington, VA July 17, 2017.** Dr. James Sidney Parsons died July 17, 2017. Dr. James Sidney Parsons, 95, of Rapp's Mill, Lexington, Va. died on Monday, July 17, 2017 in his beloved Rapp Home surrounded by his son, John Edward Parsons, and daughter, Ruth Anne Parsons. He was born in 1922 in Roanoke, Va. to Lewis Edward Parsons and Beulah Rapp Parsons, and had one brother William Wade "Billy" Parsons. James graduated from Palmer Graded School where his love of chemistry began in Rockbridge County and was valedictorian of his high school class. He earned his B.S. in Chemistry from Washington & Lee University in 1943. He received the Mary Louise Reid Scholarship in Chemistry and was a member of the Chemistry Club in college holding the position of secretary. Dr. Parsons earned Masters and Ph.D degrees in Chemistry from the University of Virginia in 1950. He worked as a principal research chemist at the American Cynamid Company, Bound Brook, N.J., where he met the love of his life, Eleanor Hutchins. Parsons's research activities have included some of the newer electroanalytical techniques, particularly coulometric analysis. He was a deacon in New Jersey in the Bound Brook Presbyterian Church and a member of the Pluckemin Presbyterian Church. James was a cub scout leader, and John and he enjoyed the annual pinewood derbies. He played golf in Plattsburgh, N.Y. during his son's first round of golf along with Dawn Hutchins Meiklejohn. In his retirement he made water wheels and experimented with water power as a hobby using the spring fed gravity on his ancestral century farm. As a 74-year member of the American Chemical Society, he read his CE&M magazines voraciously to keep his mind sharp.

## Directions to Lynchburg College

From Roanoke

- Follow Route 460 East from Roanoke
- Exit (left) from 460 at the second Candler's Mountain Rd. exit
- Follow signs to Route 501 North (River Ridge Mall will be on your left, and Wells Fargo Bank will be on your right).
- Take the exit ramp to 501 North. Follow 501 North about 4 miles.
- At the first intersection (marked by a traffic light, 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 the Drysdale Student Center (circled). From the main entrance take the loop road on the left and enter on the side of the student center marked by the arrow.

## Map of Lynchburg College

