

# The Blue Ridge Chemist

Since 1947 the Official Local Section Publication of the Virginia Blue Ridge Section, American Chemical Society



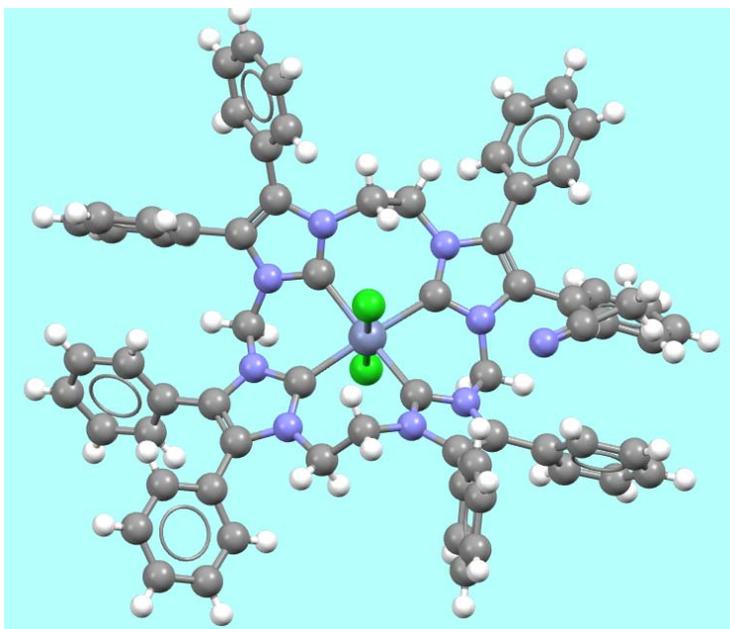
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Volume 73

February 25, 2020

No. 1

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University of Lynchburg Hosts the February Meeting

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

*The Blue Ridge Chemist* 2020, 73(1), 1-6.

## VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

### 704<sup>th</sup> SECTION MEETING

University of Lynchburg

Tuesday, February 25, 2020

#### PROGRAM:

6:00 to 7:00 PM Dinner

7:00 to 8:00 PM Lecture

The dinner will take place in Room 231 and the Lecture in Room 217, both in Schewel Hall at the University of Lynchburg.

Dinner will be a buffet featuring a house salad, a seasonal vegetable medley, brown rice, herb-marinated grilled chicken breast, house rolls and butter, and vanilla mousse cups. Cost of the dinner will be \$15, with students and retirees at half price.

An after-dinner lecture entitled “Two Tales of Understanding and Improving Selectivity in Catalysis” will be presented by Prof. Jesse Kern of Randolph College.

An RSVP is requested by Friday, February 21, **four days** before the meeting by sending email to Dr. Jason Crumpton ([crumpton.j@lynchburg.edu](mailto:crumpton.j@lynchburg.edu)) or calling him at (434) 544-8376.

Maps and directions are on the last page of this Newsletter.

**On the Cover:** Structure of a cationic organo-chromium complex that catalyzes alkene aziridination. Prof. Jesse Kern studies the reaction mechanism using quantum-computational methods.

## Keynote Speaker: Dr. Jesse L. Kern

Assistant Professor of Chemistry, Randolph College

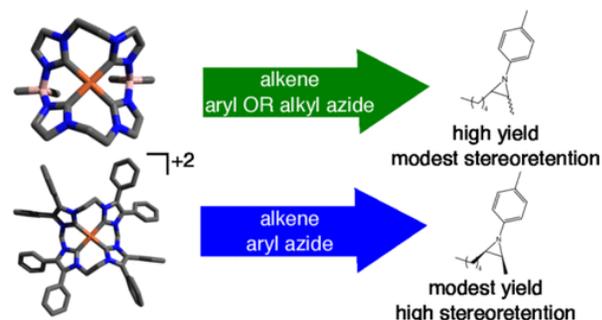


Jesse grew up in rural Kansas, about 40 miles south of Kansas City, KS. He attended Baker University in Baldwin City, KS, majoring in chemistry and mathematics. Jesse then moved to the University of Kansas, where he earned his PhD in chemistry, focusing on computational thermodynamics of heterogeneous interfaces. In 2015, Jesse accepted a postdoc position with Prof. Sharani Roy at the University of Tennessee where he collaborated on two homogeneous catalysis projects with UTK faculty members. Jesse is currently in his third year as an assistant professor at Randolph College in Lynchburg, VA.

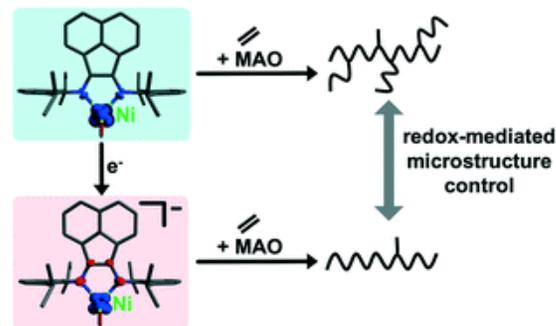


## Two Tales of Understanding and Improving Selectivity in Catalysis

**Summary:** While there are many experimental techniques available to probe catalytic reactions, computational techniques can provide additional insight into each mechanistic step. This lecture describes two collaborations from my postdoctoral research at the University of Tennessee. In the first example, an iron-based tetracarbene catalyst forms aziridines from organic azides and alkenes. A nagging problem in nitrene transfer is retaining the stereochemistry (*E* or *Z*) of the alkene substrate. Tuning the tetracarbene ligand with different electronic and steric properties improves stereoretention while sacrificing yield.



In the second example, a nickel diimine catalyst (with alumoxane “MAO” cocatalyst) polymerizes ethylene into highly branched polyethylene. Addition of a reducing agent modulates the level of branching in the polymer microstructure.



## April VBRS Poster Session – Entry Form / Checklist

As a part of the April 3, 2020 meeting at Radford University, the Virginia Blue Ridge Section of the American Chemical Society is sponsoring the twenty-eighth Annual Undergraduate/High School Poster Session. Note that poster boards will be provided.

If you have a student (students) who will be participating, please submit the following information by email to Dr. Christine Hermann (chermann@radford.edu) by **March 27, 2020**. **This is a firm deadline. No poster submissions will be accepted after this time.** All students and faculty will get email confirmation. If you did not get an email reply, then your submission was not received, and you cannot present.

Please “check the list” to make sure you have included **all** of the requested data. Also please obtain permission from **all** students to include their email addresses (FERPA compliance). Student emails are used **only** for students to receive important information from Chris Hermann regarding the poster session. We never publish or share student private data outside VBRS.

\_\_\_ Name of Project (Poster Title)

\_\_\_ Name(s) of Student(s)

\_\_\_ Name of Students' High School, College, or University

\_\_\_ Class of Student(s) (freshman, sophomore, junior, or senior)

\_\_\_ Student(s) email address(es)

\_\_\_ Faculty advisor's Name, Address, Phone Number, and Email

A 48" by 36" poster board with a tripod or a plain table will be provided. Please specify which type of display you need.

\_\_\_ poster board with tripod **OR** \_\_\_ table needed

## Directions to University of Lynchburg

From Roanoke, follow Route 460 East. Use the left lane to take the US-501 N/Candlers Mountain Road exit. Continue onto US-501 N/Candlers Mountain Rd. (Pass by Wells Fargo Bank on the right). Keep left to continue on Candlers Mountain Rd. Turn right onto Wards Rd. (Pass by Bank of America Financial Center on the left) Continue onto Fort Ave. Turn left onto Perrymont Ave. Turn right onto Sussex St. Turn left onto Vernon St. Destination will be on the left.

If using Google Maps: Search for “Elliot & Rosel Schewel Hall, College Street, Lynchburg, VA”



## Bylaws Update

ACS National rejected our revised Bylaws and nullified our vote thereupon. Please stay tuned for an opportunity to vote afresh -- this time for Bylaws that ACS National has approved.