

The Blue Ridge Chemist

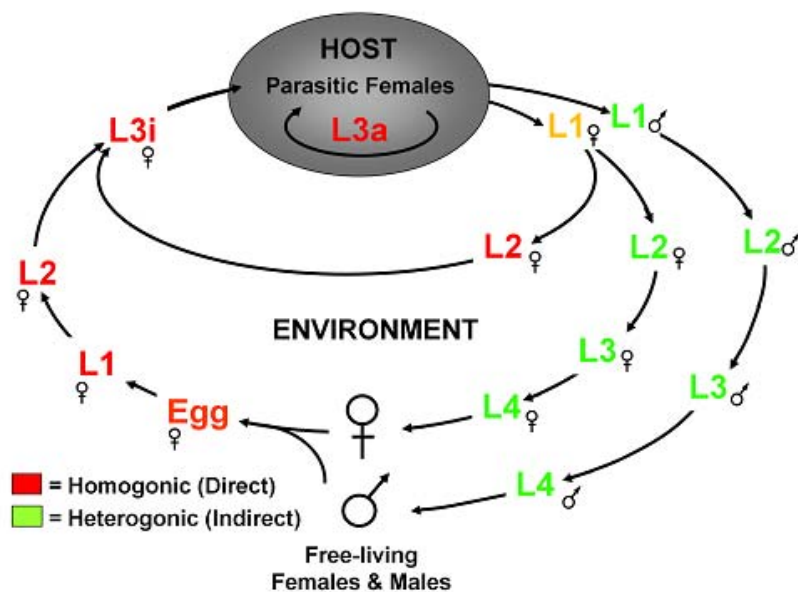
The Blue Ridge Chemist, since 1947 the
Official Local Section Publication of the
Virginia Blue Ridge Section, American Chemical Society



VOLUME LXVII

January 29, 2013

No. 1



Hollins University Hosts January Meeting

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

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

660th SECTION MEETING
Hollins University

Wednesday, January 29, 2013

PROGRAM:

- 5:30-6:00 Social time, Ballator Gallery, Moody Center
6:00-7:00 Dinner, Ballator Gallery, Moody Center
7:00-8:00 Talk, Ballator Gallery, Moody Center

The social time, dinner, and presentation will all take place in the Ballator Gallery in the Moody Center at Hollins University. The speaker will be Dr. Jonathan Stoltzfus, Visiting Assistant Professor of Biology, Hollins University.

The buffet will consist of chicken Parmesan with linguine noodles and sauce; meat lasagna; vegetable lasagna with carrots, squash, etc.; balsamic roasted vegetables containing squash, zucchini, onions, and other vegetables; tossed salad with ranch or raspberry vinaigrette; garlic bread; mixed berry cobbler; chocolate layer cake with chocolate icing; iced tea; coffee; and hot water with tea packets. The dinner is \$14, with students and retired members being half price.

Reservations for the dinner must be made by TUESDAY, January 22, SEVEN DAYS before the meeting, by phoning Daniel Derringer at (540) 362-7433, or by email to dderringer@hollins.edu, or by mail to Daniel Derringer, Hollins University Department of Chemistry, P.O. Box 9578, Roanoke, VA 24020.

**Dr. Jonathan Stoltzfus,
Visiting Assistant Professor
of Biology, Hollins University**



Jonathan Stoltzfus earned his B.S. in Biochemistry from Messiah College in Grantham, PA, in 2008. While an undergraduate, he conducted research in Macha, Zambia, in conjunction with the Johns Hopkins Bloomberg School of Public Health and was recognized as an Amgen Scholar for research conducted at the University of California San Francisco. Subsequently, he was awarded a post-baccalaureate fellowship at the National Institutes of Health in Bethesda, Maryland, where he examined the human immune response to hepatitis C virus infection.

He earned his Ph.D. from the University of Pennsylvania Perelman School of Medicine in July 2013, with a focus in Cell and Molecular Biology. His thesis work examined factors regulating the infective process of human parasitic nematodes using a variety of transgenic, pharmacological, and next-generation sequencing approaches.

Currently, Dr. Stoltzfus is a Visiting Assistant Professor of Biology at Hollins University in Roanoke, VA. He teaches an introductory-level human genetics course as well as upper-level courses in molecular genetics and molecular and cell biology. He continues to investigate the mechanisms regulating development of parasitic nematodes, using computational techniques and the free-living nematode *Caenorhabditis elegans* as a model. He is excited to have several undergraduate students working with him on these projects.

Human Parasitic Worms: Do Steroid-based Hormones Regulate the Infective Process?

Parasitic nematodes infect nearly one in four people worldwide, predominantly in impoverished tropical regions. Infection by these worms results in disfigurement and malnutrition, as well as retarded physical and cognitive development



for hundreds of millions. For many parasitic nematodes, the infectious form is a developmentally arrested third-stage larva (L3i). L3i of the human parasitic nematode *Strongyloides stercoralis*, which affects over 100 million people worldwide, are resistant to environmental stresses and can persist in the soil for several weeks. Upon encountering a host, L3i penetrate the skin and resume development; subsequently, they migrate to the intestine, where they mature into parasitic adults. However, the molecular mechanisms governing L3i developmental arrest and activation within a host are not well understood.

An analogous developmentally arrested third-stage larva—the dauer larva—forms during stressful environmental conditions in the free-living nematode *Caenorhabditis elegans*. *C. elegans* dauer larva development is regulated by the nuclear hormone receptor DAF-12 through a dafachronic acid steroid ligand ($\Delta 7$ -DA). An *S. stercoralis* DAF-12 homolog has been cloned, and it has been demonstrated that $\Delta 7$ -DA can regulate *S. stercoralis* L3i development; however, it remains unknown whether $\Delta 7$ -DA-like ligands are endogenously synthesized in the parasite. Since there is no DAF-12 homolog in mammals, this may be an excellent parasite-specific drug target.

This talk will provide an introduction to parasitic nematode biology, biosynthesis of steroid ligands for nuclear hormone receptors, and $\Delta 7$ -DA-mediated regulation of the infective process in *S. stercoralis*.

Congratulations to the 2014 VBRS Officers

Chair: Maria Puccio
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mpuccio@ferrum.edu

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tfuhrer@radford.edu

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Councilor: Gary Hollis
Roanoke College
hollis@roanoke.edu

Alternate councilor: Maria Puccio
Ferrum College
mpuccio@ferrum.edu

Changes in the Periodic Table!

The standard atomic weights of 15 elements have been revised based on the new assessment of their atomic masses by International Union of Pure and Applied Chemistry. The changes result from cooperative research supported by the U.S. Geological Survey, IUPAC, and others.

<http://www.usgs.gov/newsroom/article.asp?ID=2661>

The Virginia Blue Ridge Section of the American Chemical Society is sponsoring the twenty-first Annual Undergraduate/High School Poster Session as a part of the April 16, 2014 meeting at Radford University. Poster boards will be provided.

If you have a student or students, who will be participating, submit the following information by email to Chris Hermann (chermann@radford.edu) by April 9, 2014. **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.

Name of Project _____

Name(s) of Student(s): _____

Affiliation (name of high school, college, or university):

Class of Student(s) (freshman, sophomore, junior, senior): _____

Student(s) email address: _____

Advisor's Name, Address, Telephone Number, and email
address: _____

48" by 48" poster board with tripod on table or just table will be provided. Please specify what you need.

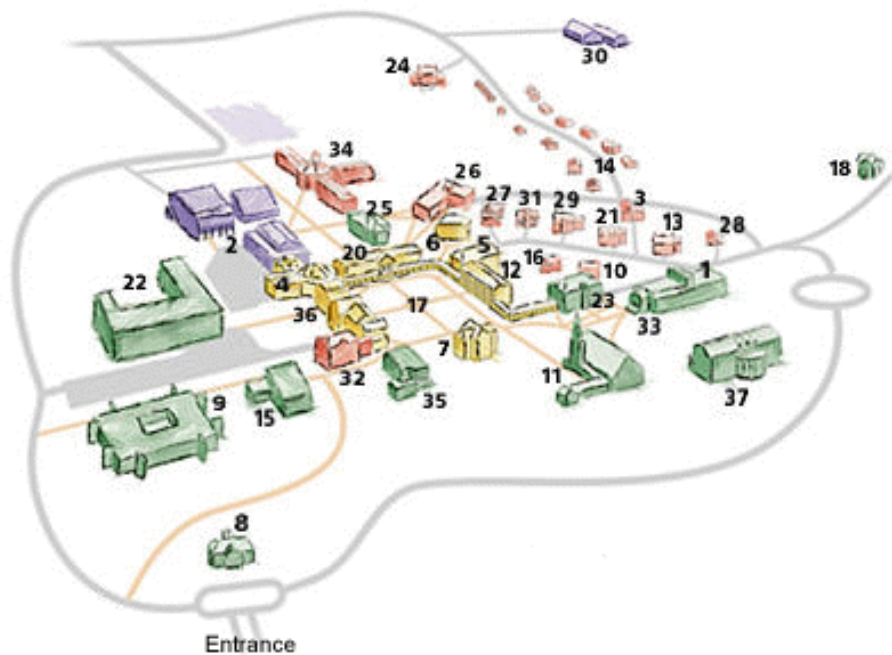
_____ poster board with tripod on table

_____ table needed

Directions to Hollins University

From I-81, take the Hollins exit (146) south to Peters Creek Road and turn left. The entrance to Hollins University is a little more than half a mile and is on the left. The meeting is in the Ballator Gallery of the Moody Center (Building #22)

Map of Hollins University



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c/o Nancy Richardson, Editor
for VA Blue Ridge Section, American Chemical Soc.
Department of Biology and Chemistry
Liberty University
1971 University Blvd
Lynchburg, VA 24515

Return Service Requested

The February meeting will be held at Roanoke College on February 17. The speaker will be Tom McClintock who will speak about DNA. Further details will be announced in the next issue of the Blue Ridge Chemist.