

The Blue Ridge Chemist

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

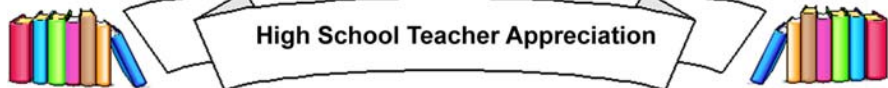


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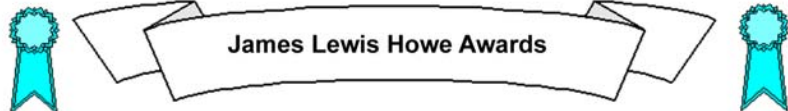
Radford University Hosts April Meeting



High School Teacher Appreciation



Outstanding High School Teacher



James Lewis Howe Awards



Undergraduate/High School Posters

<http://membership.acs.org/v/vbr>

VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

624th SECTION MEETING

Hosted by Radford University

Wednesday April 8, 2009

PROGRAM:

- 5:30-6:30 Social Hour/Poster Session, Muse
6:30-7:30 Dinner, Muse Banquet Hall
7:30- Meeting and Awards, Muse Banquet Hall

The social time, dinner, and talk will take place in Muse Banquet Hall, located in the basement of Muse Hall. The evening's speaker is Dr. Stephen Macko from the Department of Environmental Sciences, University of Virginia, who will be speaking on "Stable Isotope Forensic Chemistry and the Diets of Ancient Humans".

The buffet dinner will consist of fresh garden salad, marinated London broil with Bordelaise sauce, chicken Marsala, stir fried fresh vegetable medley, Duchess potatoes, continental peas, whole wheat and white rolls, fudge caramel delight, with iced tea, decaffeinated coffee, regular coffee. Special diets can be accommodated by mentioning it when the reservations are made.

Cost for the dinner is \$14.00, with students and retired ACS members being half price. Poster presenters receive a free meal. High school teachers are guests of the section with a complementary meal for themselves and a companion. Reservations for the dinner must be made by WEDNESDAY, APRIL 1, SEVEN DAYS before the meeting, by phoning Chris Hermann at 540-831-5413, or by email to chermann@radford.edu. Please note that everyone needs to request a parking pass from Dr. Hermann when a poster is submitted or a dinner reservation is made.

Dr. Stephen Macko

Department of Environmental Sciences, University of Virginia

Stephen A. Macko is a Professor of Isotope and Organic Geochemistry in the Department of Environmental Sciences at the University of Virginia. He received his Ph.D. from the University of Texas in Chemistry. His areas of interest include marine organic geochemistry, deep ocean communities, meteorites and the Origins of Life as well as K-12 education and outreach. He has authored over 250



refereed research papers and books; he was elected a Fellow of the Geochemical Society and of the European Association of Geochemistry in 2003 and is the Corresponding Education Editor for EOS. He received the All University Teaching Award at UVA and was a finalist for the State of Virginia Faculty of the Year award in 2007. He presently also holds the position of Program Officer for Geobiology and Low Temperature Geochemistry at the US National Science Foundation. Recent projects include studies on chemosynthesis at cold seep sites and hot vents using the Johnson Sea Link and Alvin submersibles for sample acquisition; interpretation of ancient human diet; tracking fires and aerosols from sub-Saharan Africa; establishing the geochemical conditions of the Earth prior to the origins of life, and pioneering the broadcast of live interactive classes between Africa and the USA.

At the University of Virginia, he teaches Introduction to Oceanography, Introduction to Geochemistry, Isotope Geochemistry, Organic Geochemistry and the Environmental Sciences Undergraduate Seminar. He has been a scientist or chief scientist on numerous oceanographic expeditions, including dives to depths of over 500 m in the submersible Johnson Sea Link. He was a research scientist on the high Arctic Canadian Ice Island during five different years. He has been featured on Discovery and National Geographic

television channel programs (The Ultimate Guide to Mummies, The Moche Murder Mystery, The Mummy Road Show) as well as a number of public and commercial radio and television interviews, including National Public Radio, about his research. His laboratory is featured in King Corn, a documentary on the influence of corn on the lives of North Americans, which opened at Independent theaters in New York and Washington in October, 2007 and appeared on PBS in April, 2008.

Stable Isotope Forensic Chemistry and the Diets of Ancient Humans

Fundamental to the understanding of human history is the ability to make interpretations based on artifacts and other remains which are used to gather information about an ancient population. Sequestered in the organic matrices of these remains can be information, for example, concerning incidence of disease, genetic defects and diet. Stable isotopes have long been used to interpret diet and trophic interactions in modern ecosystems. In this talk, it is suggested that the isotopic compositions of a commonly overlooked material, human hair, may represent an ideal tool to be used in addressing human diets of ancient civilizations.

Hair can be well-preserved and is amenable to isotopic analysis for distinguishing sources of nutrition. Based on this observation, we have isotopically characterized hair from both modern and ancient individuals. There is a wide diversity in carbon, nitrogen and sulfur isotope values owing, at least partially, to the levels of seafood, corn-fed beef and other grains in diet. Using these isotope tracers, new information regarding historical figures (George Washington, 1799 AD) to perhaps the most ancient of mummies, the Chinchorro of Chile (possibly more than 7000 BP) as well as the Moche of Peru (1500 BP) and the best preserved mummy, the Neolithic Ice Man of the Oetztaler Alps (5200 BP), have been deciphered. It appears that the often-overlooked hair in archaeological sites may represent a significant new approach for understanding ancient human communities and their environments.

Gwen Sibert:
VBRS Outstanding High School Teacher of the Year

Martha Gwen Sibert has been selected as the Outstanding High School Teacher for the Virginia Blue Ridge Section of the American Chemical Society for 2009. Her teaching experience has included teaching at schools in Texas, Alabama, Oklahoma, and Virginia. Ms. Sibert has been at the Roanoke Valley Governor's School since 1988 and her current teaching duties are AP chemistry, SOL chemistry, and environmental research.



Ms. Sibert has been active in the Virginia Blue Ridge Section of the American Chemical Society as Chair, Chair-Elect, Alternate Councilor, and webmaster. She is involved in the Chemical Education Division of the American Chemical Society, Sigma Xi, Iota Sigma Pi, NEA, VEA, REA, and VAST.

She has given many presentations at various BCCE and VAST meetings, ConfChem online conferences, a Green Chemistry and Engineering Conference, and national and regional ACS meetings. Her many awards include: VAST Outstanding Chemistry Teacher, Tandy Technology Teacher, Roanoke City Teacher of the Year, District IV Teacher of the Year by the State Department of Education, and twice the Outstanding High School Teacher Award given by VBRS. She has been a participant in NSF Summer Research Fellowships at the University of Rochester (NY), Virginia Tech and IBM-Almaden in San Jose, CA. She has been a National Board Certified teacher since 1999. Beginning in 2001, Ms. Sibert has been a faculty member at the Summer Governor's School for Science and Math in Lynchburg, VA where she teaches environmental chemistry..

In a recommendation letter submitted to the committee, the writer talks about the new and different ways that Ms. Sibert uses to teach chemistry. These include new labs, new demonstrations, and current references. Her teaching methods include the Smartboard, Powerpoint, online homework, laser discs, and other technology. Several of her students have gone to the International Science Fair. Her classes have celebrated various chemical events such as Mole Day and Mendeleev's birthday.

We congratulate Ms. Sibert as the Outstanding High School Teacher for the Virginia Blue Ridge Section for 2009.

Regional Science Fair Winners of the VBRS Award

Each year the Virginia Blue Ridge Section awards a \$50 US Savings Bond to the project selected as the best overall chemistry project at the regional science fairs in its boundaries. This year's winners are listed below.

Rebekah Webster (Pulaski County High School/Southwest Virginia Governor's School) was the winner at the Blue Highlands Regional Science Fair, with the project "Microwave Assisted Synthesis of Biodiesel". Her teacher sponsor was Tyson Brummer.

Zack Truman (Franklin County High School/Roanoke Valley Governor's School) was the winner at the Western Virginia Regional Science Fair, with the project "The Effect of Ultraviolet Radiation on Scytonemin in Cyanobacteria Part II". His teacher sponsor was John Kowalski.

National Chemistry Week Poster Winner

The Virginia Blue Ridge Section also sponsors a poster contest for students in during National Chemistry Week. This last November's winner (9-12 division) of this award (a \$50 US Savings Bond) was Brittany Fan of Blacksburg High School.

JAMES LEWIS HOWE AWARDEES

We are again pleased to be able to honor the outstanding students who are majoring in an area of chemistry in the Colleges and Universities in the Virginia Blue Ridge Local Section. These students are listed below.

Lauren E. McKinley
Virginia Military Institute

HOMETOWN: Clifton Park, NY

ANTICIPATED DEGREE: B.A. in Chemistry

AWARDS:
Third Class Herbert Ritchey Award

MEMBERSHIPS:
VMI Chapter of American Chemical Society; VMI Chapter Gamma Sigma Epsilon; The Honor Society of Phi Kappa Phi; Phi Eta Sigma National Scholastic Honor Society



Anne Harman
Concord University

HOMETOWN: Bluefield, WV

ANTICIPATED DEGREE: B.S. in Comprehensive Chemistry

AWARDS:
Concord University Students of Excellence Scholarship

HONORS:
Dean's List

MEMBERSHIPS:
ACS-SA (Secretary)



Melanie N. Craig
Hollins University

HOMETOWN: Holden, Maine

ANTICIPATED DEGREE: B.S. in Chemistry

AWARDS:
Hollins Trustee Scholarship, Norfolk Southern Corporation Scholarship, Judith Gregory Smith Award for Excellence in the Natural Sciences, Siemens Award for advanced Placement

HONORS:
High Honors

MEMBERSHIPS:
Phi Beta Kappa, Hollins Outdoor Program, Students Helping Achieve Rewarding Experiences (SHARE), Wilderness Adventure Club, Omicron Delta Kappa, National leadership Society Cojourners (Bible Study)



Aliyah Rebecca Barrett
Randolph College

HOMETOWN: Misawa, Japan

ANTICIPATED DEGREE: B.S. in Chemistry

AWARDS:
Elizabeth Alsobrook Jibb Academic Scholarship, Undergraduate Award in Analytical Chemistry, Trustee's Academic Scholarship

HONORS:
Deans List

MEMBERSHIPS:
Iota Sigma Pi



Rebecca Amy Adams

Sweet Briar College



HOMETOWN: Leesburg, VA

ANTICIPATED DEGREE: B.S. in Chemistry and Mathematics

AWARDS:

Science, Mathematics, and Research for Transformation Scholarship for Service Program, sponsored by the DOD

HONORS:

Dean's List

MEMBERSHIPS:

SAACS (Vice-President), Iota Sigma Pi, Alpha Lambda

David Sherrod Tatum

Virginia Tech – Biochemistry



HOMETOWN: Midlothian, VA

ANTICIPATED DEGREE: B.S. in Biochemistry & B.S. in Chemistry

AWARDS:

Ann and John Hess General Scholarship; National Starch Foundation General Scholarship; Alumni Presidential Scholarship; Edward Cooke Estate General Scholarship

HONORS:

Goldwater Scholar

MEMBERSHIPS:

Phi Beta Kappa Society, Golden Key International Honour Society, Eagle Scout, Boy Scouts of America

Laura A. Swatzyna

Roanoke College



HOMETOWN: Roanoke, VA

ANTICIPATED DEGREE: B.S. in Biochemistry

AWARDS:

Baughman Scholar, Junior Scholar

HONORS:

Dean's List, Biochemistry Honors

MEMBERSHIPS:

Phi Lambda Upsilon, Iota Sigma Pi, Alpha Chi, Mendel Honor Society

Kehvon Marie Clark

Washington and Lee



HOMETOWN: Boone, NC

ANTICIPATED DEGREE: B.S. in Biochemistry

AWARDS:

Christian A. Johnson Endeavor Foundation Undergraduate Fellowship; Washington and Lee University Scholar; Freshman Chemistry Achievement Award

HONORS:

Honor Roll

MEMBERSHIPS:

Virginia Alpha Chapter, Omicron Delta Kappa, ACS-SA, American Society for Biochemistry and Molecular Biology, Gamma of Virginia Chapter of Phi Beta Kappa, Virginia Beta Chapter of Alpha Epsilon Delta (president); Phi Eta Sigma

Jennifer J. Lambertson
Lynchburg College

HOMETOWN: Dover, DE

ANTICIPATED DEGREE: B.A. in Chemistry

HONORS:

Westover Honors Program, Lynchburg College,
Lisa A. Falls Research Fellowship at Harvard
University, Deans List

MEMBERSHIPS:

Beta Beta Beta, National Biological Sciences Honor Society,
Member of Phi Eta Sigma



Wesley D. Morris

Virginia Tech – Chemistry

HOMETOWN: Jeannette, PA

ANTICIPATED DEGREE: B.S. in Chemistry
(Honors)

AWARDS:

Chemistry Department Undergraduate Research
Award, Hypercube Scholar Award, Chemistry Department
Academic Excellence Award, CRC Freshman Chemistry
Achievement Award

HONORS:

Dean's List

MEMBERSHIPS:

Chemistry Club, ACS Student Affiliate



Erin Waddell
Radford University

HOMETOWN: Dublin, VA

ANTICIPATED DEGREE: B.S. in Chemistry
Minors: Biology and Interdisciplinary Forensic
Studies

AWARDS:

Georgia Anne Snyder-Falkinham Presidential
Scholarship; Warren and Judy Self Endowed Scholarship; C.E.
Richardson Benevolent Foundation Scholarship; Dr. Rogers F.
Lambert Endowed Scholarship in Chemistry; Dr. Edna Warweg
Speidel Memorial Scholarship in Chemistry

HONORS:

Nominated for Who's Who Among Students in American
Universities and Colleges; Nominated for Radford University's
Outstanding Student Award

MEMBERSHIPS:

Iota Sigma Pi; National Society of Collegiate Scholars; Dean's
Advisory Council for the College of Science and Technology;
Alpha Lambda Delta; Dean's List every semester at Radford
University; Honors Academy at Radford University; Leadership
Program at Radford University; SA-ACS (vice-president)



Gregory Keith James

Virginia Tech – Chemical Engineering

HOMETOWN: Chesapeake, VA

ANTICIPATED DEGREE: B.S. in Chemical
Engineering

AWARDS:

Engineering Dean's Scholar Award, University
Honors Housing Scholarship, Ralph H. Bogle
Jr. Scholarship for Chemical Engineering,



Donald M. Cox Scholarship for Chemical Engineering, Pamplin Leader Award, Floyd-Francis Scholarship, Virginia Tech Tidewater Alumni Association Scholarship; American Institute of Chemical Engineers Perry's Handbook Award

HONORS:

Dean's List with Distinction

MEMBERSHIPS:

Omega Chi Epsilon - Chemical Engineering National Honors Society

**Dr. James Lewis Howe
1859-1955**

James Lewis Howe was for many years Professor of Chemistry and Head of the Department at Washington and Lee University. As one of the most distinguished chemists in the Blue Ridge Section, we have chosen to name our annual awards to outstanding students in his memory.

Dr. Howe was born in Newburyport, Massachusetts in 1859; this is the same year in which Svante Arrhenius was born, and during Dr. Howe's professional career he was to know many of the famous early chemists, such as Liebig, Wohler, Bunsen, and many others. He attended Amherst College, where he pursued his favorite subjects of chemistry, German, and religion. He was selected to deliver the graduation address on the subject of "The Scientific Method and Religion".

He earned his M.S. and Ph.D. degrees at the University of Gottingen, and published his first scientific papers on the subject of aromatic carbon chemistry. He then began an intensive literature search of the platinum metals, beginning a bibliography for which he was to become world famous. He decided that the most interesting and least known metal of the group was ruthenium.

In 1883 he married Henrietta Leavenworth Marvine of Scranton, Pennsylvania. This marked the beginning of a marriage of 60 years duration. The Howes became the parents of two daughters and a son (who was also a chemist). After Mrs. Howe's death in 1944, one of his daughters, Guendolen Howe, became her father's constant companion.

Dr. Howe's teaching career began at Brooks Military Academy in Cleveland, Ohio. From there he went to Central University in Richmond, Kentucky, where he was Professor of Chemistry (and later Physics and Geology as well). In 1894 he accepted the Chair of Chemistry at Washington and Lee University, and for almost half a century he was at that institution.

It was here that he began his intensive bibliographic study of the platinum group and his outstanding research on the element ruthenium. In 1917 he was appointed chairman of a special subcommittee on platinum of the National Research Council. His work led to the development of platinum alloys, and averted a potentially crucial shortage in platinum, threatening our efforts during World War I. He later received several presidential commissions dealing with the platinum metals.

Dr. Howe was beloved by his students and colleagues at W&L. For the first fifteen years he was a one-person department. His lectures were informal, but completely up to date. He was known for his extreme congeniality, charming personality, mild manner, and even temper. He was unceasingly helpful, and believed that more could be learned in the laboratory than from lectures.

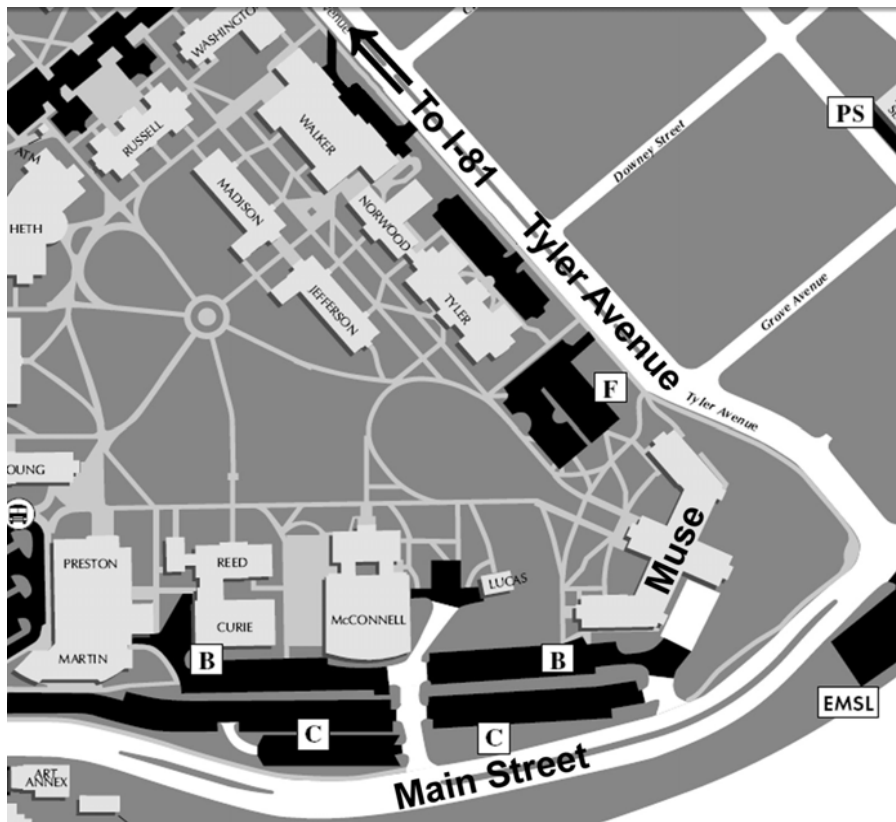
Dr. Howe's unflagging energy found him serving in many capacities outside the scientific field. He was an Elder of the Lexington Presbyterian Church, an active Mason, and held positions in the Town Council in Lexington and the People's National Bank of Lexington.

Directions to Radford University

Directions: Take I-81 to exit 109 and follow Route 177 (Tyler Ave) to Main Street. Go straight into the parking lot beside the bank or make a right, then another right and go into the parking lot. CAUTION: Parking permits are required before 6:00. A parking permit can be received by email from Chris Hermann.

Map of Radford University

Adapted from Radford University Web Site



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The next Blue Ridge Section meeting will be a tour. The possibilities of a tour of AREVA in Lynchburg near the end of May are being investigated. Look for details in the next BRC. The contact person is Bill Lokar.