



SENIOR SCIENCE SOCIETY NEWSLETTER

Volume 4, No. 1
November 2015

BETHANY CARTY AND RASHEED OKIJI EACH AWARDED \$2,500 SCIENCE SCHOLARSHIPS

The Senior Science Society (SSS) of Harford County recently presented "STEM" Transfer Scholarships each in the amount of \$2500, to two outstanding science students graduating from Harford Community College. Bethany Carty of Havre de Grace will attend UMBC to pursue a degree in biological science. Rasheed Okiji of Edgewood, who was unable to attend the award presentation because of a schedule conflict with his US Army Reserve military training, will attend UMBC to pursue a degree in engineering and information technology.

With the award of these two scholarships, SSS has now presented \$20,000 in STEM Transfer Scholarships to graduating HCC students to complete a bachelor degree in science, engineering or mathematics.



From left:
Dick Schwanke
SSS President

Bethany Carty
HCC STEM Student

Susan Luckan
SSS Scholarship Chair

Al Horst
SSS Vice President

Absent from photo:
Rasheed Okiji
HCC STEM Student

The next general membership meeting of the Senior Science Society will be on Monday, 16 November 2015 at 7:00 PM at Harford Community College, Chesapeake Center, Dining Hall South. The speaker will be Dr. Tamra Mendelson, Associate Professor of Biological Sciences at the University of Maryland Baltimore County. Dr. Mendelson's presentation is entitled "Barriers to Communications in Freshwater Fishes Caused Evolutionary Consequences".

Abstract

Communication between males and females is critical for sexual organisms to reproduce. When populations of the same species are geographically isolated for long periods of time, their communication systems--"languages"--diverge to the extent that they no longer choose to interbreed. The result is reproductive isolation, and by most definitions, two new species. My research asks how animal languages diverge and attempts to quantify the consequences.



SENIOR SCIENCE SOCIETY NEWSLETTER

Volume 4, No. 1
October 2015

August Meeting Wrap-Up: Focus on Fracking

The guest speaker at the SSS General Membership Meeting on Monday, 17 August 2015, was Dr. David Vanko, chair of the Marcellus Shale Safe Drilling Initiative Advisory Commission, who spoke on “Maryland’s Approach to Considering Fracking for Natural Gas”. A geologist by training, Dr. Vanko is the Dean of the Fisher College of Science and Mathematics at Towson University.

The presentation stuck to the science and engineering side of this potentially “political” topic. Areas covered included: what Marcellus shale is and why it came to be where it is, how horizontal drilling techniques and hydraulic fracturing techniques have combined to make the natural gas so extractable, what has gone wrong and right with fracking in other areas – but more importantly, how those lessons apply specifically to Maryland’s geography and geology.

Towards the end of the presentation, Dr. Vanko offered several recommendations, including the installation of bedrock-mounted seismographs in Western Maryland to gather baseline data for the area, e.g., any earthquake tremors that may be from deep well injection of waste water in nearby states. The installation would have to be in place before Maryland’s moratorium on fracking expires in October 2017. So what is in the *Baltimore Sun* later that week? The front page story: “Seismic activity linked to fracking to be monitored in Western Md. — Scientists said they will begin monitoring seismic activity in Western Maryland in preparation for hydraulic fracturing for natural gas. Maryland Geological Survey Director Richard Ortt told the *Baltimore Sun* that his agency plans to install a seismometer somewhere in Garrett or Allegany County by next June.”

A second suggestion of Dr. Vanko’s was a nationwide standard for methane emissions at fracking sites. Natural gas and petroleum systems account for 29% of methane emissions in the United States. Methane is a primary component of natural gas and although being shorted lived in the atmosphere compared to carbon dioxide, it has a far greater pound-for-pound greenhouse gas impact. So what is in the *Federal Register* the next day after the SSS’s fracking presentation? “EPA proposes rules for the oil and gas industry’s emissions of methane, chiefly targeting new oil and gas wells, processing equipment and storage facilities.” Included were proposed updates to New Source Performance Standards and Draft Control Techniques Guidelines.

If you missed the August meeting, or just want to learn more, you have another chance to hear Dr. Vanko speak locally on Wednesday, 28 October 2015, 7:00 - 8:30 PM at the Northeastern Maryland Technology Council’s “Science Café” meeting at the Bel Air Public Library, 100 E. Pennsylvania Ave. Dr. Vanko will explore the following topics: Earthquakes are in the news, and man-made earthquakes are on the increase. What causes most earthquakes? Is fracking for oil and gas linked to more earthquakes? Who needs to worry?



SENIOR SCIENCE SOCIETY NEWSLETTER

Volume 4, No. 1
October 2015

SSS Foundation Corner

To expand the reach of the Society, the Senior Science Society Foundation, Inc. (a charitable Maryland Corporation championing education that has 501 (c) (3) status with the IRS) has matured rapidly. Using external donations, the Corporation's near term goals include bringing programs of the Maryland Science Center to County elementary schools, devising means to enhance the technical knowledge of elementary school teachers, and granting scholarships to exceptional students initiating careers in math, engineering and science. In its short life, the Foundation has already granted two scholarships, participated with and co-sponsored the Maryland Science Center to bring science, engineering and mathematics to a local elementary school, and donated funds to the Boys and Girls Clubs of Harford County for the placement of technology-related books in the four clubs within Harford County. We encourage donors to help us participate in furthering our goals. To do so, contact one of the officers for 2015-2017: Susan Luckan – President, Debi Gable – Vice President, Bruce Burns – Corporate Secretary, Fred Robbins - Treasurer

SSS Calendar of Events

Wednesday, 21 October: presentation by Fred Robbins and Rob Lieb to meeting of Harford Community College chapter, Future Educators Association

Friday, 13 November: STEM Summit XIII at new Towson University campus adjacent to HCC

Monday, 16 November: SSS General Membership Meeting. Details on page 1.

Monday, 23 November: module presentations at Harford County Public Schools Professional Development Days, Patterson Mill Middle School

January – March, 2016: module presentations at Bel Air Middle School. Exact dates TBD.



... to Bruce and Bonnie Burns for hosting the First SSS Fall Social at their home on Sunday, 20 September. Approximately 20 members and guests enjoyed a fantastic evening of food and fellowship!