

# Chesapeake Chemist

Maryland Section  
American Chemical  
Society

## FEBRUARY DINNER MEETING



**Dr. Joseph M. Fortunak**

**“How Green Chemistry is Improving Sustainable Access to  
Medicines in Low- and Middle-Income Countries”**

Tuesday, February 19<sup>th</sup>, 6:00 – 8:30 pm

UMBC, Baltimore, MD

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*Braude Award* – Louise Hellwig, Morgan State University, [louise.hellwig@morgan.edu](mailto:louise.hellwig@morgan.edu)

*Maryland Chemist Award*–Angela Sherman, Notre Dame of Maryland University, [asherman@ndm.edu](mailto:asherman@ndm.edu)

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# FEBRUARY DINNER MEETING

## How Green Chemistry is Improving Sustainable Access to Medicines in Low- and Middle-Income Countries

~ Joseph M. Fortunak ~

Associate Professor of Chemistry and Pharmaceutical Sciences  
Howard University

Tuesday, February 19<sup>th</sup>, 6:00 – 8:30 pm

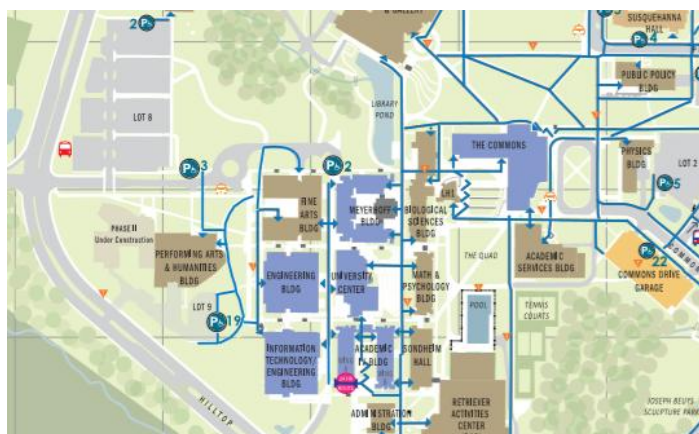
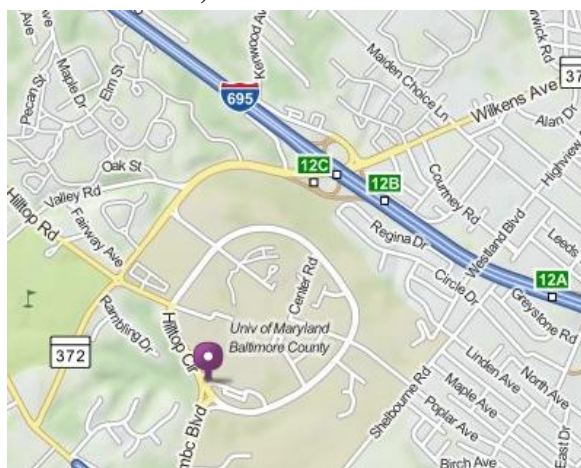
University of Maryland Baltimore County  
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Baltimore, MD 21250

6:00 – 6:15 pm	Registration
6:15 – 7:15 pm	Networking, pizza and other munchies, Room MEYR 145
7:30-8:30 pm	Seminar, Room MEYR 120
Price	Students: FREE; Non-students: \$10
<b>RSVP</b> (by February 18th)	<a href="mailto:contact-us@mdchem.org">contact-us@mdchem.org</a>

### Directions to UMBC:

**From the north**, take Interstate 95 to Route 166 (Exit 47B, Catonsville) *or* take Interstate 83 to the Baltimore Beltway (I-695, west) and then take Exit 12C (Wilkens Avenue, west); follow the signs to UMBC.

**From the south**, take Interstate 95 to Route 166 (Exit 47B, Catonsville); follow signs to UMBC.



Link to campus maps: <http://about.umbc.edu/visitors-guide/campus-map/>

## Abstract

The World Health Organization, the Global Fund and other non-Governmental Organizations (NGOs) make medicines for HIV/AIDS, malaria, and tuberculosis available to millions of people in Low- and Middle-Income Countries (LMICs). Our Green Chemistry research addresses the priorities of these NGOs in making critical medicines less expensive for LMICs. These efforts demonstrably increase global access to medicines (cf., Wall Street Journal, 24 May, 2011).

These efforts, however, do not directly address issues of sustainable development. The Global Fund and other Donor Agencies only purchase drugs whose quality has been assured to meet Strict Regulatory Authority (SRA) standards. This currently prevents nearly all companies in Sub-Saharan Africa from selling medicines to Donor Agencies. Our training at the Kilimanjaro School of Pharmacy enables African pharmaceutical companies to meet SRA standards for drug production. The same training enables National Drug Regulatory Agencies to detect counterfeit and substandard drugs. We also create new science and technology for making medicines that enables African companies to develop efficient processes for producing generic medicines.

## Speaker Biography



Joseph M. Fortunak  
Associate Professor  
Chemistry and Pharmaceutical Sciences  
Howard University

Dr. Fortunak spent twenty-one years in the pharmaceutical industry before joining Howard University, including a position as Head of Global Chemical Development at a major healthcare/pharmaceutical company. He contributed to the development and approval of over a dozen new products for HIV/AIDS, cancer, cardiovascular and CNS diseases, and malaria.

Dr. Fortunak's group researches new chemistry to make medicines less expensive and more available in emerging markets. His group invents new syntheses of critical drugs for HIV/AIDS, malaria, TB, cancer and opportunistic infections. This work includes novel asymmetric reactions and new, organo-catalytic processes; new applications of [4+2] cycloadditions; green chemistry including synthesis without solvents and in water; and continuous flow reactions. The Fortunak group is also interested in novel formulations (e.g., pediatric and adult fixed-dose combination treatments for HIV/AIDS and malaria) with reduced dose through enhanced bioavailability.

Dr. Fortunak's group works with institutions such as the William J. Clinton Health Access Initiative, the World Health Organization, UNITAID, and the Brazilian Ministry of HIV/AIDS to leverage good science and new research into lowering cost and increasing access to critical medicines in Low- and Middle-Income Countries (LMICs). This work was awarded the American Chemical Society Astellas Foundation Prize for "Chemistry Impact on Human Health" in 2009. In Africa, Dr. Fortunak is a co-Director of the Industrial Pharmacy Training Unit (IPTU) at the St. Luke Foundation/Kilimanjaro School of Pharmacy (SLF/KSP). Dr. Fortunak has over 85 publications including 30+ issued Patents.

## Message from the Chair

Welcome to the Maryland Section of the American chemical Society.

As the 2013 chair of the Maryland Local section for the American Chemical Society I cordially invite you to join the Maryland Section activities and encourage you all to "Get involved and Stay involved".

It is very exciting to let you all know that we are on our 99<sup>th</sup> year. The year 2014 is our hundredth Anniversary. Our section was founded in 1914. We are going to plan on celebrating this special 100<sup>th</sup> Anniversary of our section next year. The rich history of our local section can be found on our website. Thanks to Dr. Ernie Silversmith for writing this article. There are over 2000 members in the Maryland Section of the ACS. Our section is comprised of 9 counties that can be found on our section map ([www.mdchem.org](http://www.mdchem.org)). Our section is the home to many four year colleges, universities and community colleges and industries.

In the year 2012 our section hosted MARM (Mid-Atlantic Regional Meeting) at University of Maryland Baltimore County (UMBC). Thanks to many of our councilors and all other volunteers for organizing such an excellent event. I would also like to take this opportunity to thank our immediate past chair of our section Dr.Holly Cymet for her extraordinary dedication, leadership and excellent service to the section.

This year we have an exciting program and events planned for the section. We are holding the [Chemagination Competition](#) for young talented high school students on April 13. The winners of this competition will then compete in the [Mid-Atlantic Regional Chemagination Competition](#) in Princeton, NJ in May. Meetings this year will feature number of excellent speakers with presentations on various topics, Earth Day celebrations, many K-12 outreach activities and National Chemistry Week. We have several awards programs like Student Award, Remsen Award, Braude Award and Maryland Chemist Award in addition to several monthly dinner meetings. [Chemistry Olympiad](#) will be held in April for high school students.

Our section promotes public awareness of chemistry by being involved in community outreach programs, with the ultimate goal of encouraging interest in the chemical sciences.

Like any successful volunteer organization, we depend on a core of officers who are dedicated and active participants. These officers and volunteers work selflessly for the benefit of our organization. As we move into the year 2013, I hope that many of you will become more involved in our exciting committee activities.

Stay connected and Get Involved! This is your section. Together we can make a difference. Your involvement and input will help us build a future for MD section as strong as the past 98 years.

I look forward to working with you all to have a successful year.

Sara Narayan  
2013 Chair, Maryland Section ACS  
[snarayan@stevenson.edu](mailto:snarayan@stevenson.edu)

If you are interested in becoming a member of ACS,  
visit <http://www.chemistry.org/membership/join.html> for more information.

If you are already an ACS member and would like to join our Local Section, please e-mail the current chair:  
[snarayan@stevenson.edu](mailto:snarayan@stevenson.edu)

# Upcoming Events and Announcements

## 2013 CHEMAGINATION COMPETITION:

*Imagine you are living 25 years in the future and have been invited to write an article for ChemMatters, a magazine for high school students that focuses on the role of chemistry in everyday life. The article subject:*

**“Describe a recent breakthrough or innovation in chemistry (and/or its applications) that has improved the quality of people’s lives today.”**

High school students are invited to participate in the 2013 Maryland ACS Chemagination competition. Write an article as if you were living in the year 2038, looking back at innovations that have occurred since 2013. Design a cover for the issue of ChemMatters in which your article will appear. The innovation you write about must fall into one of the following categories: Alternative Energy Sources; Medicine/Healthcare; Environment; New Materials.

The first place winners in each category will go on to compete in the *Mid-Atlantic Regional Chemagination Competition* in May at Princeton University, Princeton, NJ.

Article Submission due date:	March 22, 2013
Chemagination Competition:	April 13, 2013
Competition Location:	Stevenson University, Baltimore, MD

*Full information and application documents are at:* <http://maryland.sites.acs.org/chemagination.htm>

*Questions may be directed to the Chemagination Competition chair: Jim Saunders, [jisaunders@towson.edu](mailto:jisaunders@towson.edu)*

## 2013 ACS CHEMISTRY OLYMPIAD:

The Chemistry Olympiad is a multi-tiered competition designed to stimulate and promote achievement in high school chemistry. The U.S. National Chemistry Olympiad competition is sponsored by the American Chemical Society. Each year, four students are chosen to represent the U.S. team at the International Chemistry Olympiad competition, which is hosted by a different country each year.

In 2010 Maryland student Richard Li won the **silver medal** at the International Chemistry Olympiad, and Marylander Joe Wan attended the 2011 Training Camp for the International Exam. Who will become the 2013 U.S. National Team member?

National Exam:	April 13, 2013
Location:	Notre Dame of Maryland University, Baltimore, MD

**Registration is now open!**

*To register your school, contact Beatrice Salazar, Chemistry Olympiad Coordinator, at:*

[papa51196@verizon.net](mailto:papa51196@verizon.net)

*Full information about the Chemistry Olympiad (including past exams) may be found at*

[www.acs.org/olympiad](http://www.acs.org/olympiad)

## SAVE THE DATE: Student Awards Luncheon

The Student Awards luncheon meeting will be held on Sunday April 14, 2013 from 12:00-3:30 PM at the Crowne Plaza Hotel in Timonium, Maryland. At this meeting the top chemistry student from each of 20 universities and colleges in the Maryland Section area will be honored. Mentors, faculty, ACS members, family and friends are all invited to attend. This year's guest speaker is Dr. Steven Carlo from the Bureau of Engraving and Printing, who will give a fascinating talk about the chemistry involved in the printing of money. Cost for the luncheon will be \$20 for adults and \$10 for students. Reservations for the event should be sent to George Farrant via email: [gfarrant@yahoo.com](mailto:gfarrant@yahoo.com)

## Summer Opportunity for Middle and High School Students

### Gains in the Education of Math & Science (GEMS) Program - Summer 2013

**Applications are being accepted Feb 1 - March 17, 2013** for the Summer 2013 GEMS Program at Aberdeen Proving Ground, MD. There are 3 different grade level programs available: 5-6-7 Bio/Medical program, 7-8-9-10 General program, 10-11-12 Power & Energy and Cyber programs. Details can be found on the US Army Education Outreach website (<http://www.usaeop.com>).

## 2013 Event Schedule

Event	Date	Location
Dinner Meeting: <i>Speaker:</i> Dr. Joseph M. Fortunak	Tuesday, February 19	Meyerhoff Bldg, UMBC
Dinner Meeting: <i>Speaker:</i> Dr. Amber Charlebois, Fairleigh Dickinson University	March 27	Goucher College
Earth Day	April 22	
Student Awards Lunch <i>Speaker:</i> Dr. Steven Carlo, Bureau of Engraving	Sunday, April 14	Crown Plaza Hotel, Timonium
Remsen Award Dinner Meeting <i>Award recipient:</i> Eric Jacobsen, Harvard University	May 28	Remsen Hall, Johns Hopkins University
Wine social	June	TBA
Undergraduate student event	September	TBA
Braude Award Dinner	October	TBA
National Chemistry Week	October 20-26	
Women Chemists Committee Dinner	November	TBA
Maryland Chemist of the Year Dinner	December	TBA

If you have any ideas or suggestions about new events, let us know: [contact-us@mdchem.org](mailto:contact-us@mdchem.org)

# Recent Activities

## THANK YOU, SHIRISH!

The Maryland Section held an event on December 11, 2012 in the Knott Science Center, Notre Dame University to honor the contributions of **Shirish Shah** in support of community education and more than 20 years of service to the American Chemical Society. Friends and colleagues from industry, government and academia gathered together to celebrate the outstanding accomplishments that Shirish has made and continues to make as a leader in many roles of the Maryland Section of ACS. Let's all join together in thanking Shirish for his selfless contributions in support of chemistry education in Maryland.



## WOMEN CHEMISTS COMMITTEE DINNER

At the November 14<sup>th</sup> monthly meeting of the Maryland Section of the ACS, Dr. Tonja L. Ringgold, Assistant Secretary of the Maryland Higher Education Commission, made an exciting presentation on *Enhancing the Completion Agenda by Promoting Women in Science* sponsored by the Women Chemists Committee. Dr. Ringgold focused on the challenges that everyone faces when trying to balance family life with professional demands and how these choices are especially difficult with respect to women. She explained that new national standards were being implemented in education in an effort to increase the quality and career orientation of education across the nation. In addition she discussed a specific Maryland objective to increase the number of citizens in Maryland who have some type of college degree. Dr. Ringgold's warm and personal style invoked an active discussion from the audience who shared personal experiences on the specific challenges that women face related to mentoring, career encouragement, and post graduate education vs. workforce demands.

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## REMINDER: Receiving the Chesapeake Chemist

Hopefully, if you are reading the Chesapeake Chemist this month, you are receiving it via e-mail from us. We went to electronic-only mailings to our MD ACS membership in October 2006.

**Changing your e-mail address? Moving out of the MD ACS area?** E-mail changes can be updated either by:

- E-mailing us at [contact-us@mdchem.org](mailto:contact-us@mdchem.org) – give us your member #, full name, and e-mail changes and we can ensure that your records are updated with National ACS.
- **Contacting the National ACS membership division: 800-333-9511 (US only)** or [service@acs.org](mailto:service@acs.org)

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The current edition and previous editions of the Chesapeake Chemist can ALWAYS be obtained via our website: <http://mdchem.org> – please see the Newsletter Archive link on the left-hand side of the website.



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