

Chesapeake Chemist

*Maryland Section
American Chemical
Society*

MARCH DINNER MEETING



Dr. Amber F. Charlebois

“The Butterfly Effect”

Wednesday, March 27th, 6:30 – 8:30 pm

Goucher College, Towson, MD

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Cody Pitts, Johns Hopkins University, cpitts6@jhu.edu

Suzanne Procell, Army Research Laboratory, suzanne.procell@us.army.mil

Beatrice Salazar, Baltimore County Public Schools, bsalazar@bcps.org

Award Committee Chairs:

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Remsen Award – Dana Ferraris, Johns Hopkins University, dferrar2@jhmi.edu

Braude Award – Louise Hellwig, Morgan State University, louise.hellwig@morgan.edu

Maryland Chemist Award–Angela Sherman, Notre Dame of Maryland University, asherman@ndm.edu

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Contact us at:

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MARCH DINNER MEETING

The Butterfly Effect

~ Amber F. Charlebois ~

Professor of Chemistry
Fairleigh Dickinson University

Wednesday, March 27th, 6:30 – 8:30 pm

Goucher College
Alumni House, Buchner Hall
1021 Dulaney Valley Road
Towson, MD 21204

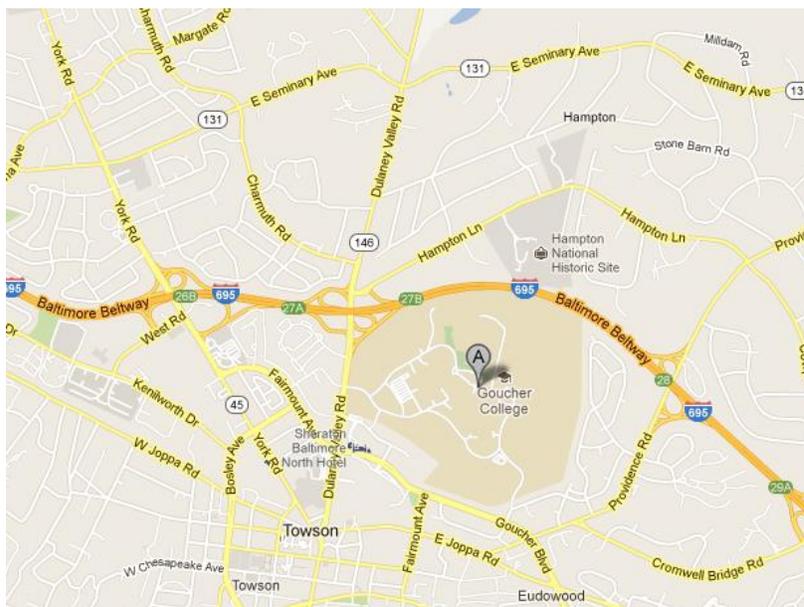
6:30 – 7:30 pm	Registration and Dinner
7:30-8:30 pm	Seminar
Price	Students: FREE; Non-students: \$10
RSVP (by March 25th)	contact-us@mdchem.org

Directions to Goucher College:

GPS address: Goucher College, 1021 Dulaney Valley Road, **Towson**, Maryland, 21204.

From any direction, take the Baltimore Beltway (I-695), leaving it at exit 27A-Towson (Dulaney Valley Road south). The college entrance is on the left, one-half block from exit 27A.

Link to campus maps: <http://www.goucher.edu/contact-and-directions#directions>



Abstract

The **butterfly effect** is a term that describes the more technical notion of *sensitive dependence on initial conditions* in chaos theory. Small variations of the initial condition of a dynamical system may produce large variations in the long term behavior of the system. For example, a ball placed at the crest of a hill might roll into any of several valleys depending on slight differences in initial position. The name of the effect, coined by Edward Lorenz, is derived from the theoretical example of a hurricane's formation being contingent on whether or not a distant butterfly had flapped its wings several weeks before. (Wikipedia) I will discuss how the actions of others have created me as I am today and how my actions can affect others in ways I am just learning. I will challenge the attendees to think about how they can “pay it forward” in their chemistry lives.

Speaker Biography



Amber F. Charlebois
Professor of Chemistry
Fairleigh Dickinson University

Dr. Amber Flynn-Charlebois is an Associate Professor of Chemistry at Fairleigh Dickinson University. She received her B.S. Degree from Syracuse University, her PhD from the University of Buffalo, and continued as a postdoctoral associate at the University of Illinois Urbana-Champaign. She has been teaching organic and biochemistry at the undergraduate level for the past eleven years where she has developed her research program to investigate the interaction of small dye molecules with nucleic acids. During the past eleven years Dr. Charlebois has mentored almost 50 students in research projects which has led to numerous student presentations at local, regional and national chemistry meetings. Charlebois is active in the community where she does hands on demonstrations at local daycares, camps and primary schools. She is also an active member of the Women Chemist's Committee of the American Chemical Society both locally and nationally and is immediate past chair of the NJACS.

Upcoming Events and Announcements

2013 CHEMAGINATION COMPETITION:

High school students are invited to participate in the 2013 Maryland ACS Chemagination competition, April 13th at Stevenson University. Write an article as if you were living in the year 2038, looking back at innovations that have occurred since 2013, and design a cover for the issue of ChemMatters in which your article will appear. The first place winners in each of four categories 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 Competition: April 13

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, jasaunders@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

To register your school, contact Beatrice Salazar, Chemistry Olympiad Coordinator, at:
papa51196@verizon.net

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

Summer Opportunity for Middle and High School Students

Gains in the Education of Math & Science (GEMS) Program

Applications are now being accepted for the GEMS program at APG, MD (Harford County) and other locations through the US Army Education Outreach Program. This program gives students at the 5th through 12th grade levels opportunities to do in-depth, hands-on STEM activities in a wide variety of topics with Scientists and Engineers. Program details and application information may be found at:

<http://www.usaeop.com/programs/GEMS/>

Earth Day at APG, MD

Save the date! Friday, April 26 from 9:30am-12:30pm is the APG Arbor Day/Earth Day celebration. Hands-on STEM Activities for preschool through 5th grade students, Smokey the Bear, Animal Exhibit, Eagle cam, and more! This program is free and open to the public. No registration required. For more information, contact Sandy Young at sandra.k.young26.civ@mail.mil.

2013 Event Schedule

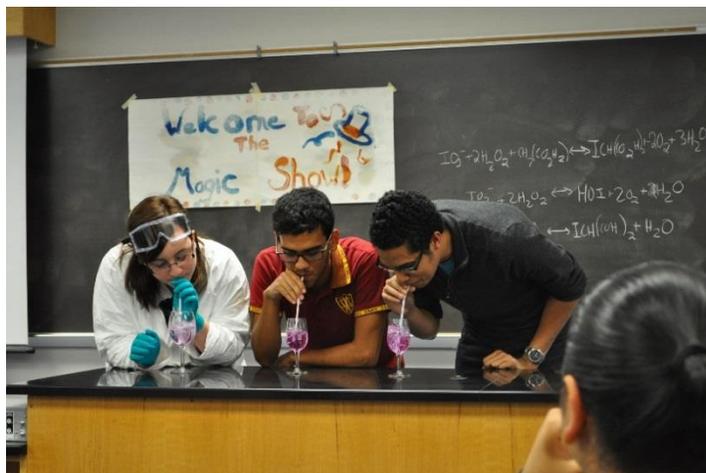
Event	Date	Location
Dinner Meeting: <i>Speaker:</i> Dr. Amber Charlebois, Fairleigh Dickinson University	March 27	Goucher College
Earth Day	April 22	
Student Awards Lunch <i>Speaker:</i> Dr. Steven Carlo, Bureau of Engraving	Sunday, April 14	Crown Plaza Hotel, Timonium
Remsen Award Dinner Meeting <i>Award 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

Recent Activities

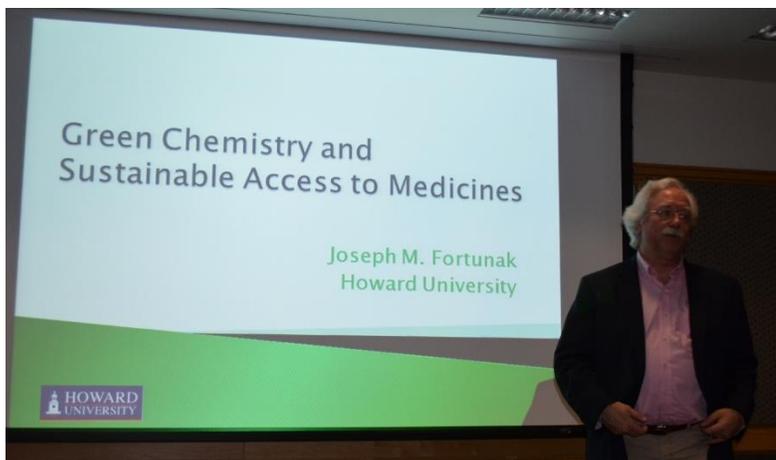
STEVENSON UNIVERSITY CHEMISTRY CLUB

Stevenson University's ACS Student Club has been very active during the 2012-13 School year. Club members distributed cupcakes each with a chemical symbol during the Welcome Picnic in August, put on a chemistry magic show in October and participated in Haunted Hallways during homecoming. During meetings, members made slime, ice cream, bouncy balls and watched an ACS Webinar "Date with Science-Dinner and Dessert Chemistry." This spring they'll take their magic show on the road to a neighboring High School.



JOSEPH FORTUNAK SPOKE AT THE FEBRUARY DINNER MEETING

The term Green Chemistry may conjure up different ideas for many people, but on February 19th, Dr. Joseph Fortunak shared his own research and experiences into this realm. Dr. Fortunak is an organic chemist whose work centers on developing new synthetic methods for medicinal drugs with a focus on making them more “green”. One aspect to this involves improving the environmental efficiency factor (E-factor) for the syntheses, defined



as the amount of waste produced per kg of product. His lab has made significant advances on this front for many drugs including the HIV drug tenofovir and the anti-malarial drug piperoquine.

Dr. Fortunak’s work goes far beyond the lab and takes him to various countries, mostly in Africa. He is dedicated to working with Low- and Middle-Income Countries (LMICs) to bring affordable, quality medicines to these emerging markets. Dr. Fortunak firmly believes that **chemists can provide new solutions to current practices for supplying these countries with much-needed medicines** for HIV, malaria and other important illnesses. Currently important drugs for fighting these major health concerns are often donated via non-governmental organizations (NGOs). But how much better would it be if these countries could manufacture their own drugs, and have them approach or even meet FDA standards? Dr. Fortunak has put in much time and effort into this through both his research and his outreach efforts. He developed a training course that teaches current Good Manufacturing Practices (cGMP) and counterfeit drug detection (an unfortunate necessity that comes from relying on donated drugs), and has delivered this to numerous institutions in Africa.

Dr. Fortunak’s talk was insightful and informative. He introduced us to many aspects of developing methods for lowering cost and increasing access to critical medicines for LMICs, so that these countries may end their dependence on donated medicines. He also had strong words of encouragement for chemists to get involved and provide their expertise to generate new solutions to what are commonly thought of as purely political or social issues.

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.

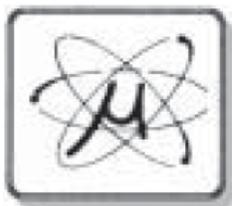
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- **Contacting the National ACS membership division: 800-333-9511 (US only)** or service@acs.org

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