

Welcome from CSW President, Dr. Douglas Raber

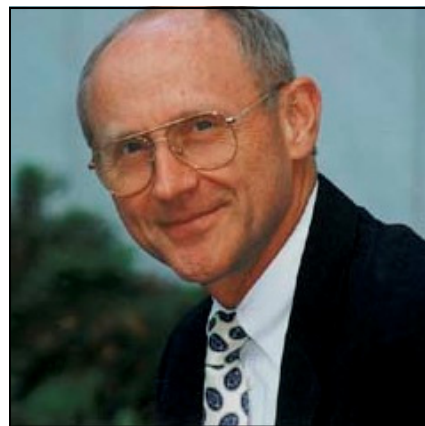
I look forward to the opportunities that will arise this year to serve my fellow chemists in my role as CSW President. At the same time, I recognize that it will be a year filled with challenges, and I ask for your help as we move forward. Together, we can make important progress.

The Chemical Society of Washington is your professional organization, serving as the local section of the American Chemical Society. As such, we represent the entire D.C. metropolitan region. The unusual name of our local section reflects our unique heritage: CSW was founded in 1884, some ten years before its affiliation with ACS. For a full description of this background, see <http://csw.sites.acs.org/history.htm>.

Sometimes we tend to forget the significance of our local section. We are home to an outstanding group of chemists, largely from a variety of high schools, colleges, universities, and government organizations. Our members include some whose names are known around the world and others who are best known for their leadership within their own organizations. Together, with a membership of approximately 4,000 individuals, we comprise a powerful force.

For several years, the leadership of CSW has made a concerted effort to move forward with the changes we see around the world, and I am pleased to report that they have made good progress. Our web site is continuously improving, and you can find what you need at a single location (<http://csw.sites.acs.org/>). Our newsletter (monthly, except for the summer months) is available online, and notifications are sent via e-mail. One of our most significant accomplishments was the initiation this past year of electronic voting. We achieved a four-fold increase in participation this year, receiving votes for local section officers and ACS councilors from 10% of the membership. Our goal is considerably higher participation, but we're already at the level found for national ACS participation. To those of you who voted in November, I extend the thanks of the officers and the Board of Man-

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Career Panel to Present at CSW January Dinner Meeting

The January meeting of the Chemical Society of Washington will have a different format than normal. The meeting will feature a presentation by Katherine Havanki, Assistant Research Professor of Chemistry at Catholic University of America, entitled "Do students see what we see? Eye-tracking research in organic chemistry." The presentation will be followed by a panel who will discuss career information that will be helpful to both those looking for employment, as well as those who might be looking for a new position. Each panelist will give a short, ten-minute presentation about their career path and career advice. A Q&A session with the panelists will follow. The panel will be moderated by Dr. David Harwell, Assistant Director of Career Management and Development for the American Chemical Society. After the panel discussion, there will be plenty of time for attendees to socialize and network with the panelists and other attendees. We encourage our members to attend and provide their wisdom and insight during the social time before and after the presentations. Meeting details can be found on page 2.

Bio: Katherine Havanki

Katherine is currently an assistant research professor at The Catholic University of America, and a supplemental instructor in chemistry for the Center for Academic Excellence at the United States Naval Academy. She received her B.S. in Chemistry in 1995 from Cedar Crest College, Allentown, PA, and her Ph.D. (with distinction) in Chemical Education in 2012 from CUA. Her disserta-

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THE CHEMICAL SOCIETY OF WASHINGTON PRESENTS: *1115th Dinner Meeting*

Thursday, January 10, 2013

ACS Hach Building (ACS Headquarters)

1155 Sixteenth Street NW

Washington, DC

Agenda

6:00 pm Check in and Social Hour (hot and cold appetizers)

7:00 pm Presentation, Katherine Havanki, Catholic University

7:15 pm Career Panel

8:00 pm Networking and Social Hour (hot and cold appetizers)

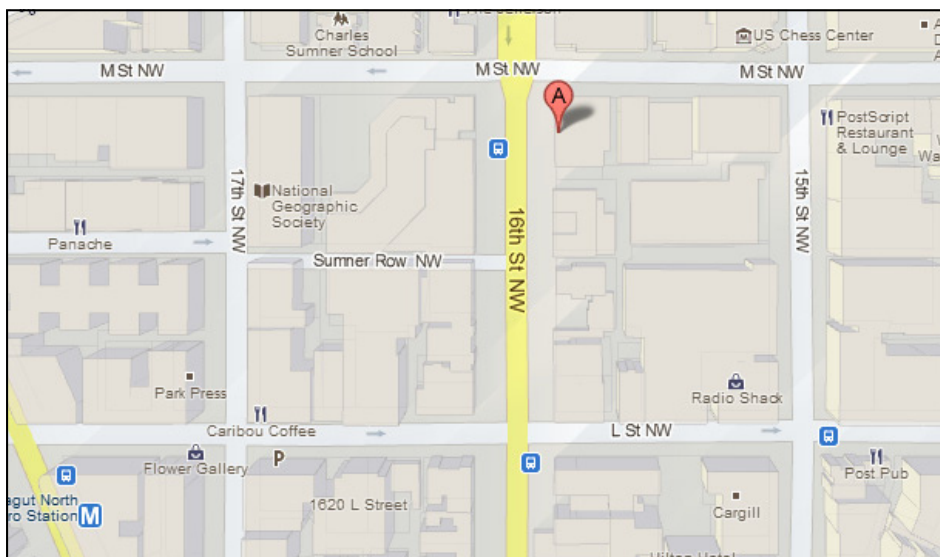
\$10.00 Members & guests, \$5 Students

Reservations: Make reservations by **Monday, January 7, 12:00 noon**, to the CSW office: csw@acs.org or 202-659-2650. Please designate the names in your party. The public is invited to attend. You may attend the talk only, but reservations are appreciated. **Those who make a reservation, but are unable to attend, should send a check for the cost of their meal to the CSW office.**

Directions: The ACS Hach Building is located at the corner of M & 16th Streets in Northwest Washington, four blocks north of the White House. Please note that 16th Street is two-way, and M Street is one-way west-bound.

Parking: Parking is available in nearby commercial parking garages (Please be aware that garage closing times vary). Parking is also available on the street after 6:30 pm, but be aware that most parking meters are in effect until 10:00 pm and may be limited to 2 hours.

Metro: Blue/Orange Line: McPherson Square or Farragut West, Red Line: Farragut North.



Speaker bios, cont. from page 1

tion, entitled *A process model for the comprehension of organic chemistry notation*, focused on the cognitive processes that are used to read organic chemistry equations and employs eye-tracking methodologies to investigate factors that affect these processes. Her advisor was Professor Diane Bunce in the Chemistry Department. While at CUA, Katherine taught in the Departments of Chemistry and Education. She was a member of the evaluation team for the national dissemination of the Process Oriented Guided Inquiry Learning (POGIL) program and co-authored a chapter for *Process-Oriented Guided Inquiry Learning*. Her current research interests focus on learning processes in organic chemistry education, namely how reading is affected by cognitive load, notation style, molecule orientation, and visual complexity. She is also interested in the development of novel assessment methodologies, the effective implementation of technology (i.e. mobile applications and online courseware) both in and out of the classroom, the use of technology as a tool for educational research, and the development of mobile applications to support meaningful learning in chemistry.

Abstract: “Do students see what we see? Eye-tracking research in organic chemistry”

Sharing characteristics of both sentences and diagrams, organic chemistry equations explicitly illustrate relationships among molecules. As visual complexity of the molecule increases, the number of relationships to be processed also increases. This can overload cognitive resources, impairing how information is stored in long-term memory and decreasing a reader's overall performance. To better understand how organic chemistry equations are read and the factors influencing this complex task, eye-tracking methodologies were used to investigate the viewing patterns of students and instructors reading high/low visual complexity pairs of equations for comprehension. Results suggest reading is affected by the complexity of the equations and the expertise of the reader. Analysis of eye fixation patterns also provides evidence for a six-stage process model for the comprehension of organic chemistry notation that accounts for the movement the eyes across the chemical equation, the encoding of information to create an internal representation, the assignment of meaning and relationships within the internal representation, and a check for internal inconsistencies. These results have implications for the design of teaching innovations, assessments, and support materials for organic chemistry.

Career Panelist Bios

Dr. Chad Stoltz is a research chemist in the Research & Technology Division at the Naval Surface Warfare Center, Indian Head Division (NSWC IHD). He attended the University of Maryland and earned a Ph.D. in Inorganic/Materials Chemistry under Professor Bryan W. Eichhorn in the UMD Department of Chemistry and Biochemistry. He accepted a postdoctoral fellowship at NSWC IHD in 2005 where the characterization, synthesis and formulation of energetic materials became his primary career focus. Since becoming a permanent Navy scientist in 2006, his research focuses have included shock sensitivity in crystalline explosives, combustion of novel binders, and propellants formulations and smart materials as energetic material ingredients. Dr. Stoltz was a recent recipient of the NSWC IHD George W. Patterson Award for Outstanding Accomplishment for his work exploring correlations between explosive crystallite microstructure and energetic formulation shock sensitivity. He also serves as the Naval Research Enterprise Internship Program (NREIP) coordinator at NSWC IHD.

Dr. Betsy Jean Yakes earned a Bachelor in Arts from Luther College in 2002 and received her Ph.D. in Analytical Chemistry with a Chemical Instrumentation Specialty from Iowa State University in 2007. After a one-year postdoctoral fellowship at the U.S. Food and Drug Administration/Center for Food Safety and Applied Nutrition, she was hired into a permanent position. She specializes in immunoassay development and spectroscopic techniques for food safety and food defense. Her current emphasis is on creating rapid, sensitive, accurate detection methods for biotox-

ins and viral pathogens using surface plasmon resonance biosensors as well as investigating Raman spectroscopy as a tool to identify small molecule food contaminants.

Dr. Adelina Voutchkova-Kostal is an Assistant Professor in the Chemistry Department at GWU. She completed her graduate work at Yale University (Ph.D., 2008) under the supervision of Robert Crabtree in organometallic chemistry and catalysis. Her post-graduate work at the Yale Center for Green Chemistry and Green Engineering with Paul Anastas (2009-2011) focused on the rational design of commercial chemicals that fulfill the desired function but are minimally hazardous to humans and the environment. Dr. Voutchkova-Kostal joined GWU in January 2012, and has established a research program that spans the two central research frontiers of green chemistry: development of new chemical methodology with reduced environmental impact through catalysis, and the development of tools that chemists can apply to rationally design new chemicals with minimal biological activity. This research program offers group members a holistic awareness of the requirements for developing truly sustainable solutions to the growing environmental, energy and manufacturing problems our society faces. Dr. Voutchkova-Kostal currently teaches Organic Chemistry II and a graduate course in Organometallics and Catalysis. The Organic Chemistry II course attempts to integrate the concept of chemical reactivity with an appreciation of the biological reactivity and toxicity of chemicals, while both courses emphasize the idea of using environmental impact as a performance criterion for organic reactions.

**Do you have
story ideas for
the *Capital
Chemist*?**



Email them to csw@acs.org!

Obituary: Fred Heineken (1929-2012)

Fred Heineken was a long-time member of the CSW Board of Managers. He will be greatly missed.

Fred Heineken, 73, a chemical engineer who retired from the National Science Foundation in 2009 as a program director, died Nov. 19 at a hospital in Oceanside, Calif., of cardiac arrest. The death was confirmed by his son, Chris Heineken.

Dr. Heineken, whose speciality was metabolic engineering and microbiology, spent his early career working for the agricultural biotechnology company Monsanto in Missouri and the medical device company Cobe in Colorado. He moved to the Washington area in 1985 to join the National Science Foundation.

Frederick George Heineken was born in Chicago and raised in Wilmette, Ill. He was a 1962 chemical engineering graduate of Northwestern University in Evanston, Ill., and received a doctorate in chemical engineering from the University of Minnesota in 1966.

He was a fellow of the American Institute of Chemical Engineers, received awards for distinguished service at the National Science Foundation and held leadership posts with the American Chemical Society.

He moved to Carlsbad, Calif., from Potomac in 2009. He was a past member of River Road Unitarian Universalist Church in Bethesda.

His marriage to Jan Broder ended in divorce. Besides his son, of Carlsbad, survivors include two sisters and three granddaughters.

Courtesy of the Washington Post, published December 3, 2012.

Project SEED Mentor Proposals Due January 30

Are you interested in becoming a Project SEED mentor for 2013? The deadline for Project SEED mentors to send their research proposals is January 30, 2013. For complete guidelines, visit www.acs.org/projectseed. If you have any questions, contact the CSW Project SEED Coordinator, Ajay Mallia, at vajaymallia@gmail.com.

It's also time for high school teachers and councilors to begin thinking about potential Project SEED candidates for 2013. In order to be eligible to participate in Project SEED, students need to have completed a year of chemistry class by June 2013, and be able to prove economic disadvantage. For information on Project SEED and student eligibility, please visit the Project Seed website at www.acs.org/projectseed.

The deadline for students to send completed financial statements and applications is May 31, 2013, though should be sent as soon as possible. Applications and financial statements should be sent to the CSW Project SEED coordinator, Ajay Mallia, at vajaymallia@gmail.com.

Project SEED places economically disadvantaged high school students in a variety of research environments (academic, industrial, and governmental) for a period of eight to ten weeks during the summer months. For the past 42 years, Project SEED has helped high school students expand their education and career outlooks by providing opportunities for students who historically lack exposure to scientific careers.

Project SEED Needs Your Support!

Project SEED cannot operate without the help from individuals and companies that support the Scientists-in-training. Are you interested in supporting Project SEED? This year we unfortunately turned away many applicants because of lack of funding. CSW has established the Noel Turner Memorial Fund to help support Project SEED. Your donation will be used for student stipends (\$2500 for the SEED-1 and \$3000 for the SEED-2 program). Your contribution is fully tax deductible. Contact the Project SEED coordinator or CSW (csw@acs.org, phone, 202-659-2650) for more information.

Calendar of Events

January Dinner Meeting

January 10, 2013
Marvel Hall, ACS Hach Building

Project SEED Mentor Proposals Due

January 30, 2013

February Dinner Meeting

February 13, 2013
Georgetown University
Chemistry Department

March Dinner Meeting

March 14, 2013
Alfio's Restaurant, Bethesda

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CSW Election Results: Your 2013 Officers, Councilors, and Managers

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Wayne Wolf

President's Welcome, Cont. from Page 1

agers. To those of you who were not able to vote, I encourage you to do so next fall.

CSW continues to hold its dinner meetings on a monthly basis during the academic year, usually (but not always) on the second Thursday of each month. We move the location around to best serve the membership of a large geographic area, minimizing the travel time for at least some of the meetings you might wish to attend.

Please think now about the January dinner meeting, which will be held on Thursday, January 10, 2013 at Marvel Hall, ACS headquarters in downtown Washington. Details are presented on pages 1-3 in this issue of the newsletter.

All of us who live in the Washington region know what it's like to be busy. At the same time, most of us recognize the importance of professional service, and there are many avenues to do this. I ask you now to give some thought to doing this in cooperation with CSW. We have many volunteer opportunities, including chemistry outreach events for schoolchildren, scholarly activities such as Chemathons and Chemistry Olympiads, National Chemistry Week, and Project SEED, which provides laboratory research experience for financially disadvantaged high school students.

Something else that you can do to help us strengthen CSW is to recognize the accomplishments of your colleagues. CSW presents awards in several areas each year, covering community service, research, college

achievement, and high school teaching. There are many good candidates in the region, but we cannot recognize them unless they are nominated. I ask for your help with this. If you know someone who is deserving, find a way to work with others and submit a nomination to us. Check the web site or email us at CSW@acs.org.

Another valuable opportunity exists for recognizing members of our local section—the ACS Fellows Program. Many of us have colleagues who merit such recognition, and again I encourage you to nominate such people. Details are available on the ACS web site (www.acs.org/fellows). Nominations will open soon, and I encourage you to help provide recognition to our fellow chemists in the Washington region.



CSW President, Doug Raber, presented Schubert Awardee Xu Duan with his award at the December Dinner Meeting.

CSW Travel Awards Assist Local Students with ACS National Meeting Costs

The Chemical Society of Washington is pleased to announce a travel award to defray travel and or registration costs to a National ACS meeting. Eligible expenses include meeting registration and travel expenses, such as airfare and lodging. Applicants should submit the following by Midnight 1/4/2013 to CSW (email: CSW@acs.org):

1. A cover letter stating how and why attending this ACS meeting will promote his/her career;
2. The applicant's CV;
3. A letter of recommendation from the student's mentor explaining why the student deserves the award and how this will help his/her professional development;
4. An accepted abstract with proof of acceptance.

Within three weeks of returning from the ACS meeting, the awardees should submit receipts to the Treasurer for any or all of the eligible expenses described above, after which the Treasurer of the Chemical Society of Washington will issue a check to each of the awardees. After returning from the conference, awardees will be asked to present their posters at one of the upcoming CSW dinner meetings.

The award is not intended for post-doctoral fellows. There will be a maximum of 4 awards available for the 2013 National meeting in New Orleans. Each award will be for \$500 and award of this stipend will be based on the review of the above materials. The award is open to students who are graduate students in the jurisdiction of the Chemical Society of Washington.



CSW President, Doug Raber, presented Gordon awardee Richard Weiss with his award at the December CSW Dinner Meeting.

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January 10: The Chemistry of Noble Gases

January 17: Alternative Careers: From the Lab Bench to the Kitchen Bench

January 24: Ignorance: Why Science Shouldn't Start with a Hypothesis

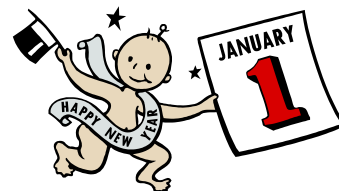
January 31: Gender Bending Science: Impacts of Endocrine Disrupting Chemicals



The Retired Chemists Group

offers a social program of luncheons and outings available to all.

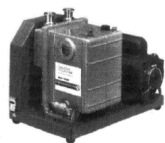
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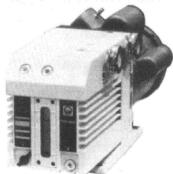
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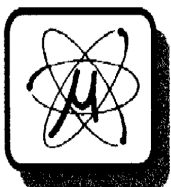
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