

THE CAPITAL CHEMIST

A Publication of the Chemical Society of Washington Section of the American Chemical Society

Join us for the CSW and WCDG Joint Dinner Meeting Thursday, November 14, 2019

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“Stationary Phase Architecture
and Molecular Shape
Differentiation in Liquid
Chromatography”

Biography

Dr. Lane C. Sander is a Senior Scientific Advisor within the Chemical Sciences Division of the National Institute of Standards and Technology (NIST), Gaithersburg, MD. He received a B.S. in Chemistry and Ph.D in Analytical Chemistry from the University of Washington. After graduation in 1982, he came to the National Bureau of Standards (NBS), now the National Institute of Standards and Technology (NIST), as a National Research Council (NRC) Postdoctoral Research Associate. His research interests include: (1) synthesis of novel stationary phases for LC; (2) characterization of LC stationary phases by spectroscopic techniques; (3) elucidation of solute retention mechanisms; and (4) chromatographic methods development in environmental, clinical, and food science applications.

Dr. Sander received the U.S. Department of Commerce Bronze Medal Award in 1990 and the Stephen Dal Nogare Award in Chromatography in 2010. Dr. Sander is the recipient of the ACS 2020 National Award in Chromatography, to be presented at the ACS Spring National Meeting in Philadelphia.

Abstract

Perhaps the single most important decision made by the analyst during the development of a new chromatographic method is the selection of an appropriate column. This decision can be informed by retention theory, prior reports, or knowledge of the retention behavior of specific columns. The gamut of commercial columns provides a profusion of choices; however, an understanding of relevant molecular interactions can help to narrow column selection. If the principal interaction mechanisms can be predicted, informed choices can be made. Retention processes in liquid chromatography (LC) depend on mutual interactions between the solute, the mobile phase, and the stationary phase. The morphology of the stationary phase plays a key role in retention behavior, especially for separations of compounds with constrained molecular shape. Insight into the origins of shape selectivity has been gained through chromatographic, spectroscopic, and simulation-based studies of alkyl-modified surfaces. A compelling model of surface architecture has emerged that offers an explanation of the role played by the stationary phase in promoting shape recognition. This presentation will summarize findings related to stationary phase conformational order, obtained from spectroscopic and computational studies, for correlation with chromatographic performance.



Volume 69, Number 8
November 2019

Inside this issue:

- Vote in the CSW election
- Learn more about the Pump-Chem Patch Festival
- Attend the “Perspectives in Chemistry: 150 Years of the Periodic Table” event
- Nominate a friend or colleague for a CSW award

Meeting Logistics

Date: Thursday, November 14, 2019
Time: 6:00 p.m. Check-in/Social Hour
6:30 p.m. Dinner
7:00 p.m. Presentation

Location: ACS Headquarters, Marvel Hall 1155 16th Street, N.W., Washington, DC 20036

Menu: Meal will be catered by Fresh Connections Catering and will feature grilled kabobs (marinated chicken or beef with green and red peppers, onions, pineapple pieces) served with basmati rice. Vegetarian Option: grilled Veggie Kabobs, served with basmati rice. Sides: Tossed salad with tarragon vinaigrette dressing and artisan breads. Dessert: assorted cookies. Beverages will be provided.

Cost: This program is co-sponsored by CSW and WCDG. There is no charge to attendees for the meal, but reservations are required.

RSVP by noon Tuesday, November 12, to csw@acs.org (preferred) or by phone 202.659.2650 – this line is a voicemail for messages only. Please provide the names in your party when you RSVP, and your preference for the meat or vegetarian option. The public is invited to attend. You may attend the talk only, but reservations are appreciated. If you need any further information or would like to make a reservation, please contact the CSW office by email at csw@acs.org or by voicemail at 202.659.2650.

REMINDER - CSW Election Voting Closes November 15th

If you are a full CSW member and have a valid email address on file with The American Chemical Society, then on or about October 11th you received an email with instructions for accessing the secure voting website and candidate statements, along with a unique vote ID code. The ballot was sent to the same email address at which you receive official communications from ACS. If your email account has strong spam filters, please "white list" elections@vote-now.com and election.ballot@vote-now.com in order to ensure that you receive your voter ID code. If you have no email address on file with ACS, or if the emailed ballot was returned as undeliverable, a paper ballot with voting instructions and candidate statements was mailed to the address on file with ACS. Candidate statements are posted on the [CSW website](#). As in previous elections, voting will close at 11:59 p.m. on November 15. Just click, read, and vote!

If you haven't voted in prior CSW elections, please take this opportunity to do so, and help shape the future direction of CSW. If you have questions about the voting process, or if you do not receive a ballot by October 21, please contact us at csw@acs.org.

CSW Bylaw Revisions

CSW members are also being requested to approve the changes to the CSW Bylaws. The current Bylaws were adopted in 2005 and the changes are necessary to conform to ACS standards and provide for changes over the last 14 years. Due to the extent of the changes, a redline version is simply not feasible. The duties of the President, Secretary, Treasurer, and Managers are defined in the Proposed Bylaws (Bylaw IV, Section 4). The duties of Councilors, beyond their service as Managers, are defined in ACS governing documents.

The CSW Board of Managers has approved the new bylaws and recommends that CSW members vote in favor of their adoption. A vote on the revised bylaws will be included with the ballot for election of Officers, Councilors, and Managers; an affirmative vote of 2/3 of the valid ballots cast will be required to adopt the revised bylaws.

[CSW Current Bylaws](#)
[CSW Proposed Bylaws](#)

Chemical Society of Washington Presents the Pump-Chem Patch Festival

Join the Chemical Society of Washington Local Section of the American Chemical Society for a free community event to celebrate The International Year of the Periodic Table and learn about the importance of chemistry in everyday life. Learn about this year's National Chemistry Week's theme, Marvelous Metals, with many exciting hands-on activities.

When: Saturday, November 2, 2019, at 11:00 am – 4:00 pm

Where: Healey Lawn, Georgetown University
3700 O Street, NW, Washington, DC 20057

RSVP @ <https://www.eventbrite.com/e/74745845837>

*Free event

*Free parking in garage

*Free shuttle from Rosslyn metro station



If you would like to volunteer for the event, contact LaKesha Perry at lnperry@yahoo.com or 240.382.7110. You may also sign up on Sign Up Genius using the link below. Set-up begins at 9:00 am and clean-up will end by 6:00 pm

<https://www.signupgenius.com/go/20F094CA8AA2EA3FF2-pumpchem>

Join us November 20th for "Perspectives in Chemistry: 150 Years of the Periodic Table" at the National Academy of Sciences

Wednesday, November 20, 2019
9:00 am - 5:15 pm EDT
National Academy of Sciences
2101 Constitution Avenue NW
Washington, DC 20418
& Online via Webinar

You are cordially invited to join the American Chemical Society and the National Science Foundation in celebrating the International Year of the Periodic Table of Chemical Elements. Please join us for a colloquium highlighting chemistry breakthroughs enabled by our understanding of the periodic table on Wednesday, November 20 at the National Academy of Sciences at 2101 Constitution Avenue NW, Washington, DC. The colloquium will engage prominent scientists in sharing their perspectives on the history of the periodic table, discoveries that have shaped society, current trends in chemistry research, and opportunities that will impact the future. The colloquium will be followed by a reception.

Confirmed speakers include:

- Ryan Babbush, Google
- Martin Burke, University of Illinois at Urbana-Champaign

A dark purple rectangular banner with white text. The main title is "PERSPECTIVES IN CHEMISTRY: 150 YEARS OF THE PERIODIC TABLE". Below it is the date "WEDNESDAY, NOVEMBER 20, 2019" and the time "9:00 AM - 5:15 PM ET". On the right side, there is a blue button with white text that says "REGISTER NOW". At the bottom, in smaller white text, it says "JOIN ACS & THE NATIONAL SCIENCE FOUNDATION FOR THIS EXCITING EVENT - ATTEND FREE IN WASHINGTON, DC OR ONLINE." The background of the banner features a faint, repeating pattern of chemical symbols like H, O, N, C, S, P, K, Ca, Fe, Cu, Zn, Ag, Au, Pt, Pb, Bi, Po, At, Rn, Fr, Ra, Ac, Th, Pa, U, Np, Pu, Am, Cm, Bk, Cf, Es, Fm, Md, No, Lr, and various chemical formulas like H2O, CO2, CH4, NH3, HCl, NaCl, KCl, CaCl2, FeCl3, CuCl2, ZnCl2, AgCl, AuCl3, PtCl4, PbCl2, BiCl3, PoCl4, AtCl5, RnCl6, FrCl7, RaCl8, AcCl9, ThCl10, PaCl11, UCl12, NpCl13, PuCl14, AmCl15, CmCl16, BkCl17, CfCl18, EsCl19, FmCl20, MdCl21, NoCl22, LrCl23.

**PERSPECTIVES IN CHEMISTRY:
150 YEARS OF THE PERIODIC TABLE**

WEDNESDAY, NOVEMBER 20, 2019
9:00 AM - 5:15 PM ET

REGISTER NOW

JOIN ACS & THE NATIONAL SCIENCE FOUNDATION FOR THIS
EXCITING EVENT - ATTEND FREE IN WASHINGTON, DC OR ONLINE.

- Eugene Chen, Colorado State University
- Jeannette Garcia, IBM
- Malika Jeffries-El, Boston University
- Gary Molander, University of Pennsylvania
- Amy Prieto, Colorado State University

The colloquium is generously supported by a grant (CHE-1937824) from the National Science Foundation.

Register now to join us online or in person:

To register and learn more about this event, please visit

<https://www.acs.org/content/acs/en/education/whatischemistry/periodictable/periodic-table-colloquium.html>.

Call for Nominations: Hillebrand Prize & Schubert Award

Nominations have been extended through November

Call for Nominations: William F. Hillebrand Prize

Nominations are invited for the 2019 Hillebrand Prize, awarded annually for original contributions to the science of chemistry by a member or members of the Chemical Society of Washington (CSW), the local section of the American Chemical Society. The Hillebrand Prize is the most prestigious honor given each year by CSW and is recognized nationally as a mark of significant accomplishment in chemistry. The Hillebrand Prize originated in 1924 and is named for Dr. William F. Hillebrand (1853- 1925), an internationally-recognized pioneer in analytical chemistry and one of Washington's most distinguished early chemists.

The prize carries an honorarium of \$2000. Many previous Hillebrand Prize recipients have won numerous other national and international awards, including three who have received the Nobel Prize. See the list of award winners at <https://capitalchemist.org/2018/06/hillebrand-prize-recipients-by-year/>.

The nominating package should contain the following:

Nominating Letter – limited to 1000 words

The letter should focus on the chemical accomplishments of the nominee, rather than the bio of the nominee, from a broad standpoint, leaving the finer points to those submitting seconding letters. Biographic details (degrees, positions held, major activities etc) will be given in the nominee's CV. The letter should begin with the major theme(s) in the nominee's research career with perhaps a summary of how these evolved over the years to create breakthroughs or push the field in a new or very productive direction.

Describing the nominee's major contribution(s) is extremely important and should be the bulk of the letter.

There is no preference or restriction for the specific area of contribution so long as it represents a significant accomplishment in chemistry. Anything is fair game; synthetic or analytical, experimental or theoretical, bio- or inorganic, etc. This section might detail such things as: the major techniques used in their research and how these were applied to a specific area to bring about significant results not previously achievable; if their research resulted in the development of a new experimental/instrumental technique or use of an existing technique in an innovative new way; how techniques the nominee developed became standard in that area; the impact the nominee's work had on influencing other areas of research; development of new reagents, catalysts or reaction conditions; development of a new computational method or theoretical approach; etc. The nominator should provide evidence in support of these statements. This could information about: the number of citations, impact factors of certain articles (or aggregate numbers), especially influential articles/book chapters, important invited talks, previous awards by other societies, patents, funding, important leadership positions, etc. Mentioning an extremely productive collaboration is possible so long as the role/contributions of the nominee are clear. The award is not given for mentoring students (as a specific criteria) but nominators often mention if this has occurred, especially if these students have gone on to significant posts on their own.

Two Seconding Letters – limited to 500 words each

It is helpful if these be from established experts in the nominee's field, and best if they are from experts at institutions other than the nominee's unless a notable expert in the nominee's area is also from the nominee's institution.

Curriculum Vitae - the candidate must be a member of CSW

The CV should strongly emphasize individual academic backgrounds, appointments, publications, presentations, and patents.

List of Publications

This is critical in determining the specific scientific contribution of the nominee or team.

Proposed Citation – limited to 25 words

This is a brief statement that should be understood by chemists in almost any area. It should avoid highly specialized language but still give the reader the area of accomplishment and why this is a significant accomplishment in chemistry. In some ways it is a one or two sentence abstract of the first paragraph of the nominating letter. Since this is only 25 words, you may simply want to provide 1 or 2 examples of previous awardees.

We strongly recommend that the nominator collect all materials and forward in one email, preferably as PDF files(s), to csw@acs.org. Nominations will be active for three years.

If you would like to verify the eligibility of an individual as a nominee or nominator, please contact the CSW Administrator at csw@acs.org. All materials must be received by November 30, 2019. The awardee will be announced before the end of the year, and the Prize will be presented at the CSW dinner meeting in March 2020.

If you have any questions about the award or the procedure for nominating someone for the award, please contact our office – csw@acs.org or 202.659.2650.

Call for Nominations: Leo Schubert Memorial Award

The Chemical Society of Washington (CSW) is pleased to announce the call for nominations for the Leo Schubert Memorial Award to recognize an outstanding teacher of high school chemistry in the Washington, D.C. area. The award was established in 1979 to honor Dr. Leo Schubert, a chemistry professor at American University who devoted much of his career to developing programs for high school teachers and students. The Schubert award consists of a \$500 honorarium and a certificate, which will be presented at the March 2020 CSW dinner meeting.

Nominations for the award must be comprehensive in describing the nominee's accomplishments in areas such as innovation in teaching, writing curricula, outside teaching, papers published, involvement in science fairs, and postgraduate study. The application may also include supporting letters, as well as any supporting documents that concisely illuminate the nominee's accomplishments.

To be eligible for the CSW Schubert award, the nominee must currently teach chemistry at a secondary school in the geographic region of the Chemical Society of Washington, which includes metropolitan Washington, D.C. and the neighboring counties in Maryland (Montgomery, Prince George's, Charles, Calvert and St. Mary's Counties) and Virginia (Arlington, Fairfax and Loudoun Counties). The region of CSW also includes six counties on the Eastern Shore of Maryland: Caroline, Talbot, Dorchester, Wicomico, Worcester, and Somerset.

The CSW Schubert Award nomination form is available directly via The Capital Chemist. Alternatively, a pdf version of the nomination form can be obtained by an email request to csw@acs.org. Completed pdf nomination forms can be sent directly to csw@acs.org. All nominations must be submitted by November 30, 2019.

Download the [2019 Schubert nomination form](#).

Student Travel Awards Available for ACS National Meetings

The Chemical Society of Washington is pleased to announce a student travel award to defray travel and/or registration costs to the National ACS Spring and Fall meetings. Eligible expenses include meeting registration, travel expenses, airfare and lodging. Applicants should submit the following by Midnight, January 19 (for Spring) or Midnight, June 1 (for Fall) to CSW (CSW@acs.org):

1. A cover letter stating how and why attending this ACS meeting will promote his/her career, including a valid email address and mailing address;
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.

The award is open to students who are graduate and undergraduate students in the jurisdiction of the Chemical Society of Washington. The award is not intended for post-doctoral fellows. There will be a maximum of three awards available for each National meeting. Each award will be for up to \$1000 of eligible expenses based on the review of the above materials.

After returning from the conference, awardees will be asked to draft a short summary of their experiences for posting to the Capital Chemist website and to present their posters, if applicable, at one of the upcoming CSW dinner meetings.

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The **Chemical Society of Washington (CSW)** is the local ACS Chapter for the Washington, DC area and serves approximately 4,000 members.

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CSW Calendar of Events

- November 2: CSW Pump-Chem Patch Festival
- November 14: CSW/WCDG Joint Meeting
- November 15: Deadline to vote in CSW Election
- November 20: *Perspectives in Chemistry: 150 Years of the Periodic Table* event at NAS
- November 21: CSW Board of Managers Meeting
- November 30: Schubert Award Nomination Deadline
- November 30: Hillebrand Prize Nomination Deadline
- December 14: CSW/RCG Joint Meeting
- January 19: Deadline for Student Travel Awards