



ISOTOPICS

The Cleveland Section of the American Chemical Society

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On Deck:

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T.B.A.

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Isotopics

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May Meeting Notice

Edward W. Morley Award Presentation

Wednesday, May 16, 2018

Michaelson & Morley Restaurant

11038 Bellflower Rd., Cleveland, OH 44106

4:30 pm	Executive Committee Meeting
5:00 pm	Social/Networking
5:45-7:00 pm	Dinner
7:00 pm	Award presentation and Address

"Some chemical and biological highlights of nitric oxide production by mammals"

by Dr. Dennis J Stuehr, Professor, Dept. Molecular Medicine, Case Western Reserve University School of Medicine and Full Staff, Dept. Pathobiology, Cleveland Clinic Foundation

Abstract: That mammals might synthesize nitrogen oxides was first suspected in the late 1800's, but remained controversial until experiments could finally be done using germ-free animals around 1980. While this early work was forging a clear tie between nitrogen oxide biosynthesis and stimulation of the mammalian immune system, parallel work was discovering a role for nitric oxide (NO) as a signal molecule for vascular relaxation in the mammalian circulatory system. These and related discoveries fueled a tremendous interest that led to the awarding of the 1998 Nobel prize in Physiology & Medicine for NO research, and the current publication of more than 6000 papers/year on NO biochemistry and biology. Mammals express three related NO synthase enzymes (NOSs) that each generate NO from the amino acid L-arginine under various biological settings and circumstances. Although NOSs are heme-containing enzymes whose catalysis is broadly similar to the cytochrome P450 enzymes, they have evolved separately and display some unique and interesting facets regarding their structure, reaction chemistry, cofactor use, and regulation. This talk will highlight these unique aspects, and will address how NOS enzymes catalyze an odd-electron chemistry to generate NO as their free radical product, and the "tricks" that NOS enzymes use to insure that their catalysis can go on, despite it generating a potent heme poison (NO).

DINNER RESERVATIONS Please RSVP to Drew Meyer dam135@case.edu with the names and number of people in your party by Wed., May 9, 2018. The ACS accepts credit cards, cash, and/or checks made out to "Cleveland ACS." Cost: \$20 for members & guests; \$10 for retirees & unemployed; \$5 for students.

Dinner Choices:

- Pan seared scallops/cauliflower puree/roasted grapefruit/fennel/orange reduction
- Maple brined chicken/sweet potato risotto/broccoli rabe/roasted chicken demi
- Skirt steak/carboanara dumplings/baby spinach/mustard jus
- Vegetable lo- mein/ vegetables/ crispy tofu /mushroom miso broth/cashews.

The Social Hour and Dinner will be in the Michelson & Morley Restaurant in the Tinkham Veale University Center on the campus of Case Western Reserve University. Parking may be obtained in the Severance Hall garage, entrance off East Boulevard, and there is an entrance to the Tinkham Veale Center from the garage. (On street parking may also be available.) The Award Presentation and Seminar will immediately follow dinner and be in the Thwing Center located next door to the Tinkham Veale University Center.

Announcement: ShatteredCERM The Glass City Chemistry Conference 2018

Thursday June 14, 2018 - Saturday June 16, 2018, University of Toledo

The Toledo Section Chemistry Conference is scheduled for **June 14-16, 2018**, on the University of Toledo campus. The conference starts Thursday evening with a social and dinner, 5:30 - 10 pm. A keynote is also planned. Friday is a full day of oral presentations and workshops, including programming for undergraduate and graduate students, as well as a student social in the evening. Posters will be available all day Friday, with authors present from 5:30 - 7:00 pm. Some of the divisions hosting sessions are Inorganic Chemistry, Organic Chemistry, Biochemistry, Nanochemistry, and Chemical Education. Saturday, June 16th, is Teacher's Day, from 8:30 am - 2:30 pm, which will include

oral presentations and workshops. For more information: <https://tinyurl.com/y7meqdc5>

From the ACS Council meeting and Board of Directors meetings held March 16-18 at the 2018 Spring National Meeting in New Orleans

Candidates for President-Elect, 2019: The Committee on Nominations and Elections presented to the Council the following nominees for selection as candidates for President-Elect, 2019: Harmon B. Abrahamson, Luis A. Echegoyen, Thomas R. Gilbert, and Mary Virginia Orna. By electronic ballot, the Council selected Luis A. Echegoyen and Thomas R. Gilbert as candidates for 2019 President-Elect. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.

Candidates for Directors-at-Large: The Committee on Nominations and Elections announced the selection of the following **candidates for Directors-at-Large** for 2019-2021 terms: **Frank D. Blum, Lee H. Latimer, Ingrid Montes, and Angela W. Peters.** The election of two Directors-at-Large from among these four candidates and any selected via petition will be conducted in the fall. Ballots will be distributed to the Council on or before October 1, 2018.

2019 Member Dues: The Council voted on the recommendation of the Committee on Budget and Finance to set the member dues for 2019 at the fully escalated rate of \$175. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.

Membership: The ACS ended 2017 with over 150,000 members. While this means that ACS remains the world's largest scientific society, this number represents a continuing decline in overall membership for the sixth year in a row. The Committee on Membership Affairs is committed to working with Council, the Board of Directors, the Committee on Budget and Finance, ACS staff.

New Orleans Meeting Attendance

As of Monday, March 19:

Attendees	8,470
Students	6,432
Exhibitors	877
Expo only	301
Guests	505
Total	16,585

Board Resolution: Finally, the Board approved a resolution that recognizes and applauds the United Nations for proclaiming 2019 as the International Year of the Periodic Table, and pledged that the Society will do its utmost to recognize and participate in events celebrating this important scientific milestone and achievement.

From ACS Discoveries: Wine polyphenols could fend off bacteria that cause cavities and gum disease

Journal of Agricultural and Food Chemistry

Sipping wine is good for your colon and heart, possibly because of the beverage's abundant and structurally diverse polyphenols. Now researchers report in ACS' Journal of Agricultural and Food Chemistry that wine polyphenols might also be good for your oral health.

Traditionally, some health benefits of polyphenols have been attributed to the fact that these compounds are antioxidants, meaning they likely protect the body from harm caused by free radicals. However, recent work indicates polyphenols might also promote health by actively interacting with bacteria in the gut. That makes sense because plants and fruits produce polyphenols to ward off infection by harmful bacteria and other pathogens. M. Victoria Moreno-Arribas and colleagues wanted to know whether wine and grape polyphenols would also protect teeth and gums, and how this could work on a molecular level.

The researchers checked out the effect of two red wine polyphenols, as well as commercially available grape seed and red wine extracts, on

bacteria that stick to teeth and gums and cause dental plaque, cavities and periodontal disease. Working with cells that model gum tissue, they found that the two wine polyphenols in isolation — caffeic and p-coumaric acids — were generally better than the total wine extracts at cutting back on the bacteria's ability to stick to the cells. When combined with the *Streptococcus dentisani*, which is believed to be an oral probiotic, the polyphenols were even better at fending off the pathogenic bacteria. The researchers also showed that metabolites formed when digestion of the polyphenols begins in the mouth might be responsible for some of these effects.

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