ACS of Western New York

Double Bond

The Newsletter of the Western New York Section of the American Chemical Society

Volume 89 ***September 2017***

2017 SCHOELLKOPF MEDAL

The Western New York Section of the
American Chemical Society
invites you to be present
at the eighty-seventh presentation of the
Jacob F. Schoellkopf Medal
to

Diana S. Aga

Tuesday evening, the twenty-sixth of September
two thousand seventeen

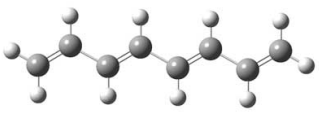
Cash bar with cold and hot hors d'oeuvres at six o'clock
Dinner at seven o'clock

Presentation to follow dinner

The Hotel Lafayette
391 Washington St. | Buffalo, NY 14203

Formal Dress Optional
R.S.V.P. by September 19, 2017

(further details are found on page 3)



GET READY FOR THE 2017 LOCAL SECTION OFFICER ELECTION

If you are interested in the goals and activities of the American Chemical Society, then get involved with the Western New York Local ACS Section. We are looking for members who can bring energy and ideas to the Local Section Executive Committee. Positions to be filled include Vice-Chair for 2018, Treasurer (a 2-year term) and 2 Member-at-Large positions. Nominations are still open. Contact the editor or secretary ASAP.

Complete information on voting will be published in next month's edition of the *Double Bond.*

YOUR VERY OWN WNYACS LOCAL SECTION EVENT

Why do we have so few local section meetings? Do you have an idea for an event that you are sure chemists would come out for? Create your own event using the Science Café Tool Kit, on the ACS website at www.acs.org/content/acs/en/membership-and-networks/ls.html. Science cafés provide a relaxed, open venue for nonscientists and scientists to discuss all sorts of current topics.

You can suggest a Science Café event idea to one of the Local Section officers listed on the last page of this newsletter, and the Section can apply for a $500 Mini-Grant from ACS to support a Science Café. The ACS Tool Kit also includes sample budget, publicity and social media material that make organization easier.

Also check out ACS Program-in-a-Box, which brings streaming broadcasts, games, live question and answer session with national experts to a local event–all included ready to open and enjoy. The newest PIB will be associated with National Chemistry Week (Oct. 23-27), and has the theme "Chemistry Rocks! Exploring the Chemistry of Rocks and Minerals".

THE 2017 JACOB F. SCHOELLKOPF MEDAL

The Schoellkopf Medal is the oldest award of the American Chemical Society (ACS) given by a local section. The Jury for the Schoellkopf Award of the ACS selected Diana S. Aga, Henry M. Woodburn Professor of Chemistry in the Department of Chemistry, University at Buffalo, as the 2017 Schoellkopf Award recipient:

> *...in recognition of her pioneering contributions to understanding the effect, fate, transport, and treatment of emerging contaminants in our environment, her wide-ranging student mentoring efforts, and her service to the profession.*

Diana S. Aga, Professor of Chemistry at the University at Buffalo, received her B.S. degree in Agricultural Chemistry from the University of the Philippines at Los Baños in 1988, and her Ph.D. in Analytical Chemistry from Kansas University (KU) in 1995. Her graduate dissertation was jointly supervised by Prof. George S. Wilson (KU) and Dr. E. Michael Thurman (U.S. Geological Survey), which involved developing mass spectrometry-based and immunoassay-based techniques to investigate the fate and transport of pesticides in the environment.

She subsequently moved to Zurich, Switzerland in 1996 to conduct postdoctoral research at the Swiss Federal Institute of Aquatic Science and Technology, also known as EAWAG. In 1998, Diana joined the Chemistry Department of the University of Nebraska, Kearney, as a tenure-track Assistant Professor. She then worked in industry for two years (2000-2002) as a Research Scientist at the Crop Science Division of Bayer, which focuses on crop protection and animal health research.

In 2002, Diana joined the Department of Chemistry at the University at Buffalo, SUNY (UB) as a tenure-track Assistant Professor; she was promoted to Associate Professor in 2006, and to Full Professor in 2010. Diana's research program centers on investigating the environmental chemistry, biological and ecological effects, and mitigation strategies of legacy and emerging contaminants in the environment, such as antimicrobials, persistent organic pollutants, pesticides, pharmaceuticals, endocrine-disrupting chemicals, and engineered nanomaterials. She is applying her expertise in developing trace analytical methods using chromatography and mass spectrometry to understand and optimize various treatment processes to remove emerging contaminants and prevent spread of antibiotic resistance in the environment.

Professor Aga has co-authored more than 130 peer-reviewed scientific articles and book chapters on these subjects. She serves as editor of the *Journal of Hazardous Materials*, an Elsevier international journal, which publishes research papers on environmental control, risk assessment, impact and management. Diana has received various prestigious awards and fellowships including the North Atlantic Treaty Organization (NATO) Scientific and Environmental Affairs Research Fellowship (1997), National Science Foundation (NSF) CAREER award (2000), Humboldt Research Fellowship (2007), American Chemical Society (ACS) PROGRESS/Dreyfus Lectureship Award (2007), New York Water Environment Association Kenneth Allen Memorial Award (2007), Fulbright Research Fellowship (2011), Society of Environmental Toxicology and Chemistry (SETAC) Menzie Environmental Education Award (2012), UB Excellence in Graduate Student Mentoring Award (2013), and the ACS AGRO Fellow Award (2017).

2017 Jacob F. Schoellkopf Award Dinner

For reservations, please call

Alice Steltermann at the Canisius College

Department of Chemistry & Biochemistry

(716) 888-2340

Dinner Selections:

Prime Rib with au jus*

Chargrilled Chicken Breast with red peppers, spinach, & provolone*

Cheese Tortellini with sundried tomato cream sauce

Wine served with meal

**gluten free*

$40.00 per person ($20.00 per student)

Name: _____

Guest Name(s): _____

Number of Prime Rib _____

Number of Chargrilled Chicken _____

Number of Cheese Tortellini _____

Amount $ _____

Please respond by September 19, 2017

70 YEARS AGO IN THE *DOUBLE BOND*

The following excerpt appeared in the June, 1947 edition of the Double Bond

The April meeting of the Western New York Section of the ACS was held Tuesday, April 15, in Norton Hall at the University of Buffalo. The speaker was Dr. Dorothy Wrinch of Smith College. Dr. Wrinch, who was the 1947 Steeglitz lecturer, discussed the present state of our knowledge of the structure of natural proteins.

Despite the impression created by organic chemistry texts which appear to explain proteins by a review of the structure and properties of the constituent amino acids, the configuration of the protein skeleton remains today a major unsolved problem.

The methods of organic chemistry, so eminently successful in the elucidation of structure and ultimate synthesis of so many complex natural products, have not been too successful in revealing the structure of the protein molecules. This is because all available evidence indicates the protein molecule to be a physiochemical rather than a chemical entity, and application of degradative processes leads to immediate collapse of the characteristic structure of the molecule. Physical chemical methods which are nondestructive, specifically colloid study and crystallography, appear to hold forth the greatest promise of revealing the protein skeleton structure. Svedberg and Sorensen have concluded that the great majority are not molecules but molecular aggregates. For example, hemoglobin with a molecular weight of 67,000 is a two-molecule aggregate similar to formic acid dimer.

It was Dr. Wrinch's premise that the protein molecule is essentially a simple skeleton and that the variety observed in natural proteins arises from the number of substituents in exactly the same way that the numerous compounds of the aromatic series are obtained by substitution in the benzene ring. Evidence to support this view has come from recent work in physical chemistry and chemical crystallography. Application to proteins has revealed that the protein molecule is a rigid skeleton possessing a cubic structure of which hexamethylene tetramine is an example. This has been previously suspected since heteropoly acids of cubic structure, such as phosphotungstic acid, are effective protein precipitants. The speaker pointed out that crystallography alone will not disclose structure unless a general idea of the approximate structure is at hand.

In the biosynthesis of protein molecules, the "active patch" theory appears to best explain the observations. It is postulated that a protein molecule maintains its existence by virtue of the association of favorably located substituents. The biologic function resides on one of the crystal faces and there is generated a "crystallizability" at this face resulting in the deposition thereon of its complement. This favorable juxtaposition of amino acid substituents lends not only rigidity to the molecule but also the protein character.

Dr. Wrinch expressed the hope that with elucidation of the protein skeleton, the fundamental phenomena of enzymology, immunology, pharmacology and other fields of protein study would be explained.

Editor's note, the 1962 Nobel Prize in chemistry went to Max Perutz and John Kendrew for work on the structure of proteins, including hemoglobin.

WNYACS Executive Committee