Sylvia M. Stoesser
Lecture in Chemistry

Journeys in Chemical Oceanography and Metrology

Dr. Regina
Easley
Research Chemist
National Institute of
Standards and Technology

3:30 p.m. Wednesday, March 9, 2022
116 Roger Adams Laboratory
Reception immediately following in CLSL-A Atrium

Register online

College of Liberal Arts & Sciences
Department of Chemistry

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

Supported by the Dr. Yulan C. Tong Stoesser Lecture Endowment Fund

Sylvia M. Stoesser

Sylvia Stoesser was born July 18, 1901 in Buffalo, NY. She obtained a bachelor's degree from the University of Buffalo in 1923 and a Ph.D. in physical chemistry from the University of Iowa in 1928. She was the first woman chemical researcher hired by Dow in Midland, Michigan, where she was considered by her colleagues to be the finest woman chemist since Marie Curie. Her hiring by Herbert Dow, without an interview, was motivated by Dow's hiring of her husband, Dr. Wesley C. Stoesser, also a chemist, who told Dow that Sylvia "insisted on a job too." Over her 11 years working for the company, Dr. Stoesser was awarded 39 patents. Five of the patents involved the increase of crude oil production by the use of acid inhibitors in oil wells. Twelve patents published in the 1930's are considered her most significant, involving various aspects of polystyrene plastic. She also developed a non-flammable, non-explosive dry cleaning fluid using perchloroethylene. In only one case did Dr. Stoesser's name appear alone on a patent; she produced patents with 15 different male co-workers. She and her husband collaborated on only one patent.

Dr. Stoesser's career ended in 1940 with the birth of a daughter, her only child. She served as a consultant to Dow in later years, and published in 1952 the definitive work on styrene entitled "Styrene, its Polymers, Copolymers and Derivatives." She devoted much of her time in later years to volunteer work at the Midland hospital and the King's Daughters Home for the Elderly, of which she was chairperson, and where she herself died in 1991.

A list of her significant patents appears on the back of this brochure.

Dr. Yulan C. Tong *earned her M.S. in 1958 and her Ph.D. in 1961 at the University of Illinois under the direction of Nelson Leonard. Dr. Tong worked as a chemist for 30 years at The Dow Chemical Company. She provided a seed donation matched by Dow AgroSciences to launch the first Sylvia Stoesser Lecture in 2000. Since fall 2015 Dr. Tong's generous gift has endowed the Sylvia Stoesser Lecture series.*

Dr. Regina Easley

Dr. Regina Easley is a Research Chemist at the National Institute of Standards and Technology (NIST) located in Gaithersburg, MD in the Chemical Sciences Division of the Materials Measurement Laboratory. Dr. Easley joined NIST in 2014 with over 15 years of experience in analytical chemistry and oceanography. In her role as Research Chemist, she comanages the electroanalytical chemistry laboratory which is responsible for the production of pH Standard Reference Materials (SRMs). Additional research in her laboratory focuses on improving methods to measure the inorganic carbon dioxide system in seawater with an emphasis on pH measurements. These efforts include the development of a Reference Material for oceanographic pH. In addition to her role as Research Chemist, she also serves as an affiliated faculty member at Georgetown University in a newly developed master's degree in Environmental Metrology and Policy (EMAP). This unique program is a collaboration between GU, NIST and the Environmental Protection Agency. Dr. Easley is a graduate of Hampton University (B.S. in chemistry) and obtained her M.S. in organic chemistry from the University of California, Los Angeles, prior to completing her doctoral degree in chemical oceanography at the University of South Florida. During her free time, Dr. Easley enjoys serving as a volunteer in the Sant Ocean Hall at the Smithsonian National Museum of Natural History.

Journeys in Chemical Oceanography and Metrology

The environmental management of coastal ecosystems, particularly zones which are involved in activities such as shellfish aquaculture, require ongoing efforts to understand both long-term and seasonal variations in coastal pH. The traceability of these measurements in the field is essential to sustaining effective management practices to support these important ecological and economical resources. Collaborative research projects which utilize metrological tools such as uncertainty analysis and interlaboratory studies will be highlighted to demonstrate the power of metrology in improving the measurement of oceanographic systems.

Listing of Significant Patents Awarded to Sylvia M. Stoesser

1,905,850 Synthetic Lubricant
1,969,678 Ferric Chloride Etching Solution
1,989,478 Solvent Composition
1,998,756 Treatment of Deep Wells
2,033,702 Heat Storage and Transfer Agent
2,033,934 Dehumidifying Solution
2,048,362 Treatment of Deep Wells
2,111,253 Inhibitor of Chlorinated Solvents
2,142,968 Stabilizing Articles Containing Polymerized Styrene
2,152,306 Method of Removing Metal Obstructions from Wells
2,154,389 Stabilization of Vinyl Compounds
2,166,557 Coating Compositions
2,174,538 Polystyrol Coating Compositions
2,175,095 Treatment of Wells
2,181,102 Stabilization of Polymerizable Vinyl Compounds
2,187,695 Polystyrol Composition
2,190,906 Styrene-Tung Oil Copolymer
2,190,915 Copolymers of Styrene with Oiticica Oil or its Derivatives
2,210,639 Treatment of Monomeric Styrene
2,215,255 Stabilization of Styrene
2,232,930 Polystyrene Synthetic Resins
2,241,770 Stabilization of Styrene and Related Compounds
2,246,020 Treatment of Styrene with Copper
2,269,810 Resinous Co-Polymers of Vinyl Aromatic Hydrocarbons
2,274,297 Method of Treatment Earth and Rock Formations
2,290,547 Styrene Polymer

Previous Stoesser Lectures

2019 Dr. Esther Tristani - Burt's Bees
2018 Dr. Linda McGill-Boasmond - Cedar Concepts Corporation
2017 Dr. Gayle Schueller - 3M Company
2016 Dr. Kathrin U. Jansen - Pfizer, Inc.
2015 Dr. Nancy B. Jackson - U.S. Department of State
2014 Dr. Rina Dukor - BioTools, Inc.
2013 Dr. Ann E. Weber - Merck Research Laboratories
2012 Dr. Catherine T. Hunt - The Dow Chemical Company
2011 Dr. Victoria F. Haynes - RTI International
2010 Dr. Jennifer Holmgren - UOP, LLC
2009 Dr. Ellen B. Stechel - Sandia National Laboratories
2008 Dr. Sarah E. Kelly - Pfizer Global Research &Development
2007 Dr. Madeleine Jacobs - American Chemical Society
2006 Dr. Marquita M. Qualls - GlaxoSmithKline
2003 Dr. Lynn Schneemeyer - National Science Foundation
2002 Dr. Joan B. Berkowitz - Farkas, Berkowitz & Company (FBC)
2001 Dr. Valerie J. Kuck - Bell Laboratories, Lucent Tecnologies
2000 Dr. Roberta L. Dorow - Pharmacia Upjohn