

The Walter A. Szarek Lecture Series

Walter A. Szarek was born on April 19, 1938 in St. Catharines, Ontario. He received his B.Sc. in Honours Chemistry in 1960, and his M.Sc. in 1962, from McMaster University. In 1962 he began studies towards the Ph.D. Degree with Professor J. K. N. Jones at Queen's University; he completed his studies in 1964 in the area of carbohydrate chemistry. He then went on to do postdoctoral work with Professor Melville L. Wolfrom who had developed the outstanding school of carbohydrate chemistry at The Ohio State University, Columbus, Ohio. Within a year he was offered the position of Assistant Professor of Biochemistry in the Department of Physiology and Biochemistry at Rutgers University in New Jersey. After launching his independent research program, but longing to be part of a Chemistry Department, in 1967 he returned to Queen's as Assistant Professor of Chemistry where he rose through the ranks to Full Professor in 1976. During the period 1976–1985 he was also Director of the Carbohydrate Research Institute at Queen's. In 2003 he became Professor Emeritus, and continued to be very active in research for several years. Professor Szarek's outstanding achievements in carbohydrate chemistry were recognized by the receipt of the American Chemical Society Claude S. Hudson Award in 1989 and the Melville L. Wolfrom Award in 1992.

Professor Szarek's research in carbohydrates was truly comprehensive, encompassing many diverse aspects, both chemical and biological. His knowledge was encyclopedic and he quickly became known as The Godfather of the carbohydrate family and The Prince of hospitality. In addition, he had a very active research program in the areas of Medicinal Chemistry and Drug Development. He is the author of over 300 peer-reviewed publications and has held numerous patents in the areas of Alzheimer's Disease, Cancer, Malaria, Anti-bacterial Agents, and therapeutic drugs for the treatment of chronic and acute pain. He was a co-founder of Neurochem, Inc. (now Bellus Health, Inc.) and was associated with PainCeptor Pharma Corp., and Osta Biotechnologies, Inc.

Professor Szarek was, at all times, a principled educator at both the undergraduate and graduate levels, having won four teaching awards including the Queen's University Arts and Science Undergraduate Teaching Excellence Award in 1989. His distinguished research career involved the direction of 23 M.Sc and 32 Ph.D. students, and ~85 postdoctoral fellows. His caring and insightful mentorship both in chemistry and in life evoked in his students, postdoctoral fellows, and colleagues, great respect and affection.

The Walter A. Szarek Lecture Series was established through an endowment initiated by a former student, B. Mario Pinto, and with generous contributions from past students, postdoctoral fellows, and colleagues. It is testament to his profound influence on the next-generations of scientists. A substantial donation was also made by the Szarek family in memory of Professor Szarek's brother, John.

PREVIOUS WALTER A. SZAREK LECTURERS

2024 • *M. Huang*

2022 • *J. Kohler*

2022 • *T. Lowary*

2019 • *L. Kiessling*

2018 • *F. Stoddart*



The Department of Chemistry, Queen's University

is honoured to host the 2025
Walter A. Szarek Lecture:

Dr. David Vocadlo
Simon Fraser University

"Chemical biology tools for
probing and perturbing
carbohydrate processing
enzymes in mammalian
systems."



Friday, April 4, 2025

11:30 AM

Room 117, Chernoff Hall

DR. DAVID VOCADLO



David Vocadlo
Simon Fraser University
Distinguished Professor

Professor **David Vocadlo** completed his PhD at the University of British Columbia in 2002 with Steve Withers. He was a Canadian Institutes of Health Research (CIHR) postdoctoral fellow at the University of California at Berkeley in the Departments of Chemistry and Molecular and Cell Biology with Carolyn Bertozzi. In 2004, he joined Simon Fraser University (SFU), where he is now a professor in the Departments of Chemistry and Molecular Biology & Biochemistry and Distinguished University Professor in Chemical Biology. He leads a research team focused on developing chemical biology tools and using these to advance understanding the roles of glycoconjugates in health and disease. He is an inventor on over 30 families of patents and several technologies have been out-licensed from his SFU laboratory. His team pioneered the creation and preclinical validation of OGA inhibitors for neurodegenerative diseases, a strategy now advanced into clinical trials where they ultimately showed protection against neurodegeneration in Alzheimer Disease. Vocadlo has been recognized with various awards including the EWR Steacie Memorial Fellowship, the Horace Isbell Award of the American Chemical Society, and the Royal Society of Canada. He is an Associate Editor at ACS Chemical Biology and Co-Founder and Chief Scientific Officer of Alectos Therapeutics.

SELECTED HONOURS & AWARDS

- 2024 Fellow of the Royal Society of Canada
- 2023 Distinguished University Professor
- 2018 Bernard Belleau Award - Canadian Chemical Society
- 2014 Canada Research Chair
- 2013 Horace Isbell Award - American Chemical Society

RECENT PUBLICATIONS

- Deen MC, Zhu Y, Gros C, Na N, Gilormini P-A, Shen DL, Bhosale S, Anastasi N, Wang R, Shan X, Harde E, Jagasia R, Lynn FC, Vocadlo DJ. A versatile fluorescence-quenched substrate for quantitative measurement of glucocerebrosidase activity within live cells. *Proc. Natl. Acad. Sci., USA.* 2022 119: e2200553119.
- Cecioni S, Ashmus RA, Gilormini P-A, Zhu S, Chen X, Shan X, Gros C, Deen M, Wang Y, Britton R, Vocadlo DJ Quantifying lysosomal glycosidase activity within cells using bis-acetal substrates. *Nat Chem Biol.* 2022, 18: 332-341.
- Gilormini PA, Thota N, Fers-Lidou A, Ashmus RA, Nodwell M, Brokerman J, Kuo CW, Wang Y, Gray TE, Nitin, McDonagh AW, Ertunc N, Yeo D, Zandberg W, Khoo KH, Britton R, Vocadlo DJ. A simple metabolic inhibitor blocks cellular fucosylation and enables production of afucosylated antibodies. *Proc. Natl. Acad. Sci., USA* 2024. 121, e2314026121