

*Dr. Raphael Martin Ottenbrite & Nancy Ottenbrite*  
*Lecture Series in Chemistry and Biochemistry*

## **“Toward Minimizing Adverse Events for Silicone Medical Devices”**

*presented by*

Dr. Kenneth J. Wynne

**Friday, April 14, 2023  
3:00-4:00pm**

Assumption Auditorium  
2<sup>nd</sup> floor, Assumption Hall  
University of Windsor

Reception to Follow  
Hot & Cold Hors d'oeuvres & Cash Bar

A ticket is required for this event.  
Please email [ChemBio@uwindsor.ca](mailto:ChemBio@uwindsor.ca)  
or visit Essex Hall 273-1 to receive a  
*complimentary* ticket.

Business Casual Dress is Requested



University  
of Windsor  
Faculty of Science



Dr. Raphael Martin Ottenbrite, Professor Emeritus, Virginia Commonwealth has strong ties to the University of Windsor, earning three degrees (BSc, MSc, PhD) here. This is also where he met the love of his life, Nancy with whom he shared a 57-year marriage after proposing to her in the Assumption Hall Chapel.

Dr. Ottenbrite (Ray) was the Founder and Director of the VCU Center for Industrial Polymer Research. He was the founding member of Frontiers on Biomedical Polymers. He created and was the Editor-in Chief of the Journal of Bioactive and Compatible Polymers from 1985 to 2015. Dr. Ottenbrite published over 250 journal papers. He has over 30 patents. He edited or credited 23 polymer related books. He developed high temperature polymers for spacecraft and received five citations from NASA. He co-invented antimicrobials that are effective against SARS. He mentored and encouraged post-doctoral students from Italy, England, Germany, Japan, China, Korea and the U.S.

In 2015, Dr. Ottenbrite received the Alumni Association Award of Merit from the University of Windsor for distinguished accomplishments that have brought honor to the university. Dr. Ottenbrite was elected to the American Institute for Medical and Biological Engineering and was made a Fellow in the American Chemical Society.

His professional memberships included the Polymer Chemistry Division of the ACS where he was elected Treasurer, Vice Chairman, Chairman and the National Program Chair as well as serving on the International Relations Committee. He was involved in the International Biorelated Polymers Symposium, serving on the Executive Committee. He was elected to lead the Gordon Conferences at two meetings in the U.S.

Ray was also a natural athlete who enjoyed many sports, including basketball, hockey, golf and skiing. He delighted in swimming and snorkeling at The Great Barrier Reef. He had a passion for sailing with a favourite memory being helping to crew on the Stars and Stripes in California (the boat that had just won the America's cup). Ray was known for his friendships and kindness.

# Toward Minimizing Adverse Events for Silicone Medical Devices

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Biomedical grade silicone, especially platinum cured poly (dimethylsiloxane), PDMS, is used in a broad range of medical devices because of ease of processing, biocompatibility and biodurability. Examples of devices comprised of “implantable” grade silicone elastomers range from urinary catheters and urethral stents to Ear/Nose/Throat (ENT) devices such as airway stents and ventricular shunts. PDMS has a hydrophobic surface that elicits a foreign body reaction. It is susceptible to adhesion of bacteria and/or fungi, the growth of biofilms, and other forms of biofouling. Consequently, a range of Adverse Events (AEs) can occur depending on the duration of implantation, the location in the body, and the disease state of the patient. In this presentation, surface modification is described aimed at mitigation of Catheter Associated Urinary Tract Infections (CAUTI). These infections are common in hospitals and health care facilities. A list of those susceptible to CAUTIs includes those who are disabled and the elderly and infirm with longer catheter indwelling times. Research is described for surface modification designated WG-1 silicone, which affects contact kill of bacteria. *In vitro* tests have been developed to provide an understanding of antimicrobial effectiveness and suitability of WG-1 for a device designation by FDA Office of Combination Products.

\*Support is gratefully acknowledged for SBIR grants from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK, Award Number R44DK103398) and the National Heart, Lung, and Blood Institute (NHLBI, Award Number 5R44HL142391-03). The content of this presentation is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health.



*Did you travel from a far distance,  
or did you join us from just around the corner?*

*However you arrived and from wherever you came,  
we would like to personally  
thank you for joining us here today.*

*Today's seminar is the first of the annual  
Dr. Raphael Martin Ottenbrite & Nancy Ottenbrite  
Lecture Series in Chemistry and Biochemistry.*

*Thank you.*



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