

## HARRISON— MACRAE FAMILY LECTURE

The Harrison – MacRae Family Lecture Series was established through the generosity of the estate of the late John H. Harrison (Queen's B. Comm., 1949) and Elizabeth (Betty) Harrison (nee MacRae, Queen's B.A., 1949). For over a century the Harrison - MacRae family has attended Queen's University and has shown a distinct enthusiasm for the arts and sciences. Elizabeth Harrison is the daughter of Queen's graduates Alex E. MacRae (B.Sc. Chem. Eng., 1914) and Irene McAllister (B.Sc. Math & Physics, 1914), and sister to Queen's graduates Jean C. Doherty (B.A. 1939), Donald I. Beattie (B.A. 1939), Marion E. Bradley (B.A. 1946), and brother Robert A. MacRae (B.Sc. Chem. Eng., 1954). Their son Ian Harrison (Queen's B.Sc. Chem. Phys., 1981) is a Professor of Chemistry at the University of Virginia. Numerous children, grandchildren and great grandchildren have likewise attended Queen's University. In recognition of their long affinity for Queen's, this lecture series will feature seminars by distinguished scientists on topics within the fields of chemical physics or physical chemistry.

## SELECTED RECENT PUBLICATIONS

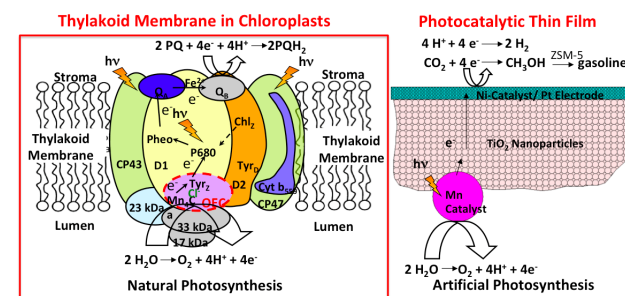
- J. Chem. Theory Comput. 13: 6000–6009 (2017) Electron Transfer Assisted by Vibronic Coupling from Multiple Modes, by Subhajyoti Chaudhuri, Svante Hedström, Dalvin D. Méndez-Hernández, Heidi Phillips Hendrickson, Kenneth Albert Jung, Junming Ho, and Victor S. Batista.
- J. Phys. Chem. C 121: 19053-19062 (2017) Charge Transport and Rectification in Donor-Acceptor Dyads, by Svante Hedström, Adam J. Matula, Victor S. Batista.
- Nat. Mater. 16: 1216–1224 (2017) Robust Resistive Memory Devices Using Solution-Processable Metal-Coordinated Azo Aromatics, by Sreetosh Goswami, Adam J. Matula, Santi P. Rath, Svante Hedström, Surajit Saha, Meenakshi Annamalai, Debabrata Sengupta, Abhijeet Patra, Siddhartha Ghosh, Hariom Jani, Soumya Sarkar, Mallikarjuna Rao Motapothula, Christian A. Nijhuis, Jens Martin, Sreebrata Goswami, Victor S. Batista, and T. Venkatesan.
- Proc. Natl. Acad. Sci. USA 114: 3578-3583 (2017) Ultrathin Dendrimer-Graphene Oxide Composite Film for Stable Cycling Lithium-Sulfur Batteries, by Wen Liu, Jianbing Jiang, Ke R. Yang, Yingying Mi, Piranavan Kumaravadivel, Yiren Zhong, Qi Fan, Zhe Weng, Zishan Wu, Judy J. Cha, Henghui Zhou, Victor S. Batista, Gary W. Brudvig and Hailiang Wang.
- J. Am. Chem. Soc. 139: 16028–16031 (2017) Protospacer Adjacent Motif-Induced Allostery Activates CRISPR-Cas9, by Giulia Palermo, Clarisse G. Ricci, Amendra Fernando, Rajshekhar Basak, Martin Jinek, Ivan Rivalta, Victor S. Batista, and J. Andrew McCammon.



Department of Chemistry  
Queen's University

is honoured to host the  
2018 Harrison—MacRae  
Lecturer:

Prof. Victor S. Batista  
Yale University



“Converting Water into Fuel:  
Natural and Artificial  
Photosynthesis”

Friday, February 9, 2018  
11:30 AM  
Room 117, Chernoff Hall

## PROF. VICTOR S. BATISTA



Victor S. Batista  
Professor of Chemistry  
Senior Editor, J. Phys. Chem.  
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New Haven, CT 06520, U.S.A.

**Victor S. Batista** was brought up in Buenos Aires, Argentina, and received his Licenciado en Ciencias Químicas (B. Sc. in Chemistry) degree from the Facultad de Ciencias Exactas y Naturales (FCEyN) de la Universidad de Buenos Aires (University of Buenos Aires) in 1989.

In 1991 he moved to the United States and received his PhD degree in Chemistry from Boston University in 1996, where he also received the Sugata Ray Award in 1995 working under the mentorship of Prof. David F. Coker on the development of theoretical and computational methods to investigate photochemical reaction dynamics in the condensed phase. Following two postdoctoral research programs, working on semiclassical methods with Prof. William H. Miller at the University of California, Berkeley (1997–1999) and coherent-control techniques with Prof. Paul Brumer at the University of Toronto (2000–2001), he joined the Yale faculty as an Assistant Professor of Chemistry in 2001, where he became Associate Professor of Chemistry in 2005 and Director of Undergraduate Studies 2008–2010, and Professor of Chemistry since 2008. He has published 235 articles (h index=52, citations=7671).

His research interests include the development and application of semiclassical and quantum dynamics methods for studies of excited state reaction dynamics and relaxation phenomena in polyatomic systems and semiconductor materials for solar-to-electric energy conversion and photocatalysis, as well as the development of quantum mechanics/molecular mechanics computational methods to study ligand binding interactions and reactivity in biomolecules, with emphasis on photoreceptors, olfactory receptors, allosteric mechanisms and water-splitting in photosystem II.

## SELECTED HONOURS & AWARDS

- Innovation Award from Research Corporation (2002)
- Hellman Family Junior Faculty Award from Yale University (2002)
- Petroleum Research Funds Award G6 from the American Chemical Society (2002)
- Career Award from the National Science Foundation (NSF) (2004)
- Nanoscale Exploratory Research Award from NSF (2004)
- Camille Dreyfus Teacher-Scholar Award (2005)
- Alfred P. the Sloan Fellow (2005–2006)
- Baker Lecture (Cornell University, 2016)
- In addition, Dr. Batista has been co-chair of the GRC Vibrational Spectroscopy conference (2016), and co-organizer of the TSRC Workshop in Alternative Energy (2014 and 2016). He is a member of the American Chemical Society, the American Physical Society, and the Biophysical Society, Senior Editor of The Journal of Physical Chemistry since 2011.