

## 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), Donalda 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.

## PREVIOUS HARRISON- MACRAE LECTURERS

- 2019 • P. Willis
- 2019 • C. Adachi
- 2018 • B. Bayram
- 2018 • V. Batista
- 2016 • A. Aspuru-Guzik

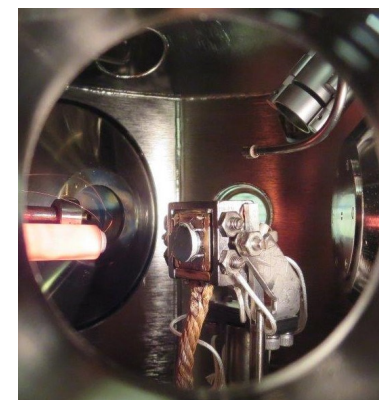


### Department of Chemistry Queen's University

is honoured to host the  
2019 Harrison—MacRae  
Lecturer:

Dr. Ian Harrison

Dept. of Chemistry  
University of Virginia



"Alkane Reaction Dynamics  
at Metal Surfaces"

Friday, March 29, 2019  
11:30 AM  
Room 117, Chernoff Hall

## PROF. IAN HARRISON



Ian Harrison  
Department of Chemistry  
University of Virginia

**Professor Ian Harrison** earned a B.Sc. degree in Chemical Physics from Queen's University in 1981. His Ph.D. work with John Polanyi at the University of Toronto examined adsorbate photochemical dynamics on LiF insulator surfaces. After an NSERC postdoctoral fellowship at Berkeley with Gabor Somorjai, Harrison joined the Chemistry faculty at the University of Virginia in 1989. He was the Director of the NSF Integrative Graduate Education and Research Traineeship program on the "Science and Engineering of Laser Interactions with Matter" from 1999-2006, was Chairman of UVa's Chemistry Dept. from 2003-8, and has thereafter served as its Director of Graduate Studies. Harrison's research focuses on characterizing and modeling the kinetics and dynamics of thermal and photochemically induced chemistry at catalytic metal surfaces. Key goals are to characterize the transition states of energy-related gas-surface reactions and to develop improved understanding of how to design efficient & selective thermal and photochemically driven catalysts.

## SELECTED RECENT PUBLICATIONS

- S. B. Donald, J. K. Navin, and I. Harrison, "Methane dissociative chemisorption and detailed balance on Pt(111): Dynamical constraints and the modest influence of tunneling", *J. Chem. Phys.*, **139**, 214707 (2013)
- S. B. Donald, and I. Harrison, "Rice-Ramsperger-Kassel-Marcus Simulation of Hydrogen Dissociation on Cu(111): Addressing Dynamical Biases, Surface Temperature, and Tunneling", *J. Phys. Chem. C*, **118**, 320-337 (2014)
- J. K. Navin, S. B. Donald, and I. Harrison, "Angle-Resolved Thermal Dissociative Sticking of Light Alkanes on Pt(111): Transitioning from Dynamical to Statistical Behavior", *J. Phys. Chem. C* **118**, 22003-22011 (2014)
- V. Johánek, G. W. Cushing, J. K. Navin, and I. Harrison, "Real-time observation of graphene oxidation on Pt(111) by low-energy electron microscopy", *Surf. Sci.* **644**, 165-169 (2016)
- S. Ma, Z. Zhang, I. Harrison, "Photoreduction of Hydrogen Cations on TiO<sub>2</sub> and Its Impact on Surface Band Bending and the Charge Carrier Recombination Rate: A Photoluminescence Study Under High Vacuum Conditions" *J. Phys. Chem. C* **122**, 8288-8294 (2018)