

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

2024 • *I. Cooke*

2024 • *O. Isayev*

2020 • *U. Schollwöck*

2019 • *I. Harrison*

2019 • *P. Willis*

2019 • *C. Adachi*

2018 • *B. Bayram*

2018 • *V. Batista*

2016 • *A. Aspuru-Guzik*

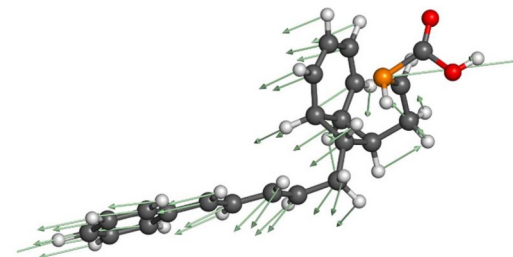


Department of Chemistry
Queen's University
and
Department of Physics,
Engineering Physics and
Astronomy

is honoured to co-host the
2026 Harrison—MacRae
Lecturer:

Markus Reiher
ETH Zürich

"Bridging Orthogonal
Worlds: Computational
Chemistry as a Trading
Zone between Quantum
Foundations and Big Data"



Monday, October 5, 2026
11:30 AM
Room 117, Chernoff Hall

PROF. MARKUS REIHER



Prof. Markus Reiher
ETH Zürich
Inst. Mol. Phys. Wiss.

Dr. Markus Reiher received his PhD from the University of Bielefeld in 1998 where he worked with Juergen Hinze on relativistic atomic structure theory. His subsequent habilitation in theoretical chemistry at the University of Erlangen with Bernd Artur Hess was accepted 2003 and described work on bioinorganic chemistry, vibrational spectroscopy, and relativistic quantum chemistry from a systems chemistry perspective. From October 2003 until March 2005 he was Privatdozent at the University of Bonn, before he took up a position as associate professor for physical chemistry (designation: theory) at the University of Jena in April 2005. Since February 2006, he has been a professor for theoretical chemistry at ETH Zurich.

His research is devoted to theoretical chemistry in the broadest sense. The main focus has been on the development of theory and algorithms for the calculation of electronic and vibrational structures, their properties and spectroscopy, based on the first principles of quantum mechanics. Within the last decade, he has become interested in quantum computing (following his notorious 2016 work with Microsoft Quantum on the nitrogenase problem), machine learning for uncertainty quantification and potential energy surface representation, and automated reaction mechanism exploration.

SELECTED HONOURS & AWARDS

- Golden Owl for Best Teaching Award (2010)
- Elected member of the International Academy of Quantum Molecular Science (2022)
- Corresponding member of the Danish Academy of Sciences and Letters (2026)

RECENT PUBLICATIONS

- D. Castaldo, M. Reiher, Utility-Scale Quantum Computational Chemistry, J. Phys. Chem. Lett. 17 (2026) 8140.
- T. Stroschein, M. Reiher, After 100 Years of Quantum Mechanics: Toward a Constructive Observation-Centered Perspective, J. Chem. Theory Comput. 22 (2026) 6268.
- R. T. Husistein, M. Reiher, A New Paradigm for Computational Chemistry, (2026) arXiv:2604.01360.