The Michael Baird Lecture Series

The Michael Baird Lecture Series was established in 2017, the Golden Anniversary of Mike's arrival at Queen's, through generous donations from former students.

Mike was raised in Dundas, Ontario, and obtained an Hon. B.Sc. in Chemistry from McMaster University (where he also won several OUAA and CIS intercollegiate sprint championships). He completed his Ph.D. within three years at the University of Toronto, and then spent two extremely productive postdoctoral years with Sir Geoffrey Wilkinson (1973 Nobel Prize) at Imperial College, London. He joined the faculty at Queen's in 1967.

Mike has carried out research on many aspects of organometallic chemistry and catalysis, publishing over 275 papers and ten patents. He has received almost every national award for scholarship in his field including the Alcan Lecture Award, the Catalysis Award and the Catalysis Lectureship Award of the Chemical Institute of Canada. He was elected to Fellowships of the Chemical Institute of Canada and the Royal Society of Canada, and received the Queen's University Prize for Excellence in Research in 1998. Mike was elected to the McMaster University Sports Hall of Fame and received the 2015 McMaster University Distinguished Alumni Award.

Mike Baird is a much respected teacher who guided about 90 graduate students and 25 postdoctoral fellows. He has taught literally thousands of undergraduate students at all levels, of whom about 350 were introduced to research in his laboratory. As a result, Mike received the Chemistry Department Student Council Prize for Excellence in Teaching five times.

The Baird Lecture Series represents a fine legacy to the Baird career, and the Department thanks former Baird group members Helen Ferkul (M.Sc. '81) and Will Rogers (Ph.D. '80) for organizing the funding drive.

SELECTED RECENT PUBLICATIONS

M. Xu, A.R. Jupp, D.W. Stephan, Phosphorus-acyl Anions from Reactions of K[$PtBu_2$] and CO, ***Angew. Chem. Int. Ed.*** **2019**, 58,3548–3552. doi.org/10.1002/anie.201814562.

M. Xu, A. R. Jupp, Z-W. Qu, S. Grimme, D.W. Stephan, Alkali-Metal Species in The Reversible Activation of H_2 ***Angew. Chem. Int. Ed.*** **2018,** 57, 11050–11054; HYPERLINK "https://doi.org/10.1002/anie.201806849" doi.org/10.1002/anie.201806849

L. Fan, A.R. Jupp, D.W. Stephan, Remote Stereochemistry of a Frustrated Lewis Pair Provides Thermal and Photochemical Control of Reactivity, ***J. Am. Chem. Soc.*** **2018**, 140, 8119–8123 DOI: 10.1021/jacs.8b05176

J. Zhou, L.L. Liu, L.L. Cao, D.W. Stephan, The η^5-Pentamethylcyclopentadienyl Phosphorus Dication: $[(\eta^5\text{-Cp*})P]^{2+}$: A Phosphorus Super Acid, ***CHEM***, **2018,** 4, 2699–2708. DOI: HYPERLINK "http://dx.doi.org/10.1016/j.chempr.2018.08.038" 10.1016/j.chempr.2018.08.038. (highlighted in Chemistry World: https://www.chemistryworld.com/news/rare-phosphorus-dication-synthesised/3009617.article).

C. Tang, Q. Liang, A.R. Jupp, T.C. Johnstone, R.C. Neu, D. Song, S. Grimme, D.W. Stephan, 1,1-Hydroboration and Borane Adduct of Diphenyldiazomethane: A Prelude to FLP-N_2 Chemistry? ***Angew. Chem. Int. Ed.*** **2017, *56*,** 16588-16592 (Highlighted in *Angew. Chem.* as VIP)

L. Liu, L.L. Cao, Y. Shao, G. Ménard and D.W. Stephan, A Radical Mechanism for Frustrated Lewis Pair Reactivity, ***CHEM,*** **2017**, 3, 259-267. *(invited cover)*

Queen's Chemistry

The Department of Chemistry, Queen's University

is honoured to host the 2019 Baird Lecture:

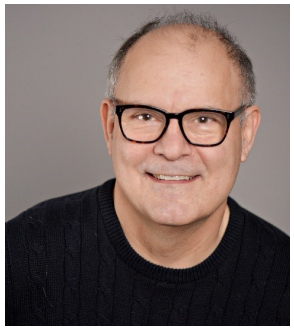
Douglas W. Stephan
University of Toronto

"New Directions in FLP Chemistry"

Friday, October 25, 2019
11:30 AM

Room 117, Chernoff Hall

DR. DOUGLAS W. STEPHAN



Douglas W. Stephan
Department of Chemistry
University of Toronto
80 St. George Street
Toronto, ON
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Dr. Stephan attended McMaster University where he was awarded a Bachelor of Science degree in 1976, and the University of Western Ontario where he earned a PhD in 1980 for research investigating enantioselective synthesis. He was supervised by Nicholas C. Payne. After graduation, Stephan was held an NATO PDF with Dr. R.H. Holm at Harvard from 1980-1982. He was hired at the University of Windsor in 1982, and moved to the University of Toronto in 2008.

We are interested/working on projects, all of which fall under the prevue of metal-free catalysis. Much of this work stems from Science papers we published in 2006 and 2013 in which we demonstrated the first metal-free system capable of the reversible activation of H2 and the development of phosphonium-based catalysts. This work spawned the area now known as "frustrated Lewis pairs" (a term we coined) and has led to researchers around the world probing main group systems in catalysis.

Specific examples of projects include:
Main group catalysis for CO2 reduction. We are developing routes to the use of CO2 as a C1 source to produce desirable organic molecules. In our most recent success, we have developed indium catalyzed routes to ureas from CO2. We now targeting the synthesis of related polymers and other organic derivatives.
Catalytic Main group functionalization of C-F bonds. CF3 groups and CF bonds are often included in pharmaceuticals because of their inert/unreactive nature. We have developed main group catalysts that allow the functionalization of these fragments, offering an unprecedented avenue to late stage drug reactivity affording new routes to libraries of drug derivatives.
Main group hydrogenation catalysis. We have developed metal-free catalysts to hydrogenate a wide variety of organic substrates. Catalysts are now being developed, targeting enhanced activity, functional group tolerance and economically viability.

SELECTED HONOURS & AWARDS

International Awards/Distinctions

- 2016-2019 Einstein Visiting Fellow, TU Berlin.
- 2015 World's Most Influential Scientific Minds (1 of 5 Cdn Chemists)
- 2015 Distinguished Adjunct Professor, King Abdulaziz University
- 2014-2016 Thomson Reuters Highly Cited Researcher (annually)
- 2014 Applied Catalysis Award (Royal Society of Chemistry, UK)
- 2014 Corresponding Member of North-Rhein-Westfaelia Academy of the Sciences & Arts
- 2013 Fellow of The Royal Society (London, UK)
- 2012 Ludwig Mond Award (Royal Society of Chemistry, UK)
- 2011 Humboldt Foundation Research Award Re-invitation (Forschungpreis)
- 2010 Fellow of the Royal Society of Chemistry (UK)

National Awards

- 2019 E.W.R. Steacie Award (Chemical Institute of Canada)
- 2019 John C. Polanyi Award (NSERC of Canada)
- 2014 Canadian Green Chemistry and Engineering Award
- 2014 CIC Medal (Chemical Institute of Canada)
- 2013 Henry Marshall Tory Medal (Royal Society of Canada)
- 2009-2011 Killam Research Fellowship