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Foreword

Richard (Rick) Francis Langler Memorial Issue

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This issue of the *Australian Journal of Chemistry* is a tribute to the life and work of Professor Richard Francis Langler who died on 3 February 2014 in Bedford, Nova Scotia. Rick was a dedicated and inspirational teacher, and a rigorous researcher and steadfast mentor, especially for undergraduate researchers at Mount Allison University. He was one of those rare professors who had an enormous impact on his students, scientifically and pedagogically driven by the most sincere passion for organic chemistry (Fig. 1.) Rick has published an impressive 129 papers over his academic career (35 in *Aust. J. Chem.*) and contributed to textbooks.[1–9] Rick's attention to scientific detail was complemented with his thorough, direct nature and dry sense of humour, and reflected in his ability to ask the pointed and important questions at any scientific gathering.

Rick was born in Sarnia, Ontario in 1945. In 1957, he received his honours degree in chemistry from Dalhousie University. He obtained his Master's degree in chemistry from the University of New Brunswick, working in the area of aminoheterocycles and bisnorquassin derivatives. In 1975, he received his doctorate from Dalhousie University, studying a new dithiochelate and the synthetic consequences of the sulfohaloform reaction. Rick spent time as a visiting lecturer at the University of Toronto before undertaking post-doctorate research at Dalhousie University. Rick was an Assistant Professor at Mount Allison University and Saint Mary's University, and, after tenure and Associate Professorship at the Florida Institute of Technology, he returned to Mount Allison for the remainder of his career. Rick spent more than 30 years (especially 7–12 pm on Friday nights) training undergraduate students in research areas ranging from organosulfur chemistry to molecular orbital theory and often resulting in first authorship on several papers before graduating. Rick last published in this Journal on implementing perturbational expressions for the development of a novel set of approaches to embedding.[7]

Papers for this issue have been contributed by many of Rick's former students, colleagues, and friends from all over the world. As a tribute to Rick, this issue covers research in various areas of organic and organometallic synthesis and structure determination as well as computation and catalysis (inorganic and enzyme). Rick's former student, Christopher Graves from Albright College, along with his research group, including several undergraduate researchers, synthesised and characterised several aluminum-amidate complexes and further demonstrated that the complexes were pre-catalysts for both the MPV reduction of carbonyls and the Oppenauer oxidation of alcohols.[10] Rick's former undergraduate research student, Stephanie MacQuarrie (Cape Breton University) and colleagues, including three undergraduate research students, report on the stabilisation and improved catalysis of the enzyme phenylalanine ammonium lyase.[11] Diane A. Dickie (University of New Mexico), another former student inspired by Rick's teaching and high standards, along with her colleagues describe their synthesis and characterisation of zwitterionic CS2 adducts of bis(dialkylphosphino) amines.[12] Catalytic asymmetric C–C formation implementing terminal alkyl-metal nucleophiles in tandem hydrometallation–isomerisation is reported by Stephen Fletcher and his research students from the University of Oxford.[13] Stephen obtained his undergraduate honours degree working in Rick's research laboratory developing potent antifungal disulfides. Stacey Wetmore, a former student and colleague of Rick's, along with her research team present an article characterising and analysing the interactions between the side chains of Ser and Cys and DNA or protein π–rings in nature.[14] Paul Hayes is another former undergraduate student inspired by Rick to follow an academic path and pursue scientific research. Along with his co-workers from the University of Lethbridge, Paul describes the synthesis and characterisation of several sterically hindered bis(phosphinimine) dibenzofuran ligands followed by zinc metalation.[15] It is appropriate that long-time colleagues of Rick's, Steve Westcott, Christopher Vogels, Andreas Decken, and Felix Baerlocher, in addition to several undergraduate researchers, conclude this memorial issue with an article on the synthesis, characterisation, and antifungal activity of eight new fluoro- and methoxy-substituted benzodiazaborines.[16]

Stephanie MacQuarrie earned her undergraduate degree from Mount Allison University in Sackville, New Brunswick, Canada, where she completed three years of undergraduate research and published eight research papers under her academic advisor Dr Richard Langler. After completing her B.Sc. degree, she went on to Virginia Polytechnic Institute and State University to do a Ph.D. in organic chemistry with Dr Paul Carlier. After receiving her Ph.D. in 2005, she accepted a post-doctoral position in Dr Cathleen Crudden's research group at Queen's University in Kingston, Ontario. In 2009, Dr MacQuarrie joined Cape Breton University in Nova Scotia and is now Associate Professor of Organic Chemistry. Her research is focused specifically in the area of organic materials, developing reusable, cost effective, and greener alternative organic and enzyme-based catalysts, and investigating properties of unique biomass.

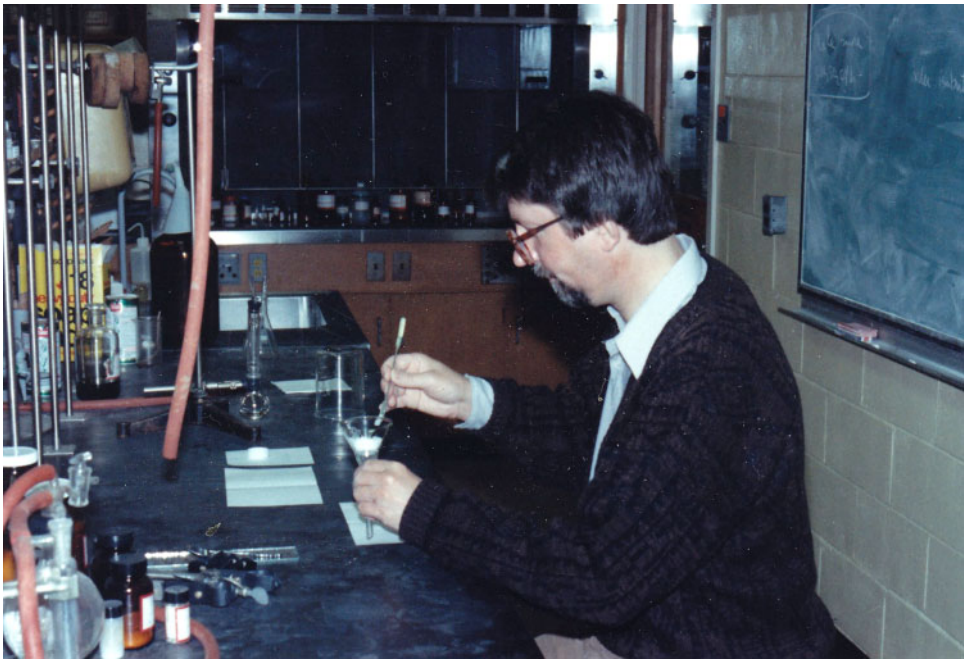

Fig. 1. Richard Langler working in his laboratory at Mount Allison University in the 1990s. Photo supplied by Roger Smith.

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