

Educational History

2009 – 2013 Post-doctoral Fellow, **Harvard University**, Cambridge, USA

Mary-Fieser Fellow (2009-2010), Nanoscale Science & Engineering Fellow (2011-2013)

Prof. George M. Whitesides group

- *Charge transport across self-assembled monolayers*: Demonstration that the 'odd-even effect' is due to interfacial sterics, and not electronic, properties of the molecules. Designed a study demonstrating that rectification observed in SAM-based junctions was due to the molecule and not the junction architecture.
- *Paper-based devices*: Developed hydrophobic paper devices by chemi-sorption for microfluidic devices. Microfluidic devices by embossing and stacking paper. Supported the development of 1D and 3D MEMS sensors and studies on paper-based 3D cell cultures.
- *CO₂*: Free electron solution-based one-electron coupling of CO₂ to oxalate.

2004 – 2008 PhD, **University of Iowa**. Iowa City, IA USA

- *Cascade reactions*: Developed "pot-in-pot" reactions based on selective flux across polymeric membranes to isolate incompatible solvents and reagents. Also, Occluded catalysts in polymeric membranes for use with incompatible solvents or reagents.
- *Ultra-large Polymers*: Synthesized maleimide derived ultra-large comb-block polymers (> 1 million g/mole). These polymers self-assemble into nanometer size rigid rods

2002 – 2004 MS, **Simon Fraser University**. Burnaby, BC Canada (Transferred to University of Iowa)

- *Chloro-amide rearrangements*: Investigated the conversion of α -chloroamides to ketones in bicyclo[2.2.1]heptanes systems. First closely correlated confirmation of Huckel's assumption on the absolute stereo-chemical configuration of (+)-norcamphor.

1996 – 2002 B.Ed(sc), MS, **Kenyatta University**. Nairobi, Kenya

- *Tsetse Fly allomones*: Developed stereo-selective routes to chiral δ -octalactones and investigated their effects on the host-seeking behavior of *G. morsitans morsitans*
- *Honors thesis*: Fractionation of three medicinal plants for anti-malarial compounds. Employed a bioassay guided approach that led to isolation of one active compound.

Professional Appointments

2013 – Present	Assistant Professor, University of Massachusetts for Green Chemistry (CGC), Department of Chemistry,	Center
Fall, 2008	Visiting Research Scholar, University of Iowa, Iowa City, IA Advisor: Prof. Leonard R. McGillivray	
2002	Research Associate, International Centre of Insect Physiology & Ecology (ICIPE), Nairobi, Kenya.	

Awards/Honors

2012	<i>Young Researcher on Advanced Materials</i> : International Unions of Materials Society (IUMRS-ICYRAM). Singapore, 2012 Invited speaker and Session Chair.
2008	<i>Lynn-Anderson award (Best research student in Chemistry)</i> , University of Iowa, Iowa City, IA
2008	<i>Best mentor</i> , Department of Chemistry, University of Iowa, Iowa City, IA