

Helen McNeill, PhD, FRSC
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EDUCATION

1993
Ph.D. in Molecular and Cellular Physiology
Stanford University, Stanford , California, USA

1985
B.Sc., Biology
Ramapo College of New Jersey, Mahwah, New Jersey, USA

CAREER SUMMARY

January 2018 – Present
Professor, Developmental Biology, Washington University School of Medicine, St. Louis, MO

January 2001 – 2018
Professor, Institute of Medical Science, University of Toronto

July 2010 – 2018
Professor, Department of Molecular Genetics, University of Toronto

September 2005 – 2018
Senior Investigator, Lunenfeld-Tanenbaum Research Institute, Sinai Health System, Mount Sinai Hospital

September 2005 – June 2010
Associate Professor
Department of Molecular Genetics, University of Toronto

September 1998 - August 2005
Head of Developmental Patterning Laboratory, London Research Institute (Imperial Cancer Research Fund), Cancer Research UK

1993 – 1998
Post Doctoral Fellow, Drosophila Genetics, Stanford University, Stanford, California, USA

HONORS AND AWARDS

<ul style="list-style-type: none"> ● 2019 - Larry and Carol-Ann Shapiro Professor, Washington University School of Medicine ● 2018 to Present – BJC Investigator, Barnes Jewish/Christian Hospital, Washington University School of Medicine ● 2017 – Fellow of the Royal Society of Canada, ● 2016 to 2023 – Canada Research Chair – CIHR Tier 1 Award, Government of Canada ● 2010 – The Lloyd S. D. Folger, Award for Research Excellence ● 2006 – Petro Canada Young Innovator’s Award, ● 1993 - Postdoctoral Fellowship, American Cancer Society 	<ul style="list-style-type: none"> ● 1991– Eloise Gerry Predoctoral Fellowship, Stanford University ● 1990 – Woods Hole Summer Student Tuition Scholarship, Marine Biology Laboratories ● 1990 – Katherine McCormick Fellowship, Stanford University ● 1985 – Women’s Leader Award, Ramapo College ● 1985 – President’s List, Ramapo College ● 1985 – Fellowship in Biomedical Research, New York Medical College ● 1982 to 1985 – Dean’s List, Ramapo College
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PROFESSIONAL SERVICE ACTIVITIES

<ul style="list-style-type: none"> ● 2022 – Co-Organizer, American Society of Nephrology – Developmental Sessions (Florida, Nov 2022) ● 2022 – Scientific Advisory Board, Institut Necker Enfants Malades, Paris, France ● 2022 Ad hoc NIH Dev2 ● 2021 Ad hoc NIH Dev1 ● 2021 – Open Competition XL program – Dutch Research Council – Panel member ● 2020 to Present - Co-director Graduate program in Developmental, Regenerative, Stem Cell Biology, WUSM ● 2020 Member review panel Cell Bio Dept, WUSM ● 2020 to Present - Member, PREMIER panel Model organisms to diagnose human disease ● 2020 to 2022 – Chair, Selection Committee for the UCSC/CSUMB IRACDA Program ● 2020 – Co-Organizer, Drosophila section TAGC, Allied Genetics Society ● 2018 to Present – Initiated and co-organized WUSTL monthly fly meetings: ● 2018 to 2023 – Chair, Review Committee of IRIC (Montreal, Canada) ● 2018 to 2023 – Medical Review Panel member: Gairdner Award, Canada ● 2019 to 2022 - Postdoc Liaison Developmental Biology Department ● 2019 to Present – Steering Committee Member, DRSCB 	<ul style="list-style-type: none"> ● 2019 to Present – Jakschich Award Committee Chair ● 2019 to Present – Boime Award Committee ● 2019 to 2021 – Hamburger Committee ● 2019 – DevBio Department Faculty Search ● 2019 to Present – Faculty Mentoring Committee WUSM ● 2019 to Present – Mentoring Committee: Physician Scientist WUSM ● 2019 to Present – Editorial Board, <i>Current Opinions in Cell and Developmental Biology</i> ● 2019 – Co-Organizer, PCP Satellite Symposium, Society of Developmental Biology ● 2017 to 2022 Member, Scientific Advisory Board, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany ● 2016 to 2022 – Co-Organizer, Drosophila “Crete” Meeting/EMBO Workshop ● 2016 to 2022 – Reviewer, ERC Grant Panel – LS3, Brussels, Belgium ● 2010 – Vice-Chair, “Eye Development” Meeting, Gordon Research Conference ● 2009 to 2012 – Member and Representative of Canada, North American Drosophila Board of Directors ● 2007 to 2013 - Editorial Board Member, <i>Developmental Dynamics</i> ● 2007 to 2013 – Director of Collaborative Program in Developmental Biology, University of Toronto
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MAJOR RESEARCH INTERESTS

The overall goal of my research is to understand how tissue growth and tissue organization are coordinately regulated. We use both fly and mouse models to capitalize on each system's strengths. One major question we ask is how Fat cadherins function in Hippo pathway regulated growth control, planar cell polarity and metabolism. Fat cadherins are enormous cell adhesion molecules that bind via cadherin-cadherin interactions to another large cadherin called Dachshous. We use *Drosophila* as a genetically tractable organism to investigate the basic and conserved mechanisms of Fat function and the control of Hippo pathway activity. We combine this with biochemical analysis of Fat-cadherins in both *Drosophila* and tissue culture and explore the relevance of our finding to mammalian health with mouse models of Fat cadherins. More recently we have become fascinated by a poorly understood family of Nuclear Envelope Membrane Proteins (NEMP). By generating and characterizing null alleles in flies, zebrafish, worms and mice we discovered that NEMP supports metazoan fertility. We found that NEMP has a germline-specific function in fertility in flies and mice. Currently we are exploring NEMP function in chromatin organization and nuclear envelope stiffness and are collaborating with physicians to explore how NEMP1 impacts human fertility.