

Mentor-Postdoc Spotlight Series 2018



Dr Myriam Hemberger

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With over 20 years of research experience, Dr. Hemberger's scientific career in research started with a PhD training at the University of Freiburg and Max-Planck Institute for Molecular Genetics, Germany, under the mentorship of Prof. Reinald Fundele. Her thesis topic, entitled "*Genetic and molecular approaches to identify placental genes*", was focused on identifying and characterizing novel genes that are involved in normal placental development and in particular in trophoblast invasion.

After obtaining her PhD from Germany, Dr. Hemberger moved to the Samuel Lunenfeld Institute in Toronto and then the University of Calgary, Canada, to work as postdoctoral fellow under the mentorship of Prof. James Cross where she studied some of the unique molecular characteristics of trophoblast stem cells.

With almost 90 publications in high-impact journals, Dr. Hemberger's current research is centered on the **genetics and epigenetics of placental development**, identifying molecular mechanisms governing placental development and how placental abnormalities affect embryonic growth and survival. Her research lies at the intersection of stem cell and developmental biology. A key topic of her lab is aimed at elucidating the transcriptional and epigenetic frameworks that regulate self-renewal and differentiation of trophoblast stem cells, an area where they have made a number of prominent contributions to the field over the years. They use a combination of state-of-the-art approaches in molecular biology and mouse genetics, proteomics, sequencing technology, epigenetics/epigenomics and chromatin biology to advance our understanding of the molecular processes underpinning development and pregnancy progression in health and disease.

The most important publication from the Hemberger lab is Placentation defects are highly prevalent in embryonic lethal mouse mutants, Perez-Garcia & Myriam Hemberger, [*Nature*](#). 2018 Mar 22;555(7697):463-468

Dr. Hemberger's advice to current and future postdocs: "*Pursue your passion for research and keep an open mind as to unexpected results!*"

Featured Postdoc



Dr. Stephanie Chrysanthou obtained her PhD from the University of Cambridge, Babraham Institute, under the mentorship of Dr. Myriam Hemberger. Her PhD thesis was titled “*The role of Tet proteins and 5-hydroxymethylcytosine in trophoblast stem cells*”. After her PhD, Dr. Chrysanthou continued as a postdoc with Dr. Hemberger and published her critical findings [A Critical Role of TET1/2 Proteins in Cell-Cycle Progression of Trophoblast Stem Cells] in [Cell](#).

Dr. Chrysanthou is currently a postdoc at the Department of Genetics, Albert Einstein College of Medicine and has a number of significant publications.

Please read “[Mechanisms Safeguarding the Trophoblast Multipotent State](#)” by Chrysanthou and Hemberger published in the July 2018 issue of Postdoc [Journal](#).

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