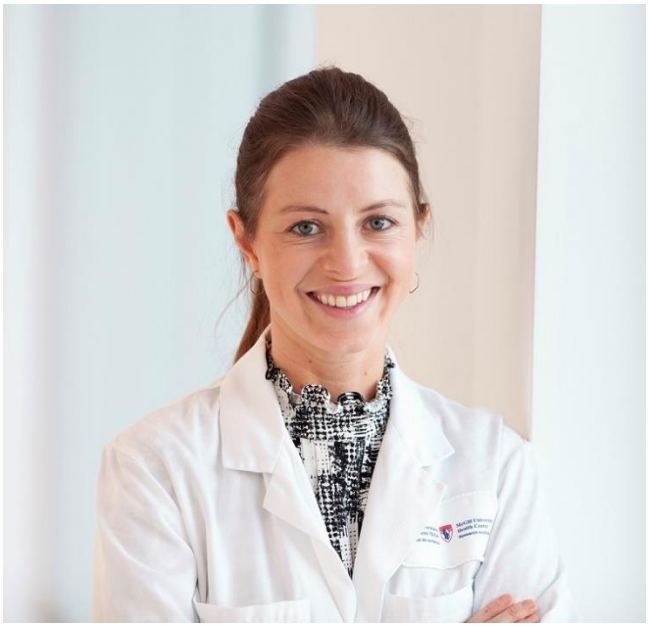
Focus on Faculty #60
Julia Burnier



Dr. Julia Burnier is an Assistant Professor in the Departments of Oncology and Pathology, and a full-time researcher in the Cancer Research Program of the McGill University Health Centre Research Institute (MUHC-RI). She is a new PI, having started her research program in 2018.

Born in São Paulo (Brazil), she came to Canada with her family in 1993, and feels very attached to Montreal. Julia knew she would pursue science from an early age. She began as a Physics major in University, with a particular interest in theoretical physics and mathematics, later pursuing a degree in the life Sciences at Queen's University. Her interest in cancer biology began when she joined the laboratory of Dr. Pnina Brodt (Experimental Medicine, McGill) and completed her PhD in 2010 in liver metastasis and the tumor microenvironment. She pursued post-doctoral training in cancer research at McGill, The Centre for Genomic Regulation (CRG) in Barcelona, and Princess Margaret Hospital in Toronto. At the CRG, her true love of 'omics blossomed, under Dr. Luis Serrano, both a wonderful scientist and mentor. There she learned how to integrate genomics and proteomics approaches into cell models of cancer. At Princess Margaret, she became especially interested in how we can use liquid biopsies to extract information from cancer patients and utilize them as biomarkers to monitor patients throughout their disease course.

In 2018, Julia returned to McGill and the MUHC-RI, and in the past two years has developed a research program in 'omics-based analyses of metastatic disease and liquid biopsy approaches to cancer, both at the basic science level and through multiple collaborations at the MUHC and internationally. She attributes any of her successes to these collaborations, working with wonderful colleagues to find new approaches to monitor cancer progression and ultimately to inform on clinical decision making. She leads several liquid biopsy initiatives at the MUHC-RI and is actively involved with international groups on circulating

tumor analysis and extracellular vesicle characterization. Her hope is that together we can create a liquid biopsy program that can be used clinically in routine patient care.

In the two years since starting her lab, Julia has recruited five wonderful graduate students and staff, who have all received external funding and multiple local and international awards. Several undergraduate students have also joined from both Montreal and International universities, making the lab a diverse group of talented young people. Julia also enjoys teaching several courses both at the undergraduate and graduate level and acting as a research mentor to the medical students.

Once a competitive athlete, Julia continues to play soccer year-round. She is an avid runner, especially enjoying the views on Mont Royal on her runs. Most importantly, with her husband Alex, her life (and heart) is full raising her two young girls, Sofia (6 years old) and Estela (3 years old), and soon expecting baby #3 (July 2020). In her not-so abundant spare time, Julia enjoys reading and her favourite books are the Spanish “Shadow of the Wind” series by Carlos Ruiz Zafón which remind her of her time in Barcelona.

A few publications to highlight her interests:

Tsering T, Laskaris A, Abdouh M, Bustamante P, Parent S, Jin E, Ferrier T, Arena G, **Burnier JV**. Uveal melanoma-derived extracellular vesicles display transforming potential and carry protein cargo involved in metastatic niche preparation. *Under review*. Journal of Extracellular Vesicles.

Lheureux S, Bruce JP, **Burnier JV**, Karakasis K, Shaw PA, Clarke BA, Yang SY, Quevedo R, Li T, Dowar M, Bowering V, Pugh TJ, Oza AM. Somatic BRCA1/2 Recovery as a Resistance Mechanism After Exceptional Response to Poly (ADP-ribose) Polymerase Inhibition. J Clin Oncol. 2017 Apr 10;35(11):1240-1249. Epub 2017 Feb 21. PMID: 28221868.

Kiel C, Ebhardt HA, **Burnier J**, Portugal C, Sabidó E, Zimmermann T, Aebersold R, Serrano L. Quantification of ErbB network proteins in three cell types using complementary approaches identifies cell-general and cell-type-specific signalling proteins. J Proteome Res. 2014 Jan 3;13(1):300-13. Epub 2013 Dec 9. PMID: 24313378.

Grünberg R, **Burnier JV**, Ferrar T, Beltran-Sastre V, Stricher F, van der Sloot AM, Garcia-Olivas R, Mallabiabarrena A, Sanjuan X, Zimmermann T, Serrano L. Engineering of weak helper interactions for high-efficiency FRET probes. Nat Methods. 2013 Oct;10(10):1021-7. Epub 2013 Sep 1. PMID: 23995386.