

Focus on Faculty #29

Mark Basik



[Dr. Mark Basik](#) is a general surgeon who was born in Montreal, graduated from McGill Medical school, completed a General Surgery Residency at the Université de Montréal and went on to do a four year Surgical Oncology Fellowship in Buffalo at the Roswell Park Cancer Institute. Here he fulfilled his dream of working in the laboratory on cancer biology, and has since been suffering from an incurable passion for research. He returned to the Université de Montréal as a surgical scientist, opening a laboratory working on the genetic instability of breast and colon cancer. With the discovery of microarrays and high-throughput genomic profiling, he returned to the US as a NIH Visiting Investigator at the National Human Genome Research Institute under the supervision of Dr. Olli Kallioniemi, to learn all he could about microarrays of all kinds including RNA microarrays, array CGH, tissue microarrays and even RNA interference microarrays.

Dr. Basik was recruited by the Jewish General Hospital (JGH) and the Lady Davis Institute to work as a breast cancer surgeon and the Director of the Cancer Genomics and Translational Research lab, using genomics (esp. Array CGH) to search for novel therapeutic targets in breast and colon cancer. Since his arrival at the JGH, his laboratory has been continuously peer-funded for research work on the discovery of novel molecular targets in breast and colon cancer, specifically focusing on the molecular factors of drug resistance. His work led to the discovery of a novel tumour suppressor gene in breast cancer, SPEN, whose function is still being understood. He was the PI of the Genome Quebec-funded Q-CROC-3 study, which involved the genomic analysis of pre and post-chemotherapy biopsies of triple negative breast cancer in order to uncover novel mechanisms of drug resistance. He has also worked on the characterization of carcinoma-associated fibroblasts in primary and metastatic breast cancer, and has more recently developed a patient-derived xenograft program at the JGH, focusing on the collection of drug-resistant breast cancers. Members of his laboratory have developed exciting novel models of drug resistance in breast cancer. He is also working on the development of novel diagnostics in breast cancer, with a special interest in circulating tumour DNA in early breast cancer, a project funded by the Quebec Breast Cancer Foundation.

In parallel, he has also developed a significant clinical research activity, becoming the co-chair of the NCI(US)'s Breast Oncology Local Disease Task Force in 2016. He has a particular interest in neoadjuvant breast cancer, and is the international PI of the BR005 trial, a phase II study to evaluate the accuracy of post-chemotherapy needle biopsy of the tumour bed to detect residual tumour burden in cases of complete clinical and imaging response to neoadjuvant chemotherapy. This study is the prelude to a larger study whose aim will be to test the necessity of performing surgery in patients deemed to have a complete or near-complete response to neoadjuvant chemotherapy.

Dr. Basik has had the good fortune to work with some very talented scientists, including Adriana Aguilar-Mahecha and Marguerite Buchanan, with the more recent addition of Catherine Chabot, Isabelle Sirois, Cathy Lan, Josiane Lafleur, Yirui Gui and Luca Cavallone. He has enjoyed mentoring graduate students and preparing future scientists, including clinician scientists, for research careers.

Besides his clinical and research work, Dr. Basik directs the Communion and Liberation Choir, which presents an Annual Christmas Concert at the Chapelle du Grand Séminaire as well as a cancer research fundraising concert at the Salle Bourgie (with Gregory Charles). This past year he completed the Ride to Conquer Cancer to Quebec City. He enjoys music, reading and especially hiking the Adirondacks and the Canadian Rockies.

We asked Dr. Basik to list a few of his articles whose work he is particularly proud or enjoyed the most. This is what he provided:

Légaré S, Cavallone L, Mamo A, Chabot C, Sirois I, Magliocco A, Klimowicz A, Tonin PN, Buchanan M, Keilty D, Hassan S, Laperrière D, Mader S, Aleynikova O, **Basik M**. The Estrogen Receptor Cofactor SPEN Functions as a Tumor Suppressor and Candidate Biomarker of Drug Responsiveness in Hormone-Dependent Breast Cancers. *Cancer Res.* 2015 Oct 15;75(20):4351-63

Aguilar-Mahecha S, Aguilar-Mahecha A, Lafleur J, Pelmus M, Seguin C, Lan C, Discepola F, Kovacina B, Christodoulopoulos R, Salvucci O, Mihalcioiu C, Roy JA, Robidoux A, Marcus EA, Batist G, **Basik M**. The identification of challenges in tissue collection for biomarker studies: the Q-CROC-03 neoadjuvant breast cancer translational trial experience. *Mod Pathol.* 2017 Jul 28. doi: 10.1038/modpathol.2017.82. [Epub ahead of print]

Basik M, Aguilar-Mahecha A, Rousseau C, Diaz Z, Tejpar S, Spatz A, Greenwood CM, Batist G. Biopsies: next-generation biospecimens for tailoring therapy. *Nat Rev Clin Oncol.* 2013 Aug;10(8):437-50. doi: 10.1038/nrclinonc.2013.101. Epub 2013 Jun 25. PMID:23799370