Focus on Faculty #96
Norma Ybarra

Norma Ybarra, PhD, joined the Gerald Bronfman Department of Oncology as an Assistant Professor in February 2017. She also is an Associate Member of the Medical Physics Unit as well as the Division of Experimental Medicine at McGill University and is a Junior Scientist at the Research Institute of the McGill University Health Centre.

Born in Jalisco, Mexico, Professor Ybarra obtained an undergraduate degree from Universidad Nacional Autónoma de México where she studied veterinary medicine and zootechnics. During this time, she had some excellent professors, and this inspired her to pursue a career in research. She obtained a scholarship from the government of Mexico to pursue graduate studies and came to Canada to do her master's degree in Veterinary Sciences (pharmacology) at the Faculty of Veterinary Medicine, University of Montreal where she was able to fast-track to a PhD. In 2011, she joined the Medical Physics Unit at McGill University, as a postdoctoral Research Associate under the supervision of Dr. Issam El Naqa and Dr. Jan Seuntjens. During this time, she became interested in alternative therapies that could reduce the side effects of radiotherapy, and her research focused on the use of an animal model to study the effects of mesenchymal stem cells in reducing radiation pneumonitis.

Her current research focuses on studying the effects of different natural compounds that target the metabolic dependencies of cancer cells, and therefore render cancer cells more sensitive to radiation. So far, she has published about the radioselective effects of a naturally occurring muscle-derived dipeptide, which selectively radiosensitizes non-small cell lung cancer cells, as exposure to this dipeptide resulted in a higher number of DNA double strand breaks (DSBs) in these cancer cells, without affecting or even reducing the number of DNA DSBs in normal cells *in vitro*. Her team has established an orthotopic lung cancer model to study the effects of this compound *in vivo,* and they are currently studying the effects of this and other compounds targeting metabolic dependencies of cancer cells on different cancer types commonly treated with radiotherapy.

Professor Ybarra teaches Radiobiology and Anatomy and Physiology for Medical Physics, as part of the master's degree program in Medical Physics. She supervises graduate students in the Division of Experimental Medicine and co-supervises graduate students in Medical Physics.

As an immigrant, Professor Ybarra is fully committed to help other immigrant women in science and therefore she recently joined the Win4Science Mentoring Program in the Pharmacology and Therapeutics Department at McGill University. This mentoring program aims to create a community that provides female role models and helps to establish networking opportunities among female scientists.

In her free time, Professor Ybarra likes to spend time with her family, exercise, and travel to different countries to learn about their culture. She also likes music and dancing.

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