

## Focus on Faculty #38

### Shirin Abbasinejad Enger



[Dr. Shirin Abbasinejad Enger](#) joined the Gerald Bronfman Department of Oncology as an Assistant Professor in August 2014. She is also an Associate Member of the Medical Physics Unit, the Department of Physics and the Department of Biomedical Engineering and is a Junior Scientist at the Research Institute of the McGill University Health Centre. She received her Ph.D. in Medical Physics at Uppsala University, Sweden, and her postdoctoral fellowship at Université Laval.

Dr. Enger's CFI, NSERC and CIHR funded research focuses on Novel Patient-Specific Brachytherapy and Detector Technology. By developing and introducing new radiation sources, radiation delivery systems, accurate dose calculation algorithms and *in vivo* radiation dosimeters, she aims to enable dose escalation in the tumours, increasing the tumour control probability, while simultaneously decreasing the dose to organs at risk, reducing toxicity which will increase the quality of life of the patients. Her research group is also investigating the difference in radiation damage between different radiation modalities, both experimentally through cell irradiation studies and theoretically through dosimetrical studies. Dr. Enger is a member of the Geant4-DNA developer team, which is an international research group based at CERN (European Organization for Nuclear Research), where software for DNA radiation damage is developed, and is a member of several international workgroups that establish guidelines and protocols for brachytherapy dosimetry.

Dr. Enger is an entrepreneur and innovator. As a graduate student she started a start-up company and has been involved in developing a commercial radiation detector and cyclotrons for producing positron emission tomography radioisotopes. During her time at McGill she has filed many reports of inventions and patents.

Dr. Enger was born in Ambe, a village in the Kurdish part of Iran, but grew up in Lindesberg, a small town in Sweden. When not working, she enjoys spending time with her family and friends. Her hobbies are painting and music. She paints with her daughter and plays the saxophone with her son. While on her own, she enjoys reading.

We asked Dr. Enger to list a few of her articles whose work she is particularly proud or enjoyed the most. This is what she provided:

Mann-Krzisnik DW, Verhaegen F, **Enger SA**. “The influence of tissue composition uncertainty on dose distributions in brachytherapy”, *Radiotherapy and Oncology*. 126(3):394-410 (2018).

DeCunha J, **Enger SA**. Investigation of a New Device to Improve Dosimetric Outcomes in Intravascular Brachytherapy. *Brachytherapy*. In Press.

Famulari G, Pater P, **Enger SA**. Microdosimetric evaluation of alternative high and intermediate energy high dose rate brachytherapy sources - a Geant4-DNA simulation study. *Int J Radiat Oncol Biol Phys*. 100(1):270-277 (2018).