Focus on Faculty #7
Gabriela Stroian

Dr. Gabriela Stroian is an Assistant Professor in the Department of Oncology and a medical physicist in the Division of Radiation Oncology at the Jewish General Hospital. She is also an instructor in the Radiation Oncology program at Dawson College.

Dr. Stroian was born in Bucharest, Romania where she graduated with a Bachelor's degree in Theoretical Physics from the University of Bucharest in 1997. She continued her studies in France where she obtained a Ph.D. in Theoretical Physics at the Montpellier II University in 2001. After one year of postdoctoral training at Joseph Fourier University in Grenoble, France, her inclination towards medicine resulted in her switch from theoretical physics to medical physics and the completion in 2005 of a M.Sc. degree in Medical Physics at McGill University. After one year of postdoctoral training, in 2007 she became a Research Associate and Faculty Lecturer in the Medical Physics Unit at McGill University. In 2008, she became a medical physicist in the Division of Radiation Oncology at the Jewish General Hospital and an Assistant Professor in the Department of Oncology at McGill, positions which she still holds.

Starting in 2013, Dr. Stroian supervised the implementation of a web-based application for quantitative evaluation and quality control of radiation therapy treatment plans. This web-based application first guides the planner through every step of the planning process and then helps the planner evaluate the quality of the generated plan. Once a treatment plan is generated, evaluation is performed based on objectives agreed upon by the radiation oncologists and the electronic plan evaluation report flags objective violations through a colour code. Treatment plan parameters are stored in a database where trends can be monitored. A comparison of the radiation therapy treatment plans tracked before and after deployment of this tool showed an increase in quality for all planners and radiation oncologists after the tool was implemented. Moreover, a significant decrease in the variation in quality for radiation therapy treatment plans

was also observed, with planners feeling that their planning efficiency has increased. This positive experience encouraged implementation of this web-based application at other clinical sites.

Dr. Stroian is also actively involved in the transition to a paperless environment at the Jewish General Hospital's Division of Radiation Oncology. The integrated, multidisciplinary approach taken to adapting departmental workflows and implementing changes led to the successful completion of a first phase of the transition this summer.

In her spare time, Dr. Stroian leads an active lifestyle engaging in a variety of activities including biking, hiking, swimming, snowshoeing, skating and downhill skiing.

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

G. Stroian, C. Martens, L. Souhami, D.L. Collins, J.P. Seuntjens. Local correlation between Monte-Carlo dose and radiation-induced fibrosis in lung cancer patients. Int. J. Radiat. Oncol. Biol. Phys., 70 (3): 921-930, March 2008.

A. Alexander, F. DeBlois, **G. Stroian**, K. Al-Yahya, E. Heath, J. Seuntjens. MMCTP: A radiotherapy research environment for Monte Carlo and patient-specific treatment planning. Phys. Med. Biol., 52: N297-N308, July 2007.

G. Stroian, T. Falco, J.P. Seuntjens. Elimination of ghost markers during dual sensor-based infrared tracking of multiple individual reflective markers. Med. Phys., 31:2008-2019, July 2004.