

Odette Cancer Centre Breast Radiation Oncology Fellowship Objectives

Faculty Supervisors

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Core Objectives

Excellence in breast cancer care requires a multidisciplinary approach and a sound understanding of cutting edge applied researches. The Breast Radiation Oncology fellowship program is part of a larger initiative designed to train Radiation Oncology experts in the management of breast cancer with specific focus on clinical management, research skills and critical evaluation of data, in an interdisciplinary academic setting at the Sunnybrook Odette Cancer Center (OCC). The interdisciplinary setting means that the specific educational program has been designed for fellows in surgery, medical oncology, radiation oncology, pathology and imaging.

More information about the OCC Multidisciplinary Breast Fellowship program can be found on: http://sunnybrook.ca/content/?page=Focus_OCC_Care_Breast_Fell

On completion of his/her training, the Fellow will be able to function in an integrated interdisciplinary clinic to manage patients with all stages and form of breast malignancies. The Fellow will have been exposed and will have developed competence in advanced radiotherapy techniques for the adjuvant treatment of breast cancer.

Fellows willing to pursue formal training in research are strongly encouraged to enrol in Master's Programs in Medical Biophysics, Clinical Epidemiology, or Education.

Enrolment in PhD programs can also be accommodated. A two year fellowship would be more suitable in this case.

Specific Objectives

Research

1. The Fellow will enrol and assess patients in ongoing research protocols.
2. He/she will be able to describe the different types of clinical trials.
3. He/she will develop and complete a research protocol, including application to research ethic board relevant to the field of breast Radiation Oncology.
4. He/she will be asked to prepare and submit manuscripts suitable for publication in professional journals.

The particular research topics will vary by the interest of the Fellow. These include, but are not limited to:

1. Use of various imaging modalities for tissue characterization and response to therapy.
2. Concomitant radio-chemotherapy for locally advanced breast cancers.
3. Population based studies with emphasis on DCIS and LCIS.
4. Permanent breast seed brachytherapy: technique optimisation and toxicity.

5. Breast radiotherapy techniques: prone, IMRT, Tomotherapy, Atlas based segmentation, image fusion.
6. Palliative radiotherapy outcome research.

External Beam Radiotherapy

1. The Fellow will be able to discuss the indications and techniques for breast radiotherapy.
2. He/she will be able to perform appropriate simulation and contouring and be able to supervise and approve conformal 3D, IMRT and Tomotherapy plans.
3. The Fellow will have a detailed knowledge of treatment outcomes, including dose-response relationships, radioprotection, toxicity, and how to manage treatment failure and toxicity.
4. The fellow will have in depth knowledge of long term side effects of breast radiotherapy, including risks of cardiac failure and skin side effects.
5. The Fellow will be able to discuss and deliver palliative radiotherapy.

Brachytherapy

1. The Fellow will be able to discuss the indications for permanent breast seed, including outcomes and toxicities.
2. He/she will be competent to perform permanent breast seed implants including patient selection, pre-implant CT planning, seed insertion and post-implant CT evaluation.
3. He/she will be competent to manage the immediate post-operative complications of brachytherapy, and understand how to manage the longer term side effects.

Systemic Treatment

1. The fellow will have in depth knowledge of standard pathology prognostic factors including tumour size, grade, type, margins... He/she will also have in depth knowledge of novel classification of tumour phenotype including Luminal A or B, HER2 positive or triple negative cancers. He will understand the value of multiple gene assays for risk classification including Oncotype DX.
2. The Fellow will understand the indications and toxicities for adjuvant chemotherapy, targeted therapy or hormonotherapy.
3. The fellow will be able to discuss the emerging studies in survivorship including young female with breast cancer, LABC, and post-menopausal issues including osteoporosis, fatigue, sexual dysfunction ...etc...
4. The Fellow will be able to describe the emerging role of novel chemotherapy agents and the status of clinical trials.

Surgical Treatment

1. The Fellow will be able to describe the indications for radical modified mastectomy, quadrantectomy, lumpectomy with or without hook localization, full axillary dissection and sentinel lymph node sampling.
2. He/she will be able to describe and discuss breast reconstruction methods.