

Breast Pathology Fellowship Program

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Co-supervisors:

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Teaching Faculty Members:

FMC:

Hua Yang, MD, FRCPC
CLS Breast Pathology Subspecialty Group Leader
Moosa Khalil, MD, FRCPC (Breast Surgical and Cytopathology)

DSC Site:

Steve Gorombey, MD, FCAP, FRCPC, FASCP (ER/PR/HER2 reporting)
Nicole Bures, MD, FRCPC (Breast Pathology, Cytopathology)
Paul Klonowski, MD (Immunopathology Pathology)

SHC Site:

Chad Luedtke, BSc, MSc, MD, FRCPC (Breast Pathology)
Travis Ogilvie, MD, FRCPC
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RGH Site:

Doreen Paslawski, BSc, MD, FRCPC (Breast Pathology)

Diagnostic Imaging:

Bobbi Docktor, MD, FRCPC (Breast Diagnostic Imaging)

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Background

A fellowship training in breast pathology at the University of Calgary is a great opportunity since Calgary Laboratory Services (CLS) is a centralized service with a high volume of breast cancer cases (an average of 1400 new invasive breast cancer diagnosis per year with corresponding ER, PR, Her-2, Ki67, ODx and ProSigna tests). It also has one of the largest number of breast cancer consultation volume in the country (currently there are over 400 breast cancer consultation requests annually. Nine breast pathology subspecialty group members based in four hospital sites that provide training in diverse practice settings. There are established weekly TBCC Multidiscipline Breast Tumor Board Rounds; Diagnostic Surgical Breast Rounds and Departmental Breast Interest Group Rounds. There are collaborative efforts with the Cross Cancer Institute in Edmonton to develop a digital imaging analysis platform for Ki67 and other predictive / prognostic markers tests.

Summary and Description of Program

A one-year program with focused exposure to diagnostic breast pathology following the CanMEDS principles. Throughout the fellowship, the fellow will be responsible for the intradepartmental consultation for the breast pathology service, involvement in the multidisciplinary rounds, and selected teaching and research activities pertaining to breast pathology. He/she will be involved in the surgical grossing of complex cases and also in the reporting of the diagnoses with review of the literature.

Terminal objectives

Upon completion of the fellowship, the fellow will be:

- Prepared with the knowledge and skills to assess and diagnose breast pathologies and communicate these findings effectively to clinicians
- Will be aware of the current literature in the field of breast pathology and how to fulfill the role of a breast pathology consultant

- Will have acquired knowledge about relevant clinical standards in breast pathology and fostered the spirit of enquiry and original research.
- Will have developed skills in undergraduate, postgraduate and continuing medical education

Specific objectives

I. Medical Expert

The fellow will:

- Be familiar with the clinical presentations of breast pathology and the role of imaging
- Gain competency in assessing complicated surgical gross specimens, reviewing the slides, performing appropriate ancillary testing and dictating concise and clear reports
- Gain diagnostic skills in assessing both breast core biopsies and larger specimens with the consideration of the clinical presentation, imaging findings, and microscopic assessment
- Acquire knowledge about available ancillary techniques, and be familiar with their uses, procedures and results including Immunohistochemistry, Her-2/Neu testing, and other molecular studies
- Acquire skills in assessing and diagnosing sentinel lymph nodes
- Be familiar with the treatments for neoplastic conditions of the breast and the implications in reporting these cases on core biopsies and large specimens
- Be knowledgeable about the staging system of the breast and the diagnostic challenges that occur when staging

II. Communicator

The fellow will:

- Listen and communicate questions and ideas effectively
- Communicate effectively with technical and pathology staff
- Communicate effectively with clear and complete diagnostic reports and consults
- Communicate effectively with other clinicians and surgeons at frozen section and interdisciplinary rounds

III. Collaborator

The fellow will:

- Be involved as part of the clinical team at various interdisciplinary rounds (attendance at TBCC Breast Rounds once a week, breast pathology rounds once a week and breast diagnostic rounds every other week)
- Take on the role of a consultant to the technical staff, residents and pathology staff by providing advice and guidance on surgical cases
- Participate in breast pathology research activities within the department

IV. Manager

The fellow will:

- Understand important aspects of quality control and quality assurance in breast pathology
- Effectively utilize resources when reviewing cases for consultation and diagnosis
- Be aware of the costs and the best use of resources for each test

V. Health Advocate

The fellow will:

- Demonstrate understanding and compliance with safety guidelines in the gross room
- Be thorough in the examination of the breast specimens at the time of gross inspection
- Be up to date with current literature and issues in breast pathology

VI. Scholar

The fellow will:

- Identify gaps in their knowledge and develop a self-learning strategy
- Facilitate the learning of breast pathology with residents, pathologists and clinicians by sharing/presenting cases at breast pathology rounds, TBCC breast rounds, breast diagnostic rounds and Friday Unknown slide rounds
- Search relevant literature for up-to-date information
- Review available breast pathology teaching sets and help in the preparation of creating a digital set

VII. Professional

The fellow will:

- Exhibit appropriate personal and interpersonal behaviour

- Be aware of their own limitations
- Practice breast pathology in an ethical manner and strive to deliver a high degree of quality of care to the patient

Resources and Facilities

Facilities

During the fellowship training, fellow will rotate through the hospital sites, department of diagnostic imaging and specific laboratories to work with designated supervisor, co-supervisors and teaching faculties. This including: DSC, FMC, PLC, RVH, Department of Diagnostic Imaging and CLS Immunohistochemistry Lab.

Foothills Medical Centre: Space for the fellow will be as per space availability in either the resident's room or unused staff offices that are equipped with a computer and microscope.

Diagnostic Scientific Centre: Space for the fellow will be in the new general pathology resident room which is equipped with a computer and microscope.

For the PLC and RVH sites rotation, the current resident's room equipped with computer and microscope will be used.

Resources

Teaching collection: We are in the process of digitizing a large, comprehensive breast teaching collection and developing a digital breast pathology teaching bank for the University of Calgary which will be available online.

Essential Reading

- Robbin's Pathology Chapter 23 The Breast
- Rosen's Breast Pathology, 3rd Ed., by Paul Peter Rosen
- Biopsy Interpretation of the Breast, by Stuart J. Schnitt and Laura C. Collins
- Breast Pathology: A Volume in Foundations in Diagnostic Pathology series, by Frances P. O'Malley and Sarah E. Pinder
- Pathology of the Breast, 2nd Edition by Fattaneh Tavassoli
- Diagnostic Problems in Breast Pathology by Frederick C. Koerner

Rounds to attend

- TBCC Breast Tumor Board Rounds (every Monday at 12:00, Room: TBCCB21)
- Diagnostic Breast Cancer Rounds (Imaging/Surgery/Pathology Correlation Rounds. Every other Wednesday at 4:30, R.D. Johns Lecture Theatre)
- Departmental Breast Subspecialty Group Rounds (every Thursday at 8:00, FMC multi-head scope room)

Specific Rotations

Hospital Sites Rotation:

The fellow will rotate through each hospital site, including FMC, DSC, PLC and RVH, to work with designated teaching faculty at each site. Under the guidance of that faculty, the fellow is expected to formalize with the breast pathology work flow at each site; to handle every breast pathology case including consult cases assigned to the designated teaching faculty. If agreed upon, the fellow will be encouraged to present cases at clinical or teaching rounds and to study teaching collections provided by the faculty member.

Breast Cytopathology Rotation:

The fellow will spend an accumulative of one month with our Cytopathologist and breast pathologist, Dr. Moosa Khalil and Dr. Nicole Bures at the FMC and DSC sites to formalize with cytology diagnosis of benign and malignant breast diseases as well as use of FNA touch prep techniques in diagnosing breast diseases and axilla lymph node diseases. Under the guidance of Dr. Khalil, the fellow will be expected to sign out all breast cytology cases assigned to Dr. Khalil during the time of rotation. The fellow is also expected to study breast cytology teaching cases collections.

Immunohistochemical Laboratory Rotation:

Under the supervision of the Immunolab director Dr. Paul Klonowski, the fellow will spend one month in the CLS Immunolab. During the one month rotation, the fellow will receive all ER/PR/HER-2-IHC & SISH and Ki67 slides, pre-score all and then sign out with pathologists on schedule. In this way, the candidate will have a chance to look at all newly diagnosed and recurrent breast cancer cases in CLS at the same time to be exposed to the knowledge about tests for breast cancer diagnostic and prognostic markers, including test selection, platform set up, validation process and quality control.

Breast Diagnostic Imaging Rotation:

Under the guidance Dr. Bobbi Docktor, the fellow will spend 2 weeks in the University of Calgary, Department of Diagnostic Imaging to understand the guidelines for breast cancer screening, diagnosis, patient triage and follow up; to be familiar with the imaging diagnostic work flow and process of radiology-pathology correlation. The fellow is expected to attend and present at the Radiology/Surgery/Pathology correlation rounds and actively participate in discussion.

Fellow's Duties and Responsibilities

As a certified and trained pathologist the fellow will be expected to function as a junior member of the staff, taking responsibility for diagnostic and clinical rounds and teaching tasks as required. Much of the fellowship will occur at the Foothills Medical Centre and Diagnostic Scientific Centre. Because of the importance of diagnostic oncologic pathology and the vital role of breast cancer board reviews, the fellow will play an active role in the case reviews for breast cancer board meetings. Similarly, the fellow will play an active and lead role in departmental and interdepartmental meetings. Depending on the research interest and track record the fellowship may include a greater or lesser amount of protected time for this pursuit.

Routine breast surgical pathology and consultation services:

- Frozen section diagnosis on sentinel lymph nodes assigned to teaching faculty member at the time of specific rotation

- Gross and sign out biopsy and large breast specimen assigned to teaching faculty member at the time of specific rotation
- All breast pathology consultation cases assigned to assigned to teaching faculty member at the time of specific rotation
- Preparation of presentations of cases for review at interdisciplinary rounds
- ER/PR/Her-2 IHC & SISH, Ki67 diagnosis and reporting assigned to teaching faculty member at the time of specific rotation
- Ordering and coordinating ODx and ProSigna tests.

The education of medical students, residents and other clinicians

- Supervise residents on a breast pathology rotation
- Involvement in the resident Friday Unknown case rounds and journal club with suggestion of appropriate cases and breast pathology journal articles for review

Review Dr. Yang's teaching case collection:

- By reviewing and organizing the teaching sets for a digital slide collection, the fellow will have an opportunity to be exposed to a significant volume of rare and interesting cases in a relatively short period of time. If time permit, the fellow may retrieve and review cases previously discussed at the weekly departmental breast pathology subspecialty group rounds.

QA teaching and research projects objectives:

- To categorize and digitize current available breast pathology teaching collection by working with our departmental Aperio scanning system and set up our digital breast pathology imaging bank, and publish it on-line. Currently, we have over 1,000 cases of breast pathology teaching sets encompassing all areas of benign and malignant breast pathologies.
- To participate in the development of imaging analysis reporting system, e.g. reporting Ki67 as breast cancer prognostic and predictive marker. This project is ongoing and is in collaboration with CLS Immunohistochemistry Lab and Cross Cancer Center in Edmonton.
- The fellow is encouraged to present any research material at a conference or at the annual staff/resident research day with the submission of a manuscript to a journal as first author.

In the above-mentioned rounds, if a case with pathologic diagnosis is presented, the fellow may be expected to present the pathologic findings and discuss the case with the clinicians.

The fellow may be asked to give presentations at the residents' academic half-day and continuing medical education rounds.

There will be no on-call duty during the year of fellowship.

Recommended activities:

- Annual Meeting of the Canadian Association of Pathologists
- Annual Meeting of the United States and Canadian Academy of Pathology
- Annual Banff Pathology Conference

Evaluation:

1. The fellow will be evaluated continuously through the year by the supervisors. Official evaluations will be done at the 6 month point and a final evaluation by supervisor with the input from all teaching faculty members and project collaborators. Evaluations will be based on CanMEDs competencies outlined in this document. Evaluations will also be verbally discussed with the Fellowship Committee and the Residency Program Committee.
2. Two case-based oral examinations will be administered one at 6 months and the second at the end of the training by supervisors and teaching faculty members.
3. The fellowship program will be evaluated once a year, using a form similar to the one used by the residents to evaluate the residency program. Once completed, this evaluation will be submitted directly by the fellow to the Fellowship Program Director who will subsequently present it to the Fellowship Program Committee.