2019 Breast Surgical Oncology Fellowship Curriculum and Minimum Training Requirements
Effective August 1, 2019

**Classification System**

**Diseases/Conditions**

**BROAD** – A graduate of the Breast Oncology training program should be able to care for all aspects of disease and/or provide comprehensive management. When referring to a discipline of training (e.g. research or community outreach), the graduate should be able to carry out the endeavor from its conception through completion.

**FOCUSED** – A graduate of the Breast Oncology training program should be able to make the diagnosis and provide initial management, but will not be expected to be able to provide comprehensive management. For disciplines of training, the graduate should be able to implement and participate in the activity, but would not be expected to complete it on their own.

**Operations/Procedures**

**ESSENTIAL-COMMON**- Frequently performed operations, procedures, or endeavors for a breast surgeon; specific procedure competency is required by end of training and should be attainable primarily by case volume or active participation in the activity/endeavor.

**ESSENTIAL-UNCOMMON** – Uncommon operations, procedures, or endeavors for a breast surgeon in practice and not typically done in significant numbers by trainees; specific procedure competency required by end of training, but cannot be attained by case volume or participation in the activity/endeavor alone.

**COMPLEX** – Not consistently performed by a breast surgeon in training and not typically performed in practice. Generic experience in complex procedures or endeavors in training is required, but not competence in individual procedures/endeavors.
BENIGN BREAST DISEASE

Breast Diseases/Conditions

BROAD

- Breast pain
- Breast mass:
- Cyst Fibroadenoma Phyllodes:
  - Benign
- Borderline Diabetic mastopathy
- Fat necrosis
- Galactocele
- Mondor’s disease
- Nipple discharge:
- Intraductal papilloma: Duct ectasia
- Breast infections:
- Lactational mastitis
- Non-lactational mastitis
- Subareolar abscess
  - Granulomatous mastitis
- High risk lesions:
- Flat epithelial atypia
- Columnar cell change with atypia
- Atypical lobular hyperplasia
- Atypical ductal hyperplasia
- Lobular carcinoma in situ- classic form
- Radial scar

  - High risk patients:
  - Family history
  - Childhood radiation:
  - Mantle radiation for lymphoma
  - BRCA 1 and 2 mutation carriers
  - Other mutation carriers: CDH1, PALB2, PTEN, P53, ATM
  - Role for and utility of chemoprevention
  - Peripartum issues surrounding physiologic breast changes, breast feeding and breast health

BREAST IMAGING

Breast Diseases/Conditions

BROAD

- Ultrasound
- Mammogram
- MRI
- BIRADS classification
Indications and contraindications for stereotactic biopsy
Digital tomosynthesis
Knowledge of advanced breast imaging indications

FOCUSED
PEM
Molecular breast imaging

MALIGNANT BREAST DISEASE

Breast Disease/Conditions

BROAD
Lobular carcinoma in situ- pleomorphic
Paget’s disease of the nipple
Ductal carcinoma in situ
Invasive ductal carcinoma
Invasive lobular carcinoma
Locally advanced breast carcinoma
  o Operable
  o Non-operable
Inflammatory breast carcinoma
Tubular carcinoma
Mucinous carcinoma
Other variants
Metaplastic breast cancer
Malignant Phyllodes
Pregnancy associated/lactation associated breast carcinoma
Occult primary breast carcinoma with axillary metastasis
Male breast cancer
Hereditary breast cancer:
  o Family history positive
  o BRCA 1 and 2
    o Appropriate ordering of genetic germline mutation testing
Hormone receptor status:
  o ER/PR positive
    o Her2 positive
    o Triple negative
Recurrent Breast CA
  o S/P mastectomy
  o In breast recurrence s/p partial mastectomy

FOCUSED
Metastatic disease to the breast:
  o Lymphoma
  o Melanoma
Primary sarcoma of the breast
Metastatic breast cancer to other sites
Hereditary breast cancer
  o  P53, PTEN, CHEk

Operations/Procedures
ESSENTIAL-COMMON
  Breast ultrasound
  Cyst aspiration
  FNA
  Percutaneous core needle sampling
  Skin punch biopsy
  Diagnostic excisional biopsy, with/without wire/seed/ultrasound localization
  Central/Major/Terminal duct exploration and excision
  Partial mastectomy, with/without image-guided localization (wire/seed/ultrasound)
  Oncoplastic partial mastectomy
  Mastectomy:
    o  Total mastectomy
    o  Skin-sparing
    o  Nipple/areolar sparing
  Axillary sentinel node dissection
    o  Blue dye
    o  Nuclear injection
    o  Both
  Axillary node dissection

ESSENTIAL-UNCOMMON
  Percutaneous core needle sampling
    o  Ultrasound guided
  Level 3 node dissection
  Radical mastectomy
  Chest wall resection

COMPLEX
  Stereotactic core biopsy
  MRI biopsy

PLASTIC AND RECONSTRUCTIVE SURGERY

Diseases/Conditions
BROAD
  Partial mastectomy breast defects
  Post-mastectomy defects
FOCUSED
Breast asymmetry after breast conservation
Chest wall defects following resection of locally advanced breast cancer

Operations/Procedures
ESSENTIAL-COMMON
Oncoplastic closure of partial mastectomy defects

ESSENTIAL-UNCOMMON
Local tissue flap closure for acquired surgical defect

COMPLEX
Tissue expander placement
Permanent silicone implant placement
Pedicle flaps for breast reconstruction:
  - Latissimus dorsi
  - TRAM
Free flap for breast reconstruction:
  - DIEP
  - Gluteal
  - TUG
Mastopexy for symmetry
Fat grafting and lipofilling

MEDICAL ONCOLOGY

Diseases/Conditions
BROAD
Chemotherapy principles and mechanisms of action

FOCUSED
Management of common complications of chemotherapeutic administration
Use of gene signatures to direct systemic treatment recommendations
Management of hormone receptor positive breast cancers
  - Early stage
  - Late stage
Management of hormone receptor negative breast cancers
  - Early stage
  - Late stage
Management of Her2 neu positive breast cancers
Management of cancers by stage:
  - T stage
  - Node negative
Indications for neoadjuvant systemic therapy, specifically with regards to optimization of breast conserving therapy
Systemic treatment for the de novo stage 4 patient

PALLIATIVE CARE, END OF LIFE

Diseases/Conditions
BROAD

Psycho-oncology includes the supportive care and management of depressive and anxiety symptoms that frequently occur in the setting of chronic complications or living with active disease for a protracted period of time. A single lecture on psycho-oncology does not satisfy this requirement.
Palliative care includes symptom treatment, hospice and end of life care and discussions, as well as management of cancer-related pain, nutrition, exercise and weight management options.
A formal experience in this is expected with exposure to end of life discussion and transitions of care to hospice. This may be an integrated experience and a rotation on a palliative care service is not required. It must be documented how the fellow obtains this experience longitudinally if a rotation is not used to satisfy this requirement. A single lecture on palliative care and end-of-life issues does not satisfy this requirement.

FOCUSED

Program directors and administrators are directed to the FAQ section of the SSO training website for additional information.

RADIATION ONCOLOGY

Diseases/Conditions
BROAD

Radiation biology principles
Radiation indications:
  o Breast conservation:
    Whole breast radiation
    Partial breast radiation
  o Post-mastectomy radiation

FOCUSED

Management of common radiation complications
Partial breast radiation:
  o Interstitial brachytherapy
  o Balloon brachytherapy
  o External beam partial breast
Radiation therapy for metastatic disease:
  o Regional
  o Distant
    Treatment
    Palliation
Radiation simulation/planning

Operations/Procedures
  COMPLEX
    Partial breast radiotherapy techniques
    Intraoperative radiation therapy

SURGICAL MANAGEMENT/COUNSELING FOR GENETIC SYNDROMES

Diseases/Conditions
  BROAD
    Family history
    BRCA 1
    BRCA 2
    P53 mutations (Li Fraumeni)
    Cowden’s syndrome
    CHEK
    Knowledge of other panels

PALLIATIVE INTENT SURGERY

Diseases/Conditions
  FOCUSED
    Asymptomatic Stage 4 breast cancer
    Symptomatic Stage 4 breast cancer
      o Resectable breast/node disease
      o Unresectable breast/node disease
        Chest wall involvement
        Skin involvement

Operations/Procedures
  ESSENTIAL-UNCOMMON
    Palliative mastectomy

CLINICAL AND BASIC RESEARCH

Diseases/Conditions
  BROAD
    Protection of Human Subjects
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Inclusion of diverse study populations
Basic Statistical Analysis
Institutional Review Board process and application
Database management, Retrospective Reviews
Defining Hypothesis and Study Aims
Evaluation of Study Design

FOCUSED

Assessment of Clinical Trial, Defining levels of Evidence/meta-analysis
Selection of primary and secondary endpoints
Defining study populations, sample size, power
Basic Survival Analysis
Assessment of Health Related QOL
Fundamentals of Health Outcomes Studies

Application

ESSENTIAL-COMMON

Participation in a journal club – clinical or science
Retrospective review study of a database or case study
Writing, submission and presentation of a cancer-related abstract
Manuscript preparation, writing and submission
Identification and Recruitment of patients to a clinical trial

ESSENTIAL-UNCOMMON

Participation in a cooperative trial group meeting

COMPLEX

Writing a grant – clinical or scientific
Writing an IRB application

COMMUNITY OUTREACH AND LEADERSHIP

Diseases/Conditions

BROAD

Communication with and education of the non-medical community
  o Cancer screening
  o Cancer prevention
  o Cancer diagnosis
  o Cancer treatment
Communication and interaction with cancer support groups
  o Breast disease
Communication with and education of non-oncologic physicians
  o Cancer screening
  o Cancer prevention
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Cancer diagnosis
  o  Cancer treatment
Communication and interaction with non-oncologic surgeons
  o  Clinical trials
  o  Multidisciplinary conferences
Understand disparities in screening, diagnosis, and treatment of cancer
Presentation skills
  o  Slide presentation
  o  Public speaking skills
  o  Panel discussion skills
Effective preparation of educational material
  o  For general public
  o  For patients
  o  For families of patients
  o  For fellows, residents, students
  o  Computer/web-based
  o  Print material

FOCUSED
Role within American Cancer Society, Komen, etc.

COMPLEX
Understanding of and possible effective preparation of outreach or screening grants
Effective presentation at community outreach

Operations/Procedures
ESSENTIAL-COMMON
  Attend and participate in cancer-support groups
  Conference participation with general surgery and subspecialty colleagues
  Lecture/talk to other fellows, residents, medical students

ESSENTIAL-UNCOMMON
  Lecture/talk to non-oncologic physicians
  Participation in American Cancer Society, Komen or similar screening and outreach events
  Prepare outreach/screening material
  Prepare outreach/screening grant

COMPLEX
  Attend Commission on Cancer
  Attend other Society/foundation meetings

PATHOLOGY
Diseases/Conditions

**BROAD:**

**FOCUSED:**

- Solid tumor margin assessment
- Nodal evaluation
  - Sentinel lymph node
  - Nodal dissection specimen
- Pathologic Analysis
- Frozen section, routine staining, immunohistochemistry
- Pathologic staging of tumors
- Intraoperative analysis

**Operations/Procedures**

**ESSENTIAL-COMMON**

- Fine needle aspiration biopsy

**ESSENTIAL-UNCOMMON COMPLEX**

- Margin assessment and preparation
  - Lumpectomy
  - Mastectomy

- Cytologic analysis
- Frozen section preparation and analysis
- Touch preparation
- Sentinel node processing and analysis
- Handling and pathologic assessment of regional lymphadenectomy specimen

**CANCER REHABILITATION**

Diseases/Conditions

**BROAD**

- Preoperative assessment of disability
- Preoperative assessment of impact on activities of daily life

**FOCUSED**

- Postoperative/treatment evaluation and management of disability
- Postoperative/treatment evaluation and management of impact on activities of daily life
- Postoperative/treatment evaluation and intervention for
  - Home
  - Place of work
  - Family/support network
- Lymphedema management
  - Preoperative assessment
  - Postoperative monitoring and treatment
Operations/Procedures:

**ESSENTIAL-COMMON ESSENTIAL-**

**UNCOMMON**

**COMPLEX**
- Physical therapy
- Occupational therapy
- Lymphedema prevention and treatment

**OTHER**
Coding and billing of breast diseases and procedures
Classification System

Operations/Procedures

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**ESSENTIAL-COMMON**
Breast ultrasound – 15 (hands on) or 30 (observation only)

Percutaneous Procedures – 13
  o Fine needle aspiration
  o Cyst aspiration
  o Percutaneous core needle sampling, palpation or image guided
  o Seroma aspiration with/without drain placement
  o Percutaneous abscess drainage with/without drain placement

Major ductal exploration and excision for nipple discharge – 1

Partial mastectomy or diagnostic excisional biopsy – 50
  o Palpation guided
  o Image guided
  o Oncoplastic partial mastectomy

Mastectomy – 40 spread over all categories
  o Total mastectomy
  o Skin-sparing mastectomy
  o Nipple/areolar sparing mastectomy

Axillary sentinel node biopsy – 50

Level 1, 2 completion axillary node dissection – 10
ESSENTIAL-UNCOMMON (No numbers set)
- Level 3 node dissection
- Palliative mastectomy for stage 4 disease
- Chest wall recurrence /radical resection

Plastic Surgery
- Local tissue flap closure for tissue defect
- Breast Reconstruction with Tissue Expander
- Tissue expansion procedure
- Exchange of Expanders to Implants
- Breast Reconstruction with Autologous Tissue Transfer
  - Pedicle flaps (latissimus, TRAM)
  - Free flaps (free TRAM, DIEP, etc.)
- Nipple reconstruction
- Areolar tattooing
- Breast reduction
- Mastopexy for symmetry

COMPLEX – EXPERIENCE AS AVAILABLE (No numbers set)
Vacuum-assisted core biopsy (must have experience with and exposure to listed biopsy techniques)
- Image guided
  - Stereotactic
  - Ultrasound
  - MRI

Clip placement
- Image guided
  - Stereotactic
  - Ultrasound
  - MRI

Placement of localizing wire or seed
- Image guided
  - Stereotactic
  - Ultrasound
  - MRI

Tumor ablation
- Palpation guided
- Image guided

Subcutaneous mastectomy for gynecomastia

Radical mastectomy
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Radiation Oncology

- Partial breast techniques
  - Interstitial brachytherapy catheters
  - Intracavitary balloon radiation
  - External beam

- Intraoperative radiation therapy

NON-OPERATIVE EXPOSURE

Medical oncology
- 15 new breast cancer / recurrent disease consultations
- 15 follow-up visits

Radiation oncology
- 15 new breast cancer consultations
- 5 new breast cancer or recurrent breast cancer simulations
- 15 f/u visits and/or physics reviews

Pathology
- 8 cancer case sign-outs
- 8 frozen or intra-op evaluations
- 8 benign and/or high risk lesions

Plastic Surgery
- 8 reconstructive cases

Genetic Consultations
- 3 observed consultations

Imaging
- 8 screening cases
- 8 breast ultrasound and/or nodal ultrasound
- 8 diagnostic mammograms
- 8 breast MRIs