THINGS TO CONSIDER:

A. Please review ALL imaging and previous biopsies PRIOR to grossing any breast case.
   a. It may be helpful to draw out your own guide to assist when grossing
B. Faxitron your breast to look for clips and calcs. Make sure the clip location(s) correlates with imaging.
   a. Place mastectomies into Faxitron with POSTERIOR surface down
C. After sectioning your breast into levels, when evaluating the mass size, make sure the dimensions correlate with clinical findings (do not calculate the mass size based off the presence of a mass in certain levels, as this may give you an incorrect and overestimated size).
D. If you receive a mastectomy with multifocal lesions, measure and document the distance between the lesions in your gross.
E. Be descriptive in your cassette summary as this is useful when reviewing your slides the following day.
   a. Document level and location of your sections:
      i. Level 1- superior OR level 1- upper inner quadrant
      ii. Level 13- parenchyma between lesion #1 and lesion #2
      iii. Level 4- lesion #1 at closest approach to posterior margin
      iv. Level 2- lesion #1 in relation to superior margin

FORMalin FIXation

Specimen collection time: The OR nurses record the collection time of all breast specimens in Beaker. This time indicates when the breast specimen has been removed from the patient. The OR staff will contact SurgPath personnel to pick up every breast lumpectomy and mastectomy to try and ensure the ischemic time is within the appropriate limits.

Ischemic time: Breast excisions/re-excisions/lumpectomies/partial mastectomies and all mastectomies (including prophylactic ones) are to be immediately (within 1 hour) weighed and placed in 10% neutral buffered formalin (NBF) once received or picked up from the OR. Ideally, this task will be performed by the personnel/technician prior to accessioning the case. The time the specimen was placed in 10% NBF will be written on the specimen container and documented in Case Notes in Beaker. The collection time and the time the specimen has been placed in 10% NBF will be used to calculate ischemic time:

\[(\text{Time tissue placed in formalin}) - (\text{Collection time}) = \text{Ischemic Time}\]

Due to CAP-recommended guidelines for ER, PR, and HER2/neu (including FISH) testing, as much as possible, specimens should be placed in formalin within one hour
after surgery. Furthermore, the breast tissue should be in contact with formalin for 6-48 hours, not to exceed 72 hours. Therefore, when a specimen comes in late on Friday, gross the specimen such that you identify the tumor and submit sections of the tumor for the Friday late processor. If the specimen is still very fresh, then please submit the remaining sections (including lymph nodes) during the weekend such that they'll run on the Sunday processor.

When a specimen comes in on the weekend (occasionally on Saturdays), then please gross the entire specimen and submit sections for the Sunday processor. For such Saturday specimens, waiting until Monday to submit sections for the Monday processor will result in suboptimal testing conditions for breast biomarkers, since this will exceed the recommended 48-hour ideal formalin fixation time frame.

As always, RECORD THE ISCHEMIC TIME AND THE FORMALIN FIXATION TIME

**Note:** The exception to this is when the requisition states 'Rule out Lymphoma' or a prior core needle biopsy diagnosis was reported as lymphoma. In these cases, call for a lymphoma work-up and DO NOT fix the breast tissue in 10% NBF.

**Calculating formalin fixation times (Westwood):**

<table>
<thead>
<tr>
<th>Day</th>
<th>Fixation Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday – Thursday</td>
<td>calculate fixation time until 3am</td>
</tr>
<tr>
<td>Friday</td>
<td>calculate fixation time until 2am</td>
</tr>
<tr>
<td>Saturday - Sunday</td>
<td>calculate fixation time until 8pm on Sunday</td>
</tr>
</tbody>
</table>

Holiday weekends contact histology to ensure cassettes are transferred from formalin and placed into alcohol so as not to exceed the formalin fixation time (6-72 hours). The tissue is in formalin for 2 hours on the processor, so please be mindful of accounting for this when calculating fixation times

**Calculating formalin fixation times (Santa Monica):**

<table>
<thead>
<tr>
<th>Day</th>
<th>Fixation Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday – Thursday</td>
<td>6:30 pm VIP load: calculate fixation time until 8:30pm</td>
</tr>
<tr>
<td></td>
<td>Late load: calculate fixation time until 3am</td>
</tr>
<tr>
<td>Friday</td>
<td>calculate fixation time until 2am</td>
</tr>
<tr>
<td>Saturday - Sunday</td>
<td>calculate fixation time until 8pm on Sunday</td>
</tr>
</tbody>
</table>
SURGICAL PATHOLOGY SPECIMEN RADIOGRAPHY: FAXITRON

Faxitron image(s) must be obtained and uploaded into Beaker for the following specimen types:
1) All excisional biopsy/lumpectomy/partial mastectomy specimens in order to verify microclip(s) and/or microcalcifications
2) All mastectomy specimens
3) Consider Faxitron imaging paraffin blocks of needle core biopsies as needed for microcalcifications (when initial 3 H&E sections do not show calcs and specimen radiography showed calcs)

When an image is taken, an annotation of the patient’s name and surgical case number must be included in each image. Any additional annotations that are relevant to the particular case should also be included, for instance, measurement(s) and relationships of specific anatomic locations to lesion(s), size of tumor, area of calcifications, location of suspicious area(s), summary of sections, etc.

Image(s) should be uploaded into the case in Beaker; this must be noted in the gross description for billing purposes. (i.e., “A Faxitron image was taken of the specimen.”)

A PDF copy of the Faxitron user manual can be downloaded from the Resident’s Corner website:

http://164.67.97.205/residents/manuals/index?folder%5fid=39110
BREAST PATHOLOGY GROSSING GUIDELINES

**Specimen Type:** MASTECTOMY

**Procedure:**

1. Review patient’s pertinent history and imaging in EPIC in order to correlate with gross findings
2. Weigh (fresh weight should be written on specimen container)
3. Orient specimen (typically long-lateral; short-superior)
   a. Quadrants will be determined based on location of nipple
4. Measure (entire specimen, skin ellipse, nipple, and axillary tail if present)
   a. Provide oriented dimensions of breast (ANT-POST; MED-LAT; SUP-INF)
      i. Medial-lateral dimension DOES NOT include axillary tail
      ii. Measure axillary tail separately
5. Check skin for scar, puckering or ulcerations
6. Document if nipple is everted, inverted, or retracted
7. Faxitron (prior to inking) and look for microclip(s) and calcifications
   a. Include “A Faxitron image is taken to reveal…” in your gross
   b. Place breast with POSTERIOR surface down in the Faxitron
8. Ink specimen:
   - Blue - superior
   - Purple - medial
   - Green - inferior
   - Yellow - lateral
   - Orange - anterior/superficial
   - Black - posterior/deep

**If nipple sparing- ink sub-areolar disc (use color which hasn’t been used for medial)**

**If axillary tail present-no need to ink axillary tail tissue. It is helpful to ink mastectomy prior to removing the axillary tail so that you do not ink the lateral cut surface (which is not a true margin). It is fine if yellow ink extends onto the axillary fat**

9. **If lesion is NOT close to nipple (where a perpendicular section would best demonstrate skin involvement), amputate the nipple. Take a shave of the nipple base and further serially section the amputated nipple.**
   a. This maximizes the surface area of epidermis evaluated microscopically to check for Paget’s and/or other lesions
10. Serially section, from medial to lateral into complete 1cm or thinner cross sections
    a. Document number of levels
    b. Document in which level the nipple is located
11. Measure lesion(s)
    a. Indicate location (quadrant and clock face orientation)
    b. Give distance to all margins, nipple
    c. If multiple lesions present give the distance between the lesions/biopsy sites and distance between the farthest ends of the lesion (in case the grossly separate lesions are one large lesion)
12. Palpate and section through axillary tail for lymph nodes (try to find 10-20 LN at minimum)
   a. If oriented (typically one suture- level 1; two sutures-level 2) cut into two levels and indicate which LN are in each level in cassette summary
   b. Document if there are any biopsy clips present and indicate corresponding LN in cassette summary
   c. Even if no axillary tail is present try and palpate the upper outer quadrant for lymph nodes

Suggested sections for histology:

- **Standard Sections**
  - Nipple
    - Serial sections of amputated nipple in one cassette
    - Shave of base of nipple (fat) in a separate cassette
    - Nipple sparing: sub-areolar disc, perpendicularly sectioned
  - Skin overlying lesion/biopsy cavity/to include scar
  - 4-6 sections of lesion to include closest margins, if possible
  - Tissue between multiple lesions, if present
  - Random tissue from each quadrant, focusing on fibrous tissue
    - 1 cassette from each quadrant if gross lesion seen
    - 2 cassettes from each quadrant if no gross lesion seen or prophylactic
  - All lymph nodes

- **Additional sections to include:**
  - **Prophylactic**
    - 2 sections per quadrant, focusing on fibrous tissue
  - **DCIS/ADH/LCIS/ILC BRCA or CHEK2 mutations**
    - Sections from EVERY level
  - **IDC IDC with DCIS**
    - Sections of every level of lesion
    - Flank levels
    - 1 section per quadrant, focusing on fibrous tissue
  - **Multicentric Lesions**
    - Sections between foci
  - **Post neo-adjuvant chemotherapy (NACT)**
    - 2 sections per 1 cm of the tumor bed (entirely embed if tumor bed can fit in 15 cassettes or fewer OR indicate % of tumor bed submitted)
  - **Prior lumpectomy cavity**
    - 2 times the largest dimension (e.g. 10 cassettes if cavity is 5 cm)
**Gross Template:**
Labeled with the patient’s name (***), medical record number (***), designated “***”, and received [fresh/in formalin] a *** gram, [oriented/un-oriented] [simple/skin- sparing/skin and nipple sparing/modified radical/radical/prophylactic mastectomy] with [indicate provided suture orientation]. The specimen measures ***cm (superior- inferior) x ***cm (medial - lateral) x ***cm (anterior - posterior). The skin ellipse [measure; describe scar/induration/ulceration]. The [everted/retracted/flattened] nipple measures *** x *** x ***cm. [If a nipple is not present, note the presence/absence of a suture marking the subareolar disc]. The axillary tail measures *** x *** x ***cm [indicate orientation if provided].

The specimen is serially sectioned from medial to lateral into [number] levels. The nipple is located in *** level(s). The cut surface is tan-yellow and remarkable for [describe lesion(s) – size/shape/location/distance to all margins]. [Describe texture of lesion]. The lesion is located in [note which levels/quadrant/clock location/distance from nipple]. [Describe site of metallic clip if present]. [If no clip/mass is located – radiograph the specimen and contact pathologist].

[Describe any other gross abnormalities, particularly the ones that can be correlated with imaging findings - Provide individual description for each lesion present. Note which slices/quadrant/direction and distance to the main mass/distance to margins]. The remainder of the uninvolved parenchyma [fatty, unremarkable, consists of ___% tan-yellow adipose tissue and ___% white fibrous tissue]. The [upper outer quadrant/axillary tail] is palpated and [no lymph nodes/number of LN] are identified ranging from *** - *** cm in maximum dimension.

All identified lymph nodes in their entirety and representative sections of the remaining specimen are submitted.
Total Ischemic Time: *** minutes
Total Formalin fixation Time: *** hours

**Sample Cassette Submission:**

Case with biopsy proven invasive carcinoma

A1: Nipple base, shave
A2: Nipple, serially section
A3: mass/bx cavity (General rule is 2 cassettes/ 1 cm)
A4: mass to the closest margin in perpendicular relationship
A5: level x (mass 1)
A6: level x (section between mass 1 and 2)
A7: level x (mass 2)
A8: level x