APPENDIX A — LEXICON SUMMARY FORM FOR RECOMBINED IMAGES

ACR BI-RADS® — CEM LEXICON SUMMARY FORM FOR RECOMBINED IMAGES

For each of the following categories, select the term that best describes the dominate lesion feature. Whenever possible, definitions used in BI-RADS for mammography (low energy image findings) and/or MRI should be used. The outline format presented below does not match that used in Table 1, as only recombined lexicon terminology is included here.

BREAST TISSUE		
A. Background parenchymal enhancement (BPE): Refers to the normal enhancement of fibroglandular tissue seen on the recombined images		
1. Level	a. Minimal	
	b. Mild	
	c. Moderate	
	d. Marked	
2. Symmetric or asymmetric (report for bilateral studies)	a. Symmetric	Similar enhancement in both breasts
	b. Asymmetric	More enhancement in one breast than the other
FINDINGS		
B. Seen on low energy images	1. Yes (refer to Mammography lexicon)	
	2. No	
C. Lesion Conspicuity (relative to background)	1. Low	Enhancement equal to or slightly greater than background
	2. Moderate	Enhancement is between low and high
	3. High	Enhancement is much greater than background
D. Masses: 3D, space-occupying lesion, convex-outward contour		
1. Shape *(select one)*	a. Oval	Elliptical or egg-shaped
	b. Lobulated	Generally oval with one or more indentations resulting in an undulating surface
	c. Round	Spherical, ball-shaped, circular, or globular
	d. Irregular	Neither oval, lobulated nor round. Has acute angle protruding portions.
2. Margin *(select one)*	a. Circumscribed	Entire margin is sharply demarcated with abrupt transition between the lesion and surrounding tissue
	b. Non-circumscribed	
	i. Indistinct (historically irregular)	Uneven edges (but not spiculated)
	ii. Spiculated	Characterized by lines radiating from the mass
3. Internal enhancement characteristics *(select one)*	a. Homogeneous	Confluent uniform enhancement
	b. Heterogeneous	Nonuniform enhancement with variable density
	c. Rim enhancement	Enhancement more pronounced at periphery of mass

E. Non-mass enhancement (NME): Enhancement that is neither a mass nor an enhancing asymmetry		
1. Distribution *(select one)*	a. Diffuse	Enhancement distributed randomly throughout the breast
	b. Regional	Enhancement in a large volume of tissue (may be more than one quadrant) but not diffuse and does not follow a segmental or linear distribution
	c. Focal	In a confined area, less than a breast quadrant volume with fat or normal glandular tissue interspersed between the abnormally enhancing components (exception: focal homogeneous enhancement)
	d. Linear	Enhancement arrayed in a line (not necessarily a straight line) implying involvement of a duct
	e. Segmental	Triangular or cone-shaped region of enhancement. Apex generally oriented toward the nipple
2. Internal enhancement characteristics (when discernible) *(select one)*	a. Homogeneous	Confluent uniform enhancement
	b. Heterogeneous	Nonuniform enhancement in a random pattern separated by normal breast parenchyma or fat
	c. Clumped	Cobblestone enhancement of varying shapes and sizes with occasional confluent areas
F. Enhancing asymmetry		
1. Internal enhancement pattern *(select one)*	a. Homogeneous	Confluent uniform enhancement
	b. Heterogeneous	Nonuniform enhancement in a random pattern separated by normal breast parenchyma or fat
G. Intramammary lymph node: Circumscribed, homogeneously enhancing masses, reniform, often < 1 cm when normal. Mention if abnormal.		
H. Skin lesion: Benign enhancing lesions of skin		
I. Associated features		
1. Nipple retraction		Nipple is pulled in. Do not confuse with nipple inversion
2. Nipple involvement		Tumor directly invades and is contiguous with the nipple
3. Skin retraction		The skin is pulled in abnormally
4. Skin thickening		May be focal or diffuse, > 2mm in thickness
5. Skin involvement		Abnormal enhancement within the skin, which is thickened
	a. Direct invasion	The skin enhances where the tumor directly invades
	b. Without direct invasion (usually inflammatory breast cancer)	The enhancement may be diffuse or focal depending on the extent of invasion of dermal lymphatics
6. Axillary adenopathy		Enlarged lymph nodes may warrant comment, clinical correlation, and additional evaluation especially if new or considerably larger or rounder compared to previous examination
J. Location of finding: An important finding (assessed as anything other than benign) must always be triangulated so that its 3D location within the breast is known		
1. Laterality - describe right, left, or both breasts		
2. Location in breast (clock-face (preferred) in whole number, quadrant or other anatomic location)		
3. Depth (anterior, middle, posterior)		
4. Distance from nipple (in whole cm) - base of nipple to center of finding		

ASSESSMENT CATEGORIES (select one)		
Incomplete Assessment	**Management**	**Likelihood of Cancer**
Category 0: Incomplete: Need Additional Imaging Evaluation OR Category 0: Incomplete: Need Prior Mammograms for Comparison	Recall for additional imaging Need comparison to prior examination(s)	N/A
Final Assessment	**Management**	**Likelihood of Cancer**
Category 1: Negative	Routine annual mammography (with or without contrast as appropriate)	Essentially 0% likelihood of malignancy
Category 2: Benign	Routine annual mammography (with or without contrast as appropriate)	Essentially 0% likelihood of malignancy
Category 3: Probably Benign	Short-interval (6-month) follow-up or continued surveillance mammography	> 0% but ≤ 2%
Category 4: Suspicious	Tissue diagnosis	> 2 but < 95% likelihood of malignancy
Category 5: Highly Suggestive of Malignancy	Tissue diagnosis	≥ 95% malignancy
Category 6: Known Biopsy-Proven Malignancy	Clinical follow-up with surgeon and/or oncologist, and definitive local therapy (usually surgery) when clinically appropriate	N/A