

Acknowledgments

I thank God for the abilities and opportunities to complete this project, for He is the source of all my gifts. “Whatever you do, work at it with all your heart, as working for the Lord...” Col. 3:23

I thank my parents for the love and support, and submit this work in the memory of my father, Graham A. Renberg.

I thank my committee members and mentors for guidance and instruction.

I thank Stephanie for encouragement and confidence.

Table of Contents

I.	Introduction	1
II	Literature Review	
	a. Pathophysiology of osteoarthritis	2
	b. Canine hip dysplasia	9
	c. Experimental models of osteoarthritis	12
	d. Force plate evaluation	17
III.	Experimental Design and Methodology	
	a. Dogs	18
	b. Surgical procedures	18
	c. Radiographic evaluation	21
	d. Lameness evaluation	21
	e. Necropsy	23
	f. Histologic evaluation	23
	g. Statistical analysis	24
IV.	Results	
	a. Radiographic evaluation	25
	b. Lameness evaluation	28
	c. Necropsy findings	33
	d. Histologic findings	33
V.	Discussion	36
VI.	Conclusions	41
VII.	References	42
VIII.	Vita	49