A journey is easier when you travel together. Interdependence is certainly more valuable than independence. This thesis is the result of three years of hard work, whereby I have been accompanied and supported by many people. Writing an acknowledgement is about time to put the research features aside and to offload some gratitude. This thesis marks the end of a long and eventful journey for which there are many people that I would like to acknowledge for their support along the way.

Above all, I offer my humble obeisance to Lord Krishna who provided me endurance and eventually rewarded me with the successful completion of my thesis. In Bhagavad-Gita Lord Krishna says

Sargānāṁ ādir antaṁ ca madhyam caivaivaḥ arjuna
Adhyātma-vidyā vidyānāṁ vādha pravadatāṁ aham

"Of all the creations I am the beginning and the end and also the middle. Of all sciences I am the spiritual science of the self, and among logicians I am the conclusive truth". Lord Krishna has given me intelligence for the logics and conclusions that I have made in the present work. Lord Krishna has always been a support to my thinking mind on this journey into the world of Biophysics.

This work is the direct extension of the guidance, knowledge and wisdom bestowed upon me by my esteemed guide Prof Bimla Nehru, Professor, Dept of Biophysics, Punjab University who has provided not just the seed and the soil for this thesis but has also watered and nurtured it. I am deeply indebted to her for allowing me to take a dip in her vast fountain of wisdom and affection. She has been a perpetual source of inspiration, encouragement and sound advice during all the stages of my thesis work, I would have been lost without her.

My sincere thanks and due regards to my mentor Prof M.L. Garg, Chairman Dept of Biophysics, Punjab University, Chandigarh, an icon of wisdom and academic excellence. His constant encouragement for doing better and still better in my work in order to achieve excellence is appreciable.

I wish to express my warm and sincere thanks to Dr Ashwani Kaul, Dept of Biophysics, Punjab University, for his valuable advice, friendly help and fatherly care & support not only during PhD but also from the first day of my joining in this Dept in 1998 till now. I thank all other faculty members of the Department for their help during the course of my PhD work.

I owe my sincere gratitude to Dr Uma Nahar, Associate Professor, Dept of Histopathology, PGIMER, who gave me the opportunity to work with her and introduce me in real sense to the field of histopathology. Her wide knowledge along with her understanding, encouraging and personal guidance have provided an important basis for the present thesis. I owe a special vote of thanks to Dr Alok Senior Resident, Dept of Histopathology, PGIMER, for providing technical support during
histopathological observations. I must thank Dr S.N. Sanyal, Dept of Biophysics, Punjab University and Dr Amil Kumar, Associate Professor, UIPS for providing with a deluge of ideas in improving the quality of present research work.

I would like to thank technical staff members especially Sham Singh ji (UIPS) for supporting me in carrying out work in animal house and Mr Raj Kumar for administrative work. Thanks are also due to Mr Navtej Singh (CIL, PU) for actively assisting me in photomicrography work.

I greatly acknowledge the UGC and ICMR for their financial assistance to carry out my PhD work in the form of project fellowship and Senior Research Fellowship respectively.

I extend my heartfelt thanks to my close friends Nancy Maam, Punita and Ravi for their concern at the various occasion of my PhD work. My heartfelt thanks to Puneet Bansal and Harikesh (UIPS) for their help and understanding during course of this study. I thank all my colleagues especially Neha Arora, Rajnit, Anshoo, Parveen and Nitu Saini who have always helped me in my lab experiments. I am deeply indebted for their friendly help and support.

There are several people that I like to mention because of the special place in my life. It is truly said that the road to destination is not smooth but some special people around you will always lead you through. I have always enjoyed a great support, love and care from my special friends Nikhil, Pooja Chhabra, Sapna, Shweta Dave, Naveen, Vijaayta, Pavi, Soma and Tajinder. Their friendship has been invariably a booster for me and I feel fortunate to have a strong bond of friendship with them without which life would be bleak. My special thanks goes to my cousin Vicky (Varun Dua) and my colleague and friend Ashish Dhir for their much needed support and constant untiring, selfless and unconditional help to tackle out all problems in the lab.

One good mother is worth a hundred schoolmasters. It has been long and enjoyable journey with good and bad times. And how can I forget my biggest canopy in all those times: My Mother! She is my bridge. When I needed to get across, she steadied herself long enough for me to run across safely. All that I am or ever hope to be, I owe to my angel mother. I attribute all my success in life to the moral, intellectual and physical education I received from her. I find it hard to express my sense of indebtedness to My Father, who is not physically around but whose values have made me what I am and whose memories have always inspired me to strive for the best.

I am falling short of words for my deepest sense of appreciation for my Parent-in-laws for extending love and faith in me and for keeping patience for more than a year. I'm truly thankful to God for being blessed with such a wonderful Parent-in-laws. My sweet sentiments and admiration to my Sister-in-law Gauri Di and Brother-in-law Vikas ji whose regards and love from 1000 miles away are unmatched. My heartfelt love to little star Pari for her sweet lively smile and her innocent talks like “Pooja Mami I love you” wiped off worries and tensions many a times.

Words fail to express my appreciation to my husband Mr Varun Sood whose dedication, love and unrelenting confidence in me has taken the load off my shoulders. The togetherness has been a huge
learning experience and a progressive trust for rest of my life. Without his support the doctoral thesis 
work would not have seen the light of the day.

I would like to thank my brother who proved to be my best friend Mr. Ashwani Khanna for 
being there like a mirror to show me my true reflection without judging me and sharing some refreshing 
moments which gave me an immense energy to carry on. My heartfelt gratitude to him for making me 
believe in the person I am and helping me grow out of smaller things in life.

My paternal uncle Mr. K.K. Khanna deserves special mention for his inseparable support 
and prayers. He is the person who put the fundamentals in my learning character, showing me the joy 
of intellectual pursuit ever since I was a child. I also thank my Massi for her love, encouragement and 
everlasting support during my PhD work. She is always a “phone call away,” and always ready to 
stand by. I extend a special word of thanks to my entire family especially my sis Meenu and Aditi 
for providing a warm and caring environment at home, where I could relax and enjoy the lighter 
moments of life.

Last but not the least I would like to mention my source of inspiration in the field of 
scientific research Achal Mama. His existence in my life has always helped me in inculcating the 
difficult elements required for enduring the PhD life. I am profusely thankful for his relentless support 
to me and his “don’t quit spirit”.

With deepest sense of regards and gratitude I dedicate this thesis to the two most important 
persons of my world:

My Mother — to whom I owe whatever I am today
My Husband — for being a constant source of inspiration

Thanks!

(Prerna Khanna)

May, May, 2010