ACKNOWLEDGEMENT

I would like to thank all who helped me in completing my Ph. D. and providing a wonderful learning environment. Without their generous support, completing this work would have been impossible.

I would like to thank Dr. Mitali Mukerji, my Ph. D. supervisor, for guiding me throughout my stay at IGIB. It was a great opportunity to work with her in this institute. I am greatly indebted for her valuable advice in scientific discussions and supervision. I will always be grateful to her for her kindness and patience.

My utmost gratitude goes to Dr. Shantanu Sengupta, whose guidance, kindness, enthusiasm and inspiration made my Ph. D. a wonderful experience. He always provided detailed and constructive ideas, sound advice and encouragement that made my stay eventful. He was always there whenever I needed him. Throughout my thesis writing, he gave his precious time, read the whole thesis and gave critical comments. Additionally, he was always accessible and willing to help. Sir, you nourished my intellectual maturity that will benefit me my whole life. I am grateful to you in every possible way.

I am greatly indebted to Council of Scientific and Industrial research (CSIR) and especially Director, IGIB, for giving me the opportunity to work in this Institute. The help and cooperation extended by scientists and staff of IGIB is highly acknowledged.

Many thanks go to Dr Ganesan Karthikeyan and Dr Lakshmy Ramakrishnan, our collaborators in Department of Cardiology, AIIMS, New Delhi, for providing us blood samples and their constructive comments. I am very grateful to Dr Saurabh Ghosh, Indian Statistical Institute, Kolkata, who was always there to clear my doubts in statistics.

I am grateful to all the members of Indian Genome Variation Consortium for providing me a wonderful platform to work in a team. I am grateful to all those individuals who participated in the study.
A special thanks to my seniors Chitra and Uma for their kindness, encouragement and care they provided throughout my Ph. D. work. Even in the midst of their busy schedule, they were always ready to help me. A special thanks to my best buddy Shilpy for all her untiring help, encouragement and support. Her feedback and advice on my experiments made me get through the difficult times.

I am also thankful to my lab mates who made my stay in the lab enjoyable, memorable and fruitful. It was great to be a part of company of people like Arun, Doctor Nambi, Sharma Ji, Ram Ji, Tanay Da and Anjali. Thanks to all these lab mates who spent hours with me in canteen discussing lots of great ideas over a cup of tea. I am indebted to Gaurav, who helped me in completing most of my work. Special thanks to Doctor Sahab for his wise words. A special mention for my juniors- Priyanka, Shadab, Lijo, Niti, Bala, Akki, Vinod, Anni, Richa, Rishi, Manu, Vijay, Nadeem, Harleen and Tani who made my stay in the lab memorable. I must also extend my thanks to people on 6th floor- Rajesh, Aradhita, Prashant, Farhan, Priyanka, Sudheer Ji, Faruq, Pankaj, Tav Pritesh, Jyotsna, Rajsekhar, Amrender, Amit, Kamya, Jyoti, for all their help.

The assistance provided by Shri Sukh Pal Ji is greatly acknowledged. Financial support from University Grants Commission is also sincerely acknowledged.

I want to thank my papa, mummy, brothers and Isha for enormous amount of faith in me and for always giving me unconditional love. Without their love and support, nothing would have been possible.

I would also like to thank those, who were important in completing my thesis and also expressing my apology that I could not mention them personally one by one. Last but not the least, I would like to thank Almighty for giving me company of all these wonderful people around me for all this time.

Jitender Kumar