Acknowledgements

The four year long voyage through the rough seas of research has come to an end. Unforgettable moments of agony and ecstasy, anguish and elation. Everything molded into a sense of success and accomplishment with the contributions of many different people, in their different ways. It is a pleasant aspect that I have now the opportunity to express my gratitude for all who made this possible and an unforgettable experience for me.

First and foremost I would like to thank God. You have given me the power to believe in myself and pursue my dreams. I could never have done this without the faith I have in you, the Almighty.

I take immense pleasure to express my sincere and deep sense of gratitude to my supervising guide and mentor, Dr. D.V.R. Sai Gopal, Professor, Dept. of Virology, Sri Venkateswara University, Tirupati for giving me the confidence to explore my research interests and the guidance to avoid getting lost in my exploration. I am very much thankful to him for accepting me as a student at the critical stage of my Ph.D. He was a fabulous advisor, sharp, cheery, perceptive, and mindful of the things that truly matter. Apart from the subject of my research, I learnt a lot from him, which I am sure, will be useful in different stages of my life. Once again I solemnly submit my honest and humble thanks to him for bringing my dreams into reality.

I would like to express my deepest gratitude to my external Guide Dr. Usha Kalawat, Associate Professor, Department of Microbiology, Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati for her sustained enthusiasm, immense support, suggestions, motivation and exemplary guidance at every stage of my doctoral research. I am ever grateful to her, for her friendship, patience, kindness and empathy rendered upon me.

I express my sincere thanks to Dr. B. Siddhartha Kumar, Professor, Department of medicine, Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati for graciously agreed to be my Co-guide and his precious suggestions and timely feedback in my research was invaluable. His motivation and insistence on perfection made me to push myself to give my best for which I will be ever thankful to him.
I would like to express my deep, sincere and special gratitude to Dr. Abhijit Chaudhury, Professor and Head, Department of Microbiology, SVIMS, Tirupati for giving me the opportunity to do part of my research in their Department and providing genuine support throughout this research. He has given my career in science a purpose and a meaningful direction. I am also thankful to him for his motivation even during the tough times in my Ph.D. pursuit.

I express my gratitude to Dr. K.V. S. Sharma, Professor of Statistics, Former Principal, SVU college of Sciences, Sri Venkateswara university Tirupati for his valuable suggestions on statistical part of research and also doing statistical analysis of my research work.

I take this opportunity to say my sincere thanks to Dr. W. Rajandhra, Vice-Chancellor, Sri Venkateswara University, Tirupati for giving an opportunity to pursue this research work.

My sincere thanks to Dr. B. Vengamma, Director & Vice-Chancellor, SVIMS, Tirupati for giving an opportunity to pursue a collaborative research with their institute, valuable suggestions, encouragement and constant support which have provided good and smooth basis for my Ph.D. tenure.

Very special thanks goes to Dr. N. Prabhakara Rao, Former Vice Chancellor, Sri Venkateswara University, Tirupati and Dr. K. Jayanth Rao, Professor of Zoology, Former Dean, Faculty of Sciences, Sri Venkateswara University, Tirupati for giving an opportunity and support to pursue this research work. I was so thankful to them for playing a prominent role and helping me at critical stage of my research career.

I take this opportunity to say sincere thanks Dr. M. Hema, Associate Professor & Head, Department of Virology, Sri Venkateswara University, Dr. M. Charitha Devi (Assistant Professor), Dr. R. Ranjani (Assistant Professor), Dr. G. Narasimha (Assistant Professor), (Dept. of Virology, SVU) and Dr. B. Venkata Ramana, Assistant Professor, Department of Microbiology SVIMS for their constant support and encouragement during my research tenure.

I owe my gratitude to Dr. R. Jayaprada, Assistant Professor, Dept. of Microbiology, SVIMS who supported me and encouraged me all through my study period and her care towards me.

I express my gratitude to Dr. A. Mohan, Professor & Head, Department of Medicine, SVIMS, Tirupati for his valuable suggestions during the preparation of my research protocol.

I gratefully acknowledge Dr. Y. Raghava Reddy, Medical Officer, Health Center Sri Venkateswara University, Tirupati for providing scrub typhus suspected samples and for helping me preparing pamphlets on scrub typhus.
I owe gratitude to my seniors Dr. A. M. Johnson, Mr. Kesava Raj, Dr. K.P. Srinivas, Dr. Sivarasad, Dr. C.V.M. Naresh, Dr. B. Vishwanath, and Mrs. T. Vidya who willingly devoted so much time in clarifying my doubts and giving their suggestions. I extend my thanks to my friends A. Praveen Kumar, A. Janardhan, all the colleagues, juniors and non-teaching staff for their dedicated assistance during my research period. I owe gratitude to Dr. Jahangeer for showing me first positive case of Scrub typhus and also thankful to Dr. G. Sathish Kumar Reddy, Mrs. Madavi Latha and Dr. G. L. S. Sumanth Kumar who supported me and encouraged me all through my study period. It's my pleasure to acknowledge Nagaraj for providing control strains to prepare Weil-Felix test antigens. I would specially like to thank the M.Sc. Post Graduates and B.S.C. MLT students and Technical staff and non-technical staff of Department of Microbiology, SVIMS, Tirupati.

I thank all participants who willingly and selflessly donated blood for my experiments during my research endeavor. Besides this, several people have knowingly and unknowingly helped me in the successful completion of this project.

I am at dearth of words to express my gratitude to my parents Mr. K. Chinna swamy and Mrs. K. Neelavathi who have been patient, supportive and caring. They have been selfless in giving me the best of everything and I express my deep gratitude for their love without which this work would not have been completed. This thesis is indeed a realization of their dream. Also, I acknowledge my dear elder sister Mrs. K. Santhi, younger sister Ms. K. Bindu, brother-in-law L. Baleshwarao, and my elder sister son Pragnay for their assurance and good-will in every way. A journey is easier when you travel together. Interdependence is certainly more valuable than independence. My huge, warm thanks to E. Ullas Kumar for your support and care. You was always beside me during the happy and hard moments to push me and motivate me.

Needless to say that there were times of hard feeling and war of words too. But it only taught me to be more patient, considerate and shaped me to face the more difficult challenges in future. I end these dry words of appreciation with a deep sense of gratitude and obligation, and with a hope to reciprocate in due course.

USHA.K