## Acknowledgement

## "Arise! Awake! And stop not until the goal is reached". ~Swami Vivekananda

My PhD journey was one of the most learning, fruitful and challenging phases of my life. It has evolved me into a better person with a clear vision for my professional and personal life. It was possible because of my teachers, family, mentors and friends who shape and guided me during this phase. My sincere gratitude towards them and I take this moment to express it.

My guru and PhD supervisor, *Prof. Rasheedunnisa Begum*, an incredible person who gave me the opportunity to pursue a PhD – focus on the research problem that I had a passion for working on. My deepest thanks to her for shaping my qualitative and analytical skills, scientific aptitude, and, most important, being humble, courageous and persistence to complete goals. She had guided me through the times when we were a new team without grants and resources specific for diabetes research to the times where now, we have completed DBT projects, publications, and acquire knowledge in diabetes. This journey has been filled with sweet and bitter memories, but I always treasure them; thank you so much, Ma'am.

My mentor, *Prof. A.V. Ramachandran* (RB Ma'am collaborator), who guided me in diabetes research, brainstorming ideas, and challenging the research problem from all perspectives. In addition, he encouraged us to interact with fellow scientists and scholars during conferences and exchange the transfer of knowledge. He builds my consciousness to explore the problem to not just answer the question, but how it would impact every factor associated with it.

I am sincerely thanking *Prof. C Ratna Prabha* (current HOD) and *Prof. Sarita Gupta* (ex-HOD and doctoral committee member) for their support and valuable feedback during my PhD. Furthermore, I'm thankful to the doctoral committee members, *Prof. Pushpa Robin* and *Prof. Vihas Vasu*, for providing meaningful suggestions to improve my scientific research. I also like to thank all the faculty members of the department. I sincerely appreciate help from our collaborators *Dr Ravi Sankar Bhaskaran* (University of Madras, Chennai), *Dr Mahendra Narwaria* (*Asian Bariatric, Ahmedabad*) and *Dr Bhavna Desai* (20 Micron, Vadodara), for providing resources to complete few experiments of the thesis.

I'm also thankful to the department and university office staff, *Bhartiben*, *Axita Ma'am*, *Sandeep Bhai*, *Anilbhai*, *Shaileshbhai*, *Manishbhai*, *Chiragbhai*, *and Milind dada* for helping through administration task and documentation. Part of my research work included animal experimentation which would have not been so smooth without support from Animal House staff, *Rameshbhai*, *Balvantbhai* and *Vijaybhai*.

The part of this journey was filled with beautiful memories with the *RBL family - Roma*, *Sayantani and Nishant* (Diabetes team); *Ashlesha and Tina Ma'am* (Dicty Team) and *Shoab sir*, *Shahnawaz* and *Jayvadan* (Viti Team). We, the diabetes team, build it from grassroots - helping in grant writing, discussing, recruiting human volunteers, conducting camps, designing animal experiments, and troubleshooting complex problems. Those time made us cry, rejoice, and celebrate together as a team, I'm proud of my team for achieving in short span of time. I'm thankful to them and wish them luck in their future endeavours. Thank you to the whole RBL family for helping, supporting, and working together. The lab atmosphere were filled with laughter, pranks, picnics, family dinner and pictures that helped to combat stressful times. I also take this moment to thank master's dissertation students whom I mentored during the process - *Sneha*, *Nitisha*, *Harshita*, *Dhara*, *Nilay*, *Naisargi*, *Satyashree*, *Darshan and Madhu*.

The time spent at the department was lively and pleasant with other PhD scholars, including *Arpi*, *Ruma*, *Tanvi*, *Aakash*, *Sejal*, *Milton*, *Shivani*, *Sandeep and Riddhi*. I would also like to acknowledge *UGC-NFST* for the fellowship and infrastructure facilities.

I am thankful to my parents *Jaimini & Nandubhai*, and brother *Garvit* for being my Planck's constant, continuously supporting and motivating me throughout this phase to complete the PhD goals. The journey started with explaining them in layman language what my research focused on, helping me set up diabetes camp and preparing for the conferences, giving a mock presentation before seminars, motivating during rejections, and rejoicing during rewards. There was a moment when I wanted to give up, but they stood with me to inspire and realise my strengths. I will be in debt to them forever.

Last but not least, PhD phase is part of the whole life which involved ups and downs. I wish to thank my family members *Mama*, *Mamee*, *Masi*, *Megh*, and *Malhar*, for supporting me and encouraging me to achieve my goals. To share the high and low moments, you need friends outside the professional life, I would like to thank my forever friends

- Shraddha, Saniya, Rohan, Hitwa, Sukhbir, Shweta, Dhruv, Nitin, Manasi. They listened to my story involving the research world, struggles and rejections and finally achieving goals. I sincerely appreciate each person who is/had been part of my PhD phase. If I have forgotten to mention you, I do express my gratitude towards you for helping me. As I embarked on a new journey from here, I know that I have endured, learnt, and achieved so much that it has prepared me most unconventionally. I take the memories and lessons to build a better world and contribute my understanding to science.