

Acknowledgements

I would like to thank my advisor, David Tirrell, for his tremendous support and guidance throughout my graduate work. I sincerely appreciate the intellectual independence that he fostered in the laboratory, and I hope to emulate his open-mindedness, creativity, and scientific rigor in my own career. I would also like to thank the members of my committee, Robert Grubbs, Anand Asthagiri, and Guruswami Ravichandran for their thoughtful comments and advice. I will always be extremely thankful for the experience of learning and working in Professor Ravichandran's laboratory, and for his kindness and unending encouragement. I am grateful for the opportunity to have spent the last five years at Caltech conducting research under the tutelage of such great scientists.

Thank you to all members of the Tirrell lab past and present. I have really enjoyed working in the lab with such great people and I am grateful for their friendship and scientific enthusiasm. In particular, I would like to thank Rebecca Connor for so many great memories, and for teaching me how to always approach science with a curious mind, perseverance, and humility. I would also like to thank Chethana Kulkarni, Julie Champion, and Shelly Tzlil for their kind support and advice both scientific and otherwise.

A portion of this work was performed in collaboration with Christian Frank, an amazing graduate student in Professor Ravichandran's laboratory. I thank him for all his hard work, dedication, patience, and for teaching me, several times, the basics of mechanics. Most of all, I thank him for his friendship.

This work would not be possible without the help from fantastic support staff at Caltech. I am thankful to Rochelle Diamond in the flow cytometry facility, and the staff at the Proteomic Exploration Laboratory, especially Geoff Smith and Mike Sweredoski. I deeply appreciate all the time and effort they spent teaching me how to perform proteomic research.

I am truly lucky to have made some wonderful friends at Caltech – Melissa Pope, Katie Brenner, Katie Galloway, and Sarah DeFusco. Sharing funny stories about life and work every Thursday at lunch has been a great source of strength, support, and balance for me during my graduate work.

Finally, my deepest gratitude goes to my family, especially my parents and my husband. I thank my parents for their unfailing love, encouragement, patience, and for all the sacrifices they made for me to have such wonderful opportunities. Any accomplishment that I have made has been because they gave me the courage and better-designed wings. And to my husband, Derek, I am so grateful for his unconditional love, and for encouraging me to strive to fulfill all my hopes and dreams. I thank him for always believing in me.