

ACKNOWLEDGMENTS

I whole heartedly thank my mentor Nick Navin, for being my scientific role model, for giving me the best projects, teaching me how to do good science, shaping my scientific curiosity by his unnerving enthusiasm and making me the scientist I am today. I am immensely thankful to my co-mentor Andy Futreal for giving me the opportunity to work in such a large-scale project, believing in me for taking it to completion, always having my back and supporting me in front of our collaborators and instilling the confidence in me to present my work. I couldn't have asked for such amazing mentors.

Throughout my PhD, I have been very lucky to have an extremely supportive advisory committee, Ken Chen, whom I thank for teaching me computational method development and always giving useful inputs to further refine my project, Bora Lim who not only taught me the basic breast biology but also made me think from a clinical lens and always was super supportive and caring during these past years. I sincerely thank Clinton Yam for providing useful inputs in the ARTEMIS project and for agreeing to join my committee to help me with my PhD. I am also thankful to past members of my committee Arvind Rao and Anshumali Shrivastva for always asking very inquisitive questions and helping me think from a purely computer science perspective.

I am immensely grateful to Shanshan Bai and Min Hu with whom I started my journey of the breast cell atlas project, who taught me my first single cell dissociation, spent odd hours doing those terrible time course experiments, helped me with my never ending linux issues and were lovely travel buddies with whom I had a lot of fun in Boston and NY and good times we had that I would rather not mention here – “What happens in NY, stays in NY”.

I would like to thank Jake Leighton with whom I joined the lab and who always has been a very good friend as we always ended up getting similar fellowships and talked nonstop about our furry friends. So many amazing lab members Charissa Kim, Alex Davis, Aislyn Schalck, Naveen Ramesh, Yun Yan, Runmin Wei, Darlan Minussi, Siyuan He with whom I have had morning, afternoon and evening coffee breaks and fun times outside the lab. I thank Emi Sei for all the fun and chirpiness we had in the lab, from filling up Nick's room with balloons to surprise decorating other's benches in pink tape and for the confetti I still find in my pockets. All other lab members, past and present and growing, have been like a second family.

To the people with whom I closely worked with in Navin Lab - Yiyun Lin, Yun Yan (Team TNBC), Kaile Wang and Kris Wang (Team DCIS), thank you for being awesome project mates and friends. I would also like to thank Anna Casasent for being a good friend, mentor, a good listener and being so caring.

I am grateful to members of Futreal lab and Zhang lab, Hannah Beird for giving me my first project during my rotation and always patiently answering all my questions, past members Kadir Akdemir (now an amazing PI) for guiding me in choosing my thesis mentors and motivating me to think about cancer research during my time at Rice, Latasha Little for being so efficient in managing all the samples shipped from across the world and helping me learn the experimental details and all other members John, Henry, Mingchu, Per and others for their useful inputs during lab meetings.

I have learnt so much from my collaborators at Houston, I thank Dr. Thompson for always being so supportive and positive, Dr. Kim for explaining me the clinical aspects of PDAC, Dr. Fei Yang and Dr. Edwin-Parra for their unwavering support in the VECTRA projects, Dr. Vinod Ravi for being so

supportive and introducing me to the clinical side of Sarcoma and TLS projects, and Dr. Litton for giving me an opportunity to work in the TALA project and external collaborators at UC Irvine, Kai Kessenbrock, Devon Lawson and Kevin Nee for their tireless support in the breast atlas project.

I would like to thank members of Team PRECISION at the Netherlands, UK, and US, Jelle Wesseling, Esther Lips, Lodewyk Wessels, Proteeti Bhattacharya, Misha Sheinman, Tycho Bismeijer, Mathilde Almekinders, Elly Sawyer, Maria Roamn-Escorza, Serena Nik-Zainal and Shelley Hwang for being amazing collaborators, mentors and coauthors.

I thank my lab rotation advisors, Traver Hart with whom I started my PhD and who encouraged me to pursue doing a rotation in other labs, Jennifer Wargo and Tatiana Karpinets who gave me an opportunity to be involved in my first paper published in Science, Chris Bristow who mentored me during my internship and taught me to be meticulous, organized and acquire excellent presentation skills.

I am very thankful to Lurtese Gardner and Elva Lopez who have always been so cheerful, wonderful and caring and all the administrative staff at the Department of Genetics, Genomic Medicine, T32 and GSBS. All the members of GSBS staff, Dr. Mattox, Brenda, Amy, Karen, Lily, Joy and Bunny who helped me and always supported me to grow as a student. I'm thankful to Dr. Sanjay Shete and Dr. Prahlad Ram for being amazing QS directors.

When I first started my PhD, I received so many scientific inputs from friends at MD Anderson and Rice - Samir Amin who always explained science with such passion and helped me refine my scientific thought process over several evening tea sessions, Kunal Rai who helped me prepare for interviews,

Ayush Raman who helped me with my STATS assignment, Shubham Manchanda who always in his own way thinks of me as a Science Super hero working on some Nobel prize worthy projects, Titiksha Vats, Pushpendra Shishodia, Akshat Jariwala, Aparna Subramaniam, Ajay Shastri, Gautam Sikka and Archana Sharma and little Garvin who have made living in Houston so much fun.

None of this would not have been possible without the love and support of Sahil Seth, my best friend since 2007 and husband, who stood with me, hugged me, listened to my nonstop whining and taught me so much. My parents and grandparents whom I have missed so much these past years, and Sahil's parents and family and our extended families, aunts and uncles and cousins who supported me in my path to getting a PhD. Last but not the least, my fur babies, Twisty, Satchmore, Snoopy and Patchy who make me smile every day.

Finally, this project would not have been possible without the generosity of our funders, the NCI T32 fellowship, Dr. Ann Killary and Dr. Wistuba, Rosalie B. Hite fellowship, Cancer Research UK and the Chan Zuckerberg foundation.

Thank you everyone!