

*Acknowledgements*

I don't like to move much. I spent the first 18 years of my life living in central Minnesota. I got this letter in the mail talking about a place called Caltech in Pasadena, California. What impressed me the most, were the average test scores of its students. They seemed to score very well. Hmm, I could go to college in California. I could learn to surf, maybe learn to ride a skateboard. It could be fun. I came out and investigated and found a community of lots of smart people who liked science. And so, I came. In almost 12 years here, I haven't learned to skateboard or surf (surprise, surprise), but I sure have learned a lot of other stuff. I've found that studying science day in and out hasn't made me lose my love and enthusiasm for science. I've learned that I like to interact with people and discuss things. I've learned I like to be part of a team.

For being my home for the past 12 years, I want to thank the entire Caltech community. Some of my friends were burnt out on Caltech after surviving 4 years as an undergraduate, but I was not. Sure, there were times when things were bad, but there is nowhere else on earth that has the unique properties of Caltech. I attribute it mostly to the people. People who understand that science is fun. People who know that bureaucracy is there to get things done, not a way to shuffle papers. People who like a good prank. I could go on, but I would not have stayed in Los Angeles as long as I have if Caltech hadn't made it a great place to live and work.

The best part of Caltech was clearly meeting my wife, Erica. Being the great physicist she is, I was sometimes jealous. I've long since given that up and am enjoying

the ride following her career as she turns into a great scientist. She has given me encouragement when I needed it, and, most importantly, put up with my roller-coaster life. Its been a blast and I'm looking forward to the new venue.

I might not be thanking Erica at all if it weren't for my advisor, Bill. I need to thank you for letting me back into Caltech after graduating as an undergraduate. I know you officially didn't do anything, but if you weren't willing to take me on as a student if I were accepted to grad school, I'm not sure I would have got in again. And being able to attend Caltech's grad school allowed me to stay in the area and get married! Of course, you've done much more than give me a place to study and work for the past few years. Your enthusiasm is catching and would often pick up my spirits as my experiments would get frustrating. I will always remember your teaching style and think of you whenever I try to make sure my audience is paying attention by asking them direct questions.

Now we come to the Goddard group. I can't imagine my grad student career anywhere else. For Jim Gerdy and Jan Peters in the early years, thanks for keeping the learning fun. Thank you, Darryl, for keeping the computers running and answering all my obscure programming and software questions. I need to thank Ken Brameld, Derek Debe, and lately Joe Danzer and Changmoon Park for being great officemates and for the research and scientific discussions we've had. I need to specifically thank Vaidahi for her help with all things biological and Cecco for almost everything I actually understand about quantum mechanics. I've interacted with the rest of the Goddard group to a greater and lesser extent. If I have any complaints about the group, its that I didn't get to know all of the group members better.

No man can live on bread alone and there are many other people here in Pasadena who kept me sane as I thought about forcefields every day. Thanks to the Graduate Bible study group who met in our apartment almost as long as I was a grad student. We had great fun and great discussions. I know I benefited from Gary's wisdom many times. I know Habakkuk and PERL so much better thanks to his frequent advice. Thanks to my friends at Lake Avenue Church for keeping me on track and all the encouragement. Thanks in particular to Jerod, John & Betsy, Marko, Michael, Dave, Tim, Lanny, all my guys, and pretty much everyone else. You were my creative outlet when research sometimes dragged me down.

My parents and family always supported me from afar and its great to know they love me and are supporting me in whatever I do. I know it was hard for my folks to let their son head all the way out to California to go to school, but I think things have turned out alright. I won't mention my in-laws specifically because I think of them as part of my family, so they should feel included in the first sentence of this paragraph!

Finally, we come to the purpose of life. I wouldn't know what to do with myself if I didn't think there was something greater going on with life than just running around and trying to do interesting stuff. I have to thank God for clueing me in on His existence and His great patience as I slowly figure out who He is and what He wants me to do. I'm not sure where I'm headed in life, but I know who I'm following and why. Thanks for giving me a Why, God.