

Acceptance of the Mineralogical Society of America Award for 2007

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It is an absolute honor to accept this year's MSA award. In preparing this acceptance speech I looked at the list of previous recipients of this award and found it a very humbling experience to see my name alongside so many famous names. I can't help feeling that my award must be the result of a fortunate clerical error!

Now is a very exciting time to be working in the field of mineral magnetism, as new experimental and computational techniques allow us to tackle the key issue of magnetism at the nanometer scale. I have been extremely fortunate to be in the right place at the right time to take advantage of some of these techniques, and it is only with the hard work and dedication of my friends and colleagues that I am in a position to accept this award today.

My introduction to mineral magnetism came from Andrew Putnis, whose undergraduate lectures taught me the importance of phase transformations and microstructures in magnetism. His lectures inspired me to take on a Ph.D. tackling the problem of magnetism and microstructure, and then to continue as a post-doc in Muenster. I was very lucky to arrive in Muenster at a time when Andrew was in the process of building up an excellent research group, and I benefited enormously from working along side people like Victor Vinograd, who almost succeeded in teaching me about cluster variation methods and short-range order, and Udo Becker, who inspired me to take up Monte Carlo simulations. I have very fond memories of my time in Germany, which somehow always seemed to end up in Andrew's basement with an electric guitar in one hand and a microphone stand fashioned out of a camp bed and a lampshade in the other, trying to reach the high notes from Led Zeppelin's "Black Dog." I would like to thank both Andrew and Christine Putnis for making my years in Germany the most pleasurable and productive time of my career so far, and apologize for all the times I fell asleep on their sofa after one too many "G+Ts."

I also owe a great deal of thanks to Simon Redfern, who managed to kickstart my Ph.D. by coming up to me fairly early on, clutching a scrap of paper he'd torn out of EOS, advertising the visiting fellowship program at the Institute for Rock Magnetism in Minneapolis. This led to a very busy and extremely cold three weeks in Minnesota in the middle of winter that gave me a fantastic start to my research career. It was there that I first met Subir Bannerjee, who along with David Dunlop, would later be so supportive of my research that I would like to take this opportunity to say a big thank you to them both.

Simon was also responsible for bringing me back to Cambridge after my time in Muenster, where we worked together on the low-frequency elastic properties of perovskites. This enabled me to broaden my research into a completely new area, something



that I've often been bad at, but Simon excels at.

After moving to back to Cambridge in 2001, I was fortunate to meet Rafal Dunin-Borkowski, whose expertise in the field of electron holography was producing incredible images of magnetic microstructures in patterned alloys. I immediately saw the potential of this technique for mineral magnetism, and together with Rafal was able to finally solve some of the problems that Andrew had alluded to in his lectures years before. I would like to thank Rafal and rest of "team holography," especially Takeshi Kasama (who is not only a TEM genius, but one of the nicest people you could hope to work with), who have kindly allowed us to exploit this technique ever since.

A pivotal event in my career was a chance meeting with Suzanne McEnroe at a meeting in Strasbourg. There she presented a poster describing the unusual magnetic properties of exsolved ilmenite-hematite. Her description of strong and stable remanent magnetization acquired by such intergrowths got me hooked, and produced a collaboration that has strived to unravel this mystery ever since. Suzanne's ability to carry out the most detailed petrographic and rock magnetic measurements on such unique samples, and her understanding and appreciation of the bigger picture, is the perfect compliment to the nanoscale information provided by my experimental and computational work. Together with Peter Robinson, whose ability to ask the most difficult questions and to explore fully the consequences of my sketchy theories is a crucial component.

Finally, I thank my wife Sarah for her love and support (despite the fact that I'm missing our wedding anniversary to be here today!) and my two children Michael and Rosie, who make the whole thing worthwhile.