Benjamin Schmitt

Benjamin Schmitt is Head of Collaborations & Research for Australia and New Zealand. His areas of expertise and professional experience cover research projects and application development in Magnetic Resonance Imaging (MRI). His Ph.D. in Physics/Biophysics from the German Cancer Research Center in Heidelberg (the 'DFKZ') in 2011 focused on the implementation of Chemical Exchange Saturation Transfer Imaging on a clinical MR platform. During an extended post-doctorate at the Centre of Excellence for High-Field MR at the Medical University of Vienna, Austria, he worked part-time as applications developer in the musculoskeletal pre-development team in Erlangen, where he adapted and helped integrate several MR sequences to enable clinical 7T MR imaging.

In his current position Benjamin leads a team of five collaborations scientists working closely with Siemens' research customers in the region to explore the development and implementation of novel MR scanning techniques in clinical routine.

Sydney, Australia

How did you first come in contact with MRI?
It began with the NMR of crystals, the research area of one of the professors at Technical University Kaiserslautern, Germany, where I did my Master's degree in Biophysics. The technology immediately attracted my attention, but I wanted to pursue something more applied to human/medical research in my diploma thesis, so I got in touch with Professor Peter Bachert who leads the MR spectroscopy group at the DFKZ. It was spectroscopy that brought MR to life for me.

What fascinates you most about MRI?
MRI is one of the very rare applications where the principles of quantum mechanics can be applied or even visualized in a macroscopic world. From picture to proton as one famous piece of literature calls it [1]. Australia and New Zealand boasts a motivated MR research environment with some of the brightest minds and thought leaders in the field. This holds especially true for MR in RT where the work from the MR research groups that we work with in Australia set standards in MR in RT worldwide. It paves the way for MR-only treatment planning through new ways, for example, for MR-based attenuation correction in the pelvis or for enhancing the implementation of distortion-reduced MR methods in the treatment planning process.

What do you think are the most important developments in Healthcare?
The advent of faster and more powerful computer hardware in compact space has opened up new avenues for accelerating scans, making examinations more tolerable and more accurate for clinical patients, so it is exciting to see concepts such as Simultaneous Multi-Slice and Compressed Sensing become clinical reality. I believe that computer science can help so much more in medical imaging in general and that this ever increasing computational capacity will turn machine learning approaches into clinical reality, raising our ability to diagnose accurately to the next level.

What would you do, if you could do for one month whatever you wanted?
I would travel around Australia and New Zealand with my family. It is amazing how many beautiful places this part of the world has to offer. I have been here for three and a half years already and despite frequent travelling I have only seen a fraction of what the Pacific region has to offer. My little children love the beach and have probably already spent more time in the sand than I ever did in my entire life before coming to Australia.

Workwise, if I had a whole month, I would make a thorough review of all the wonderful collaborative research work that we have been doing in Australia and New Zealand.

References

1 DW McRobbie, EA Moore, MJ Graves, MR Prince. MRI from picture to proton. Cambridge University Press.