Meet Siemens Healthineers

Siemens Healthineers: Our brand name embodies the pioneering spirit and engineering expertise that is unique in the healthcare industry. The people working for Siemens Healthineers are totally committed to the company they work for, and are passionate about their technology. In this section we introduce you to colleagues from all over the world – people who put their hearts into what they do.

Kelvin Chow

Kelvin Chow studied Engineering Physics during his undergraduate training at the University of Alberta (Edmonton, Canada) before completing a PhD in Biomedical Engineering at the same institution in his hometown of Edmonton, Alberta, Canada. He trained as a post-doctoral fellow at the University of Virginia (Charlottesville, VA, USA) and joined Siemens Healthineers as a Senior Scientist in 2016. Kelvin is part of the MR collaborations group, working together with researchers around the world to develop new MRI techniques. His primary research focus is on quantitative tissue characterization with cardiac MR. Together with colleagues and leading collaborators in the field, Kelvin's recent projects involve the ongoing development of MyoMaps, quantitative myocardial perfusion, and the Cardiac Dot Engine.

Chicago, USA

How did you first come into contact with MRI?
During the last year of my undergraduate studies, I explored various options for a master's research project. At that time, I met Dr. Richard Thompson, who showed me movies of the beating heart and visualizations of flow within the heart – I was hooked! It was (and still is) fascinating to me that we have the technology to acquire such detailed images that tell us about how our body works, all measured non-invasively using MRI. What started as a short master's research project turned into a doctoral thesis, a post-doctoral fellowship, and now a career with Siemens Healthineers.

What is the most fascinating aspect of MRI?
How there's always something new in MRI! The underlying basis for MR imaging is remarkably simple – apply a time-varying sequence of radiofrequency pulses and spatial magnetic gradients in the presence of a strong magnetic field. And yet, the pace of MRI advancements has not slowed in the last 40 years of development, with new techniques still being developed by simply changing the timing and pattern of pulse sequences. Advancements in hardware performance and computational power have also opened the doors to techniques once not thought to be possible.

MRI is also unique in the research world due to its incredible translational potential. A researcher can use their knowledge of MRI physics to design a pulse sequence, program it on their laptop, and use it to image a human subject ... all in a single day! The short development cycle from an idea to clinical application makes MRI one of the most exciting research fields to work in.

What do you think are the most important developments in MRI and in Healthcare?
Increased availability of medical imaging such as MRI is an important area of research in order to bring its benefits to a wider population. The value of information provided by MRI in the diagnosis and management of patients is well established in many diseases, but MRI is still a highly specialized technique that is not widely used. Developments such as highly accelerated imaging with Compressed Sensing and automated technologies such as the Dot Engines help to shorten scan times and reduce complexity in acquisition and interpretation, which are essential to expanding the availability of MRI to more patients.

The evolution of MRI and healthcare overall toward precision medicine also holds promise for improved patient care by personalizing treatments for each individual instead of applying the traditional "one-size-fits-all" approach. Precision medicine relies on accurate and comprehensive characterization of a patient's disease and overall health, an area where MRI excels.

For example, a single cardiac MRI exam can provide a wealth of information about the heart, including cardiac structure, function, viability of damaged tissue, and micro-structural changes that may precede disease progression. Development of accurate and precise quantification techniques such as these may provide valuable information for personalized treatments in the future.

Outside of work ...
In my free time, I am still a huge geek for anything technological. I enjoy being driven around by the artificial intelligence in my Tesla electric car, expanding my Lego collection, and dabbling in 3D printing. Last year, I started a high-intensity aerobic exercise program with the goal of running my first 5 km race, which I completed earlier this fall. Along the way, I had regular cardiac MRI exams in order to see for myself the benefits of exercise on my heart!

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