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.

Axel Krafft, Ph.D.

Axel Krafft graduated in physics from Heidelberg University, Germany, where he also obtained his Ph.D. in 2010. During his time as a diploma and Ph.D. student at the German Cancer Research Center in Heidelberg, Axel was already working in the field of interventional MRI research. There, he developed sequence and hardware concepts for device tracking and MR thermometry under the supervision of Professor Michael Bock. In 2011, Axel moved to Memphis, TN, USA, and joined the MR Physics group of Claudia Hillenbrand, Ph.D. at St. Jude Children's Research Hospital as a staff scientist to work on methods for ultra-short-echo-time (UTE) imaging and quantitative T2* assessment in the liver. Axel relocated to Germany in 2014. There, he continued his research in the field of MRI under Professor Jürgen Hennig in the medical physics division of the Department of Radiology at University Hospital Freiburg. In Freiburg, Axel initially worked as a research associate in experimental radiology and eventually led an independent research group in cardiovascular MRI.

In 2019, Axel joined Siemens Healthineers as an application developer for interventional cardiac MRI, a role that allowed him to draw on the expertise gained during his work in academia. Since 2023, he has been a solution owner in the MR Therapy team (headed by Arne Hengerer, Ph.D.). In this role, he is responsible for product management and definition in the field of interventional MRI, including MRI-guided percutaneous and (cardio)vascular procedures. Axel's recent work has focused heavily on expanding interventional MRI to 0.55T.

How did you first come into contact with MRI?
My first encounter with MRI was as a patient when I needed a brain scan after an accident in high school. However, my first, more deliberate contact was when I saw a job opening for a diploma thesis project in Michael Bock's lab at the German Cancer Research Center in Heidelberg. When I started my studies in physics back in 2000, I planned to eventually specialize in astronomy. But during my second or third year, some special courses on medical imaging caught my attention and I decided to specialize in medical physics. The actual topic of my diploma project was on tracking techniques for a robotic assistance system in MRI. I found this pretty cool because it included a bit of everything: hardware, some programming, and lots of MR scanning. After that, I was bitten by the MRI bug, and today I am still fascinated by all the possibilities MR imaging offers.

What do you find motivating about your job, and what are in your opinion the most exciting developments in interventional MRI?
While our job and everyday obligations are sometimes challenging and demanding, I am grateful to work for Siemens Healthineers in the field of interventional MRI. It allows me to bring all the expertise that I've gained over the years in different locations and settings into my daily work. In our field, we have the chance to develop something which can have a direct impact on patients. One striking example for me is the treatment of arrhythmia, which is also done in the MR environment in a few specialized centers. After successful treatment, the patient can literally leave the hospital without any disorders. The opportunity to contribute to such developments and work with our collaborators and partners on improving patient care is something I find motivating and rewarding.

To me, the most exciting development in our field comes with our "new" field strength of 0.55T. Interventional MRI is nothing new and probably goes back more than 25 years. Clinicians recognized the value of MRI in the context of interventions (lack of ionizing radiation and excellent soft tissue contrast are just two of the many benefits) some time ago. Still, interventional MRI was in some sort of chicken-and-egg state: lots of potential, but also lots of challenges, such as making device (needles, catheters, etc.) safely usable in the MR environment. With 0.55T, there is a great opportunity for reducing the technical entry barrier into the MRI environment, and this might truly help solve the chicken-egg problem. With that in mind, I am very excited to see how our strategic partnership with Cook Medical evolves, and hopefully we will jointly expand interventional MRI. The fact that a larger device manufacturer has entered the interventional MRI space has gained a lot of attention in the field. To me, these are very exciting developments.

What would you do if you could spend a month doing whatever you wanted?
Well, I think this depends a little and I don't have one clear answer. While my job allows me to interact with our clinical partners quite frequently – we even occasionally have the chance to observe clinical work when visiting our partners – I can imagine that a "look behind the scenes" when working with a clinical team for a longer amount of time would be extremely valuable. A second aspect (also work related) is that our daily obligations rarely allow us to explore ideas and concepts without interruptions. Having one month to do that would be great.
Outside of work, I think I would travel with my family. I traveled to New Zealand for a two-month hiking and backpacking trip after graduating. It would mean a lot me if I could take my family and visit some of the places again with them. But even one month might be a bit short for such a long trip, so perhaps I would simply try to spend time with family and friends. And one last idea: Windsurfing is on my bucket list. I'm just not sure if one month would be long enough to learn, though.