

# 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.

## Hyun-Soo Lee, Ph.D.

Hyun-Soo Lee was born in Seoul, Republic of Korea and grew up in Goyang, a neighboring city of the capital. In 2010, Hyun-Soo began studying biomedical engineering at the Korea Advanced Institute of Science & Technology (KAIST) in Daejeon, Republic of Korea. She also earned her master's and her doctorate there, for which she focused on developing new data acquisition schemes for fast MRI sequences. Since 2020, she has been working for Siemens Healthineers as an MR research collaboration scientist and as an onsite MR research scientist at Seoul St. Mary's Hospital. As an MR research collaboration scientist, she plays a vital role in supporting and managing a variety of research projects onsite. She also improves existing MRI techniques, and is currently focusing on ASL and DWI.

Seoul,  
South Korea



### How did you first come into contact with MRI?

If I recall correctly, I was first exposed to MRI in a signal-processing class given by my advisor in my junior year of college. My advisor spent an entire week introducing MRI and recruited students for summer internships. I didn't apply for the internship then, because I wasn't captivated enough. It wasn't until the following year, when I enrolled in a biomedical imaging course and delved into various medical imaging modalities, that I truly grasped the unique physics of MRI, particularly in terms of signal generation. That was the moment I became genuinely captivated by MRI and decided to pursue a graduate program in the field. This was the beginning of my career as an MRI expert.

### What do you find motivating about your job?

As an MR research collaboration scientist and onsite scientist, I have met many clinicians, MR technicians, and physicists, who are all passionate about their work. These encounters allow me to get to know the reality of daily clinical practice. I couldn't fully understand it when I was in academia, but now I believe it's one of the most motivating aspects of my job. Interacting with people from different backgrounds has provided me with invaluable insights into the real-world challenges we have faced. Furthermore, knowing that our research and collaboration activities have great potential to improve diagnosis and treatment options is highly motivating. It's not just about theoretical advancements; it's about making a tangible difference in people's lives.

### What are the biggest challenges in your job?

Effective task prioritization and time management. I have a wide array of responsibilities on my plate – including supporting multiple research projects in parallel and developing new techniques – so achieving the right balance can be quite demanding. One of the primary hurdles lies in allocating my attention and resources across these various projects, each with its unique demands and deadlines. Given that I'm responsible for the onsite research projects, which cover every body region, it's tough for me to keep up with all the new research topics and techniques. I also have to somehow find time for implementing the new techniques, which is another challenge.

### What are the most important developments in MRI?

It's hard to choose, but I believe one of the most pivotal advancements in MRI is the integration of AI and machine learning. While we've witnessed significant progress in data acquisition and image reconstruction with techniques like parallel imaging and compressed sensing, the recent introduction of deep learning has truly changed the game. Deep learning has revolutionized MRI by dramatically reducing scan times while maintaining or even improving the qualitative and quantitative image quality. Beyond reconstruction, it also benefits post-processing tasks, alleviating the burden on radiologists and technicians. This, in turn, elevates the quality of medical services and patient care. What's truly remarkable is that deep learning can

explore undiscovered territory and come up with entirely new pulse sequences that we could never dream up using our imagination or traditional physics-based approaches. It's essentially opening up a whole new world of possibilities in MRI technology.

**What would you do if you could spend a month doing whatever you wanted?**

If I could take a one-month vacation, the first thing I'd do is travel abroad, especially to destinations far from Korea. Right now, I'm very interested in Eastern European

countries like Slovenia, the Czech Republic, Croatia, and Hungary. Northern regions of Italy, particularly near Lake Como, could be perfect as well. While it might sound like a cliché, I'd also like to embark on the Camino de Santiago pilgrimage. Additionally, one of my hobbies is doing jigsaw puzzles. Since I'm a huge fan of Harry Potter, I started doing 1,000-piece puzzles featuring the covers of the Harry Potter books three years ago. I've done four so far, leaving just the final three to conquer. So I'd like to spend some of my time doing those puzzles to complete the series.

## Get to know us



**Annemie Steegmans, Ph.D.**  
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**Kelvin Chow, Ph.D.**  
Chicago, USA



**Emily Lucchese**  
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