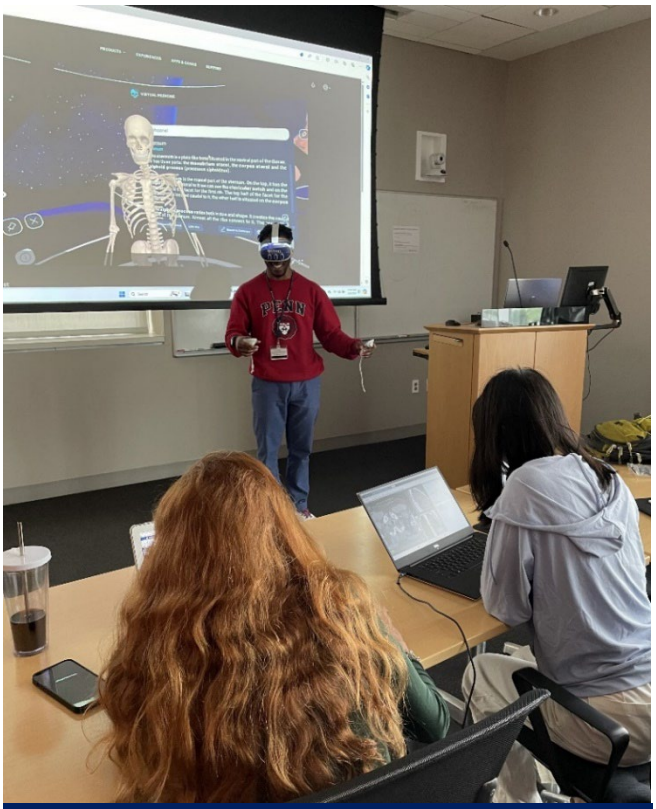
Penn
Medical Physics Graduate Programs

"Bringing Anatomy into Focus": VR Takes Hold in the Medical Physics Graduate Programs



MSMP student and Image-Based Anatomy course assistant Ayoola Okuribido demonstrates VR to the class

Ever since William Levin, MD, Professor of Clinical Radiation Oncology, Penn Medicine, first experienced virtual reality (VR), he's been looking at things a little differently.

Literally.

Take for example the way he interacts with his patients.

"I do a lot of mindfulness exercises with patients to help them manage their anxiety and stress," he shares. "I've discovered that for some people, the idea of clearing their mind of racing, negative, or disconcerting thoughts through traditional techniques can be overwhelming."

After his first immersive VR experience, which transported him to a beautiful tall ship in the middle of the South Pacific, Dr. Levin says he, "discovered that this technology offered an easier way for some people to focus on the present and not on what's in the past or future."

This realization led him to begin offering the VR headsets to those individuals who struggled with meditation. "The VR gets them to the same end point by keeping their brain occupied and in the moment," he says.

Now, he's taking his use of VR one step further by incorporating it into his Image-Based Anatomy course for students in Penn's Medical Physics Graduate Programs.

"All the planning we do for a patient's radiation therapy is based upon 2-D representations of their anatomy," he says. "But to really ensure that the treatment plan is accurate and that we're directing the radiation to the tumor while avoiding the normal tissue around it, we need to be able to think in 3-D."

He believes that by incorporating the technology into his class, he will be able to help his students move from 2-D to 3-D thinking faster than they would by slogging through text books.

What's more, he has the research to back his theory.

There's "good evidence from the VR world stating that the brain works differently when you learn in these immersive environments," he says, citing fighter pilots as just one of the several high-risk professions using the technology for training. "What seems to be happening is that the immersive experience stimulates novel, neural connections that expedite learning. So you learn faster and in a different way with VR than you do with a text book."

And so far, things seem to be going really well.

"I had taken anatomy courses before at my undergraduate institution," shares Matt Furey, a student in the class who is working toward a PhD in Bioimaging. "Bringing the VR aspect into it really creates the connection between what's taught in the course and how I visualize and interact with the structures and the anatomy in different ways."

"This experience has been very useful in helping me visualize exactly where the organs are in the body," offers Ayoola Okuribido, the Image-Based Anatomy course assistant and a second-year student in the Master of Science in Medical Physics program. "It's made me think a lot more about how I deliver instructions and what people can and can't see. It will help me communicate things in ways that make sense."

At the end of the day, Dr. Levin's goal is simple: to empower his students with the ability to look and think with a 3-D eye.

"I couldn't care less if they ever pick up a VR headset again," he surmises, "as long as this effort gets them over that learning curve faster."

Students try out the VR headsets

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