PhD candidate seeks to develop first clinically approved antifungal vaccine

Maureen Hester, managing ADHD and depression, perseveres to succeed at UMass Chan

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Maureen Hester, a PhD candidate in the immunology and microbiology program of the Morningside Graduate School of Biomedical Sciences, got an undergraduate internship in a UMass Chan laboratory through bold means: cold emailing. While a senior majoring in biology and biotechnology at Worcester Polytechnic University, she contacted Stuart M. Levitz, MD, professor of medicine, and he responded to her email.

"After working in his lab, I fell in love with fungal immunology," said Hester "I stayed on as a technician. Then, they couldn’t get rid of me, and I stayed for my PhD."

Prior to finding her footing at UMass Chan, she weathered twists and turns throughout her undergraduate career—starting at a college that she had to leave due to underperformance, excelling at Quinsigamond Community College and transferring to WPI, where her grades began to slip again.

“I was giving up on college and my mom said, ‘Alright, we’ve got to do something. Something’s not right.’ The doctor realized I had ADHD and depression. With medication and therapy, all the white noise in my head was gone. I finished college at 27 years old,” Hester said.

Fungal diseases kill approximately 1.7 million people annually, but there are no licensed antifungal vaccines. Hester’s research explores fungal immunology, working with vaccines to target Cryptococcus neoformans, a fungal pathogen that can cause pneumonia and eventually progress to meningitis.

“Cryptococcus is something most people breathe in regularly; it’s only really a problem if you’re immunocompromised,” said Hester. "It's responsible for about 20 percent of AIDS-related deaths every year. It's important to develop a vaccine that works for clinical trials.”

Hester, who defends her thesis this month while planning her January wedding, plans to stay on at UMass Chan as a postdoctoral researcher while searching for career opportunities in bench science.

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