Exploring Fungal Innovation and Future Pathways: A Conversation with Joe Hart

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Within Utah State University's Biological Engineering program, are students whose curiosity and dedication shape the future of sustainable technology. One such student is Joe Hart, a junior who joined the program in the spring of 2023. In a recent interview, Joe shared insights about his experience in the lab, his passion for biological systems, and his hopes for the future.

Currently, Joe is working in the Fungal Biotechnology and Engineering lab, under Dr. Erika Espinosa-Ortiz on an innovative project that uses industrial wastewater to grow fungal strains for use as alternative meat substitutes. His interest in this work stems from a fascination with different types of cell culturing and a specific desire to explore the potential of fungi. "The opportunity to work with fungi specifically was something that interested me," Joe explained.

Joe's ambitions go beyond the lab bench. Looking ahead, he plans to join the biotech industry, with a long-term goal of working on the downstream side of biological engineering. His focus is on scaling up research projects from the lab into practical applications for larger companies—a process essential for translating science into societal impact.

When asked about the challenges of the program, Joe pointed to the significant time commitment. "It's not a light major at all," he admitted, but he also emphasized the close-knit, collaborative environment that makes the effort worthwhile. "You build better relationships and stronger connections with people who are in like-minded fields. That support system is incredibly valuable."

Despite occasional doubts and thoughts of switching majors, Joe has remained committed. What keeps him grounded is both the scientific intrigue of working with living organisms and the strong sense of community within the program. He

also balances his academic life with a social one, enjoying campus events like the Howl and Mardi Gras celebrations—highlighting the importance of maintaining well-being alongside academic rigor.

Joe expects to graduate in the fall of 2027 and is considering a master's degree, either in bioinformatics at the University of Utah or continuing at Utah State in Biological Engineering. "Nothing's set in stone yet," he said, but graduate studies are definitely on the horizon.

Reflecting on his time in the program, Joe suggested that increasing outreach to high school students could help build awareness of what biological engineering truly entails. "When I first got here, I didn't even know what biological engineering was," he recalled. He believes early exposure—through hands-on experiments or visits from university students—could make a big difference in shaping future engineers.

He also noted the potential of using both social media and in-person school visits to broaden the department's impact. While social media can reach large audiences, he sees personal presence in classrooms as more impactful, especially for local schools.

Joe Hart's journey illustrates the value of curiosity, resilience, and community in higher education. As the Biological Engineering Department continues to grow, students like Joe are helping bridge the gap between scientific discovery and real-world application, one fungal culture at a time.

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