

Plenary Talk PV IV Tue 9:45 ZHG011
Equipping the Next Generation: Quantum Education and Workforce Development in the U.S. — ●HEATHER LEWANDOWSKI
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Quantum sensing, networking and communication, and computing have garnered significant attention due to their transformative potential and advantages over traditional technologies. The second quantum revolution has not only advanced technological frontiers, but also created a growing need for STEM graduates equipped with quantum-specific expertise. Preparing students to be successful in this rapidly evolving field requires empowering them with a range of technical and professional skills and knowledge.

I will present findings from extensive studies of both the landscape of quantum education in the U.S. and insights from the quantum industry. These findings include an overview of existing programs (e.g., certificates, minors, degrees) and courses across the U.S., as well as an analysis of key industry activities, job profiles, and the skillsets valued across roles. Additionally, I will highlight our local initiatives to bridge the gap between education and industry needs. These efforts include experimental training embedded in lab courses and a novel, two-semester, project-based course. In this course, student teams collaborate on industry-sponsored projects to develop practical skills in areas such as nanofabrication and servo electronics, alongside essential professional competencies like project management, communication, and budget planning.