IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track: Undergraduate Space Education (3)

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GENDER-FOCUSED CAPACITY BUILDING THROUGH SATELLITE AND CAREER DEVELOPMENT TRAINING - SHESAT GHANA

Abstract

Women remain underrepresented in Ghana's STEM workforce, particularly in space technology, due to limited access and exposure to quality education, mentorship, and practical training. SheSat Ghana is a one-year undergraduate training and mentorship initiative designed to address these gaps by equipping young Ghanaian women with hands-on experience in satellite technology, electronics, space systems design, and data analysis. The program aims to foster early engagement in space science while building career-ready technical and professional skills, targeting first- and second-year female students at Kwame Nkrumah University of Science and Technology (KNUST). SheSat Ghana's innovative structure combines technical training, mentorship from industry professionals, and project-based learning. Participants engage in satellite hardware assembly, coding, environmental monitoring, and data analysis using Nyarkoa, a CanSat model developed in partnership with Xavier Space Solutions and Erictronics. Each participant undertakes a capstone project, designing and deploying a CanSat to address environmental challenges in Ghana. The program also offers workshops on networking, CV building, leadership, and public speaking to enhance professional preparedness. As an ongoing initiative, SheSat Ghana's impact is measured through participant engagement, mentorship interactions, and progress assessments. By the end of 2025, the program aims to train 20 undergraduate women through intensive hands-on activities while reaching an additional 200 students through virtual outreach. Preliminary observations suggest increased interest and confidence in STEM careers among participants, with future evaluations expected to provide deeper insights into the program's effectiveness. SheSat Ghana presents a replicable framework for undergraduate space education, particularly in regions with gender disparities in STEM. The lessons learned from its implementation—including insights on student engagement, mentorship effectiveness, and project-based learning—offer valuable takeaways for educators and space organizations worldwide. This paper will discuss the program's structure, initial outcomes, and future directions, contributing to global conversations on inclusive space education.