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Development of a University Molten Salt Research and Test Reactor RUSTY TOWELL, Abilene Christian University, NEXT COLLABORATION — Nuclear fission is a tremendous energy source that remains underutilized globally to address the need for abundant, safe, carbon-free energy on demand. This regrettable situation can be rectified with the development of advanced reactors that are capable of meeting the world's energy needs without the risk of proliferation. To address this challenge, the Nuclear Energy eXperimental Testing (NEXT) Lab has been launched at Abilene Christian University. The NEXT Lab mission is to provide global solutions to the world's needs for energy that is less expensive and safer, water that is pure and abundant, and medical isotopes used to diagnose and treat cancer by advancing the technology of molten salt reactors while educating the next generation of leaders in nuclear science and engineering. The NEXT Collaboration is focusing on advancing the technical readiness level of molten salt as a coolant in liquid fueled molten salt reactors. Along with our university consortium, we are developing a plan to construct the first university molten salt research and test reactor. The current status of NEXT will be presented including the breath of research across many disciplines and our timeline for the construction of a research reactor.

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