

NEXT

Nuclear Energy eXperimental Testing

Abilene Christian University's Nuclear Energy eXperimental Testing (NEXT) Lab – in collaboration with the Georgia Institute of Technology, Texas A&M University, and The University of Texas at Austin – has set out to design, license and commission a molten salt research reactor to be hosted on ACU's campus.



The four-university consortium called NEXTRA (NEXT Research Alliance) recently announced funding of \$30.5 million over the next three years from Abilene-based Natura Resources.

Having an on-site research reactor will provide unprecedented access for students and faculty to collaborate on cutting-edge research. ACU is known throughout higher education for its strong commitment to undergraduate research, especially in STEM fields. NEXT Lab provides extraordinary opportunities through its departments of engineering and physics, chemistry and biochemistry, and others.

MISSION

The mission of NEXT is to provide global solutions to the world's most critical needs. By advancing the technology of molten salt reactors and educating the next generation of leaders in nuclear science and engineering, our ultimate goal is to help provide clean, inexpensive and safe energy, water, and medical isotopes for nuclear medicine and to treat cancer.

HISTORY

2015: After several years of research into sustainable energy sources, Dr. Rusty Towell, ACU professor of engineering and physics, presented findings at a TEDxACU talk titled "Why Making Energy From Dirt Might Save the World." His talk sparked interest in funding and support for future research.

2016: NEXT Lab officially formed.

2018: The Development Corporation of Abilene approved \$300,000 in research and development funding for NEXT Lab, and the first full-time staff member was hired. Just a few months later, \$3.2 million was contributed by the Robison Excelsior Foundation, and salt flowed through a molten salt test loop for the first time. Officials from the U.S. Department of Energy toured NEXT and requested follow-up visits in Washington, D.C.

2019: ACU hosts NEXTRA workshops in March and October. In June, the U.S. Department of Energy awarded an \$800,000 grant to NEXT Lab for molten salt research, and the DOE issued a Letter of Support.

2020: Natura Resources announced funding of \$30.5 million to NEXTRA over the next three years, with \$21.5 million going to ACU and the remaining \$9 million to the other consortium universities. NEXT Lab received its first patent – for a high-temperature flow meter to help monitor the flow of molten salt through a pipe at temperatures as high as 700 degrees Celsius. NEXT Lab submitted a Regulator Engagement Plan to the NRC and began a series of public meetings leading to a construction permit application.

2021: In January, NEXT Lab installed a second molten salt test loop in its on-campus facility in Abilene, Texas, and plans are formalized for a third larger molten salt test system.



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