

# Waterlogged: How USU Engineering Students Keep Library Books Dry | College of Engineering

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Feb. 28, 2020 — Utah State University's Merril-Cazier Library has recently had problems with leaks from its foundation and from pipes throughout the building. The potential for water damage poses a serious challenge to the university's Special Collections and Archives, which are housed in the basement beneath overhead pipes.

The archive is home to thousands of old and rare documents that are susceptible to damage from water, humidity and other challenges that come with an aging building.



*Student Kylan Knight is a member of the design team that helped find a solution for a problem plaguing the library's Special Collections and Archives.*

USU engineering students Kylan Knight, Camille Kamidova, Reem Ghabayen and Michael Whipple have come up with a solution for this risky situation that helps librarians protect the important collections.

The new system, designed by the students for a capstone project, notifies library staff if a leak is detected. If water seeps into the building, librarians and student workers receive a notification on their computer. Specially designed sensors are installed in locations where leaks have appeared in the past.

Before the system was installed, student workers and curators had to visually inspect the collections up to six times a day to check for leaks. This process was not only tedious to employees, but was not foolproof in spotting potential problems.

In addition to the leak detection system, the student design team is also working on additional sensors that can detect other risks to the archives.

"We've actually helped them expand the network to include more sensors," said Knight. "We're going to help put in temperature and humidity sensors to further protect the collections."

The leak detection system is almost completely up and running and is expected to be fully online as soon as possible.

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