

# North Carolina State University's David Clark Labs Protects Samples & Improves Lab Habits with Minus80 Monitoring

With more than 34,000 students and nearly 8,000 faculty and staff, North Carolina State University is a comprehensive university known for its leadership in education and research, and globally recognized for its science, technology, engineering and mathematics leadership.

NC State's David Clark Labs relies on many different types of temperature controlled storage units to house samples for their research and teaching programs. The failure of some of these units prompted a search for a monitoring solution that would offer flexibility and economical protection. They agreed to a 'trial evaluation' of Minus80 Monitoring to see exactly how this would offer the peace of mind they had been seeking. Wall Crumpler, Facility Liaison for David Clark Labs stated "We have had regular failures of freezers due to age and other factors and the samples being stored are considered too valuable to leave to chance. Many of our freezers are in isolated equipment rooms that are not regularly attended and researchers are not daily visiting these locations. It was clearly important we implement a monitoring system."

The selection process for the 'right' monitoring solution many universities and organizations go through can be quite a task. Wall Crumpler states "There are several reasons we selected this company and this system:

- *"The user-friendly, streamlined design of their web interface and mobile app - it is of course cross-platform since it utilizes a web interface which is of importance to us since we have an even mixture of Mac vs. Windows users.*
- *The ease in parameter set-up using the web interface, very intuitive and straight-forward.*
- *The reliability of monitoring, notification, and reports we have seen during the testing phase.*
- *The fact that the system monitors and reports device internal temp, ambient room temp, and door events. They are also working on a module for monitoring the compressors on the minus 80s and their recovery time after temperature goes out of range, which may give us insight on systems that are beginning to fail prior to the actual failure.*
- *The fact that the system can alert us through multiple sources, email, text message, phone call to cell or landline ...also you can set-up and maintain separate notification lists for each freezer with each individual being notified by multiple means."*

***"The door monitoring and reports will be useful in examining our lab practices and coordinating efforts to minimize the decrease in lifespan of compressors due to poor practices." Wall Crumpler, NCSU***

*“We did have one alarm event during the test period and it was easily attributed to researchers working in the freezer to arrange samples, causing the temperature of the freezer to rise above the set threshold. All notifications occurred just as prescribed by the system and we are very pleased in that regard. This also alludes to one of the features we greatly appreciate in the Minus80 Monitoring system ...and that is the monitoring of door opening, closing, and period of time open. The door monitoring and reports will be useful in examining our lab practices and coordinating efforts to minimize the decrease in lifespan of compressors due to poor practices.” (Wall Crumpler, NCSU)*

Minus80 Monitoring provides the real time cloud-based solution NCSU was seeking, offering constant remote monitoring and alerting required of lab personnel and researchers today with minimal onsite equipment. Minus80 allows staff to be informed of alarms enabling quick action prior to storage unit failure. The Minus80 mobile phone app increases flexibility and allows quick response when an alert requires immediate action.

The ability to monitor the door open/close events at NC State will provide helpful information to create better lab habits for students loading or unloading samples. Hopefully, this will also foster positive energy efficiency and sustainability principles within research labs. Tables and graphical data on the Minus80 portal show trending of temperatures as they relate to door open events, an important component in the learning process.

After a successful trial run of the Minus80 solution at NC State, we are currently monitoring ultra-low freezers, standard freezers, refrigeration units, and walk-in growth chambers at NCSU’s Biology Department to provide researchers and staff the protection they were seeking.

*For further information on how Minus80 Monitoring can help you better protect your sample storage environments, please contact us at [info@minus80monitoring.com](mailto:info@minus80monitoring.com). Dr. Harry Daniels and Wall Crumpler, within the Department of Biological Sciences at NCSU will provide personal reference upon request.*

