CORIS MONITORING

MANAGING THE GROWTH

of Ultra-Low Temperature Freezers in Healthcare Research

Spurred by COVID's global impact, research funding from academic and research laboratories, biobanks and pharmaceutical and biotechnology companies is on the rise. Researchers estimate that half this growth is tied to the U.S. market alone. This growth is not with green-field startups but with initiatives in existing facilities.

The number of ultra-low temperature freezers is increasing in current facilities, which means operations managers and researchers are seeing new equipment installed next to existing systems. It also means facilities are having to manage diverse equipment.

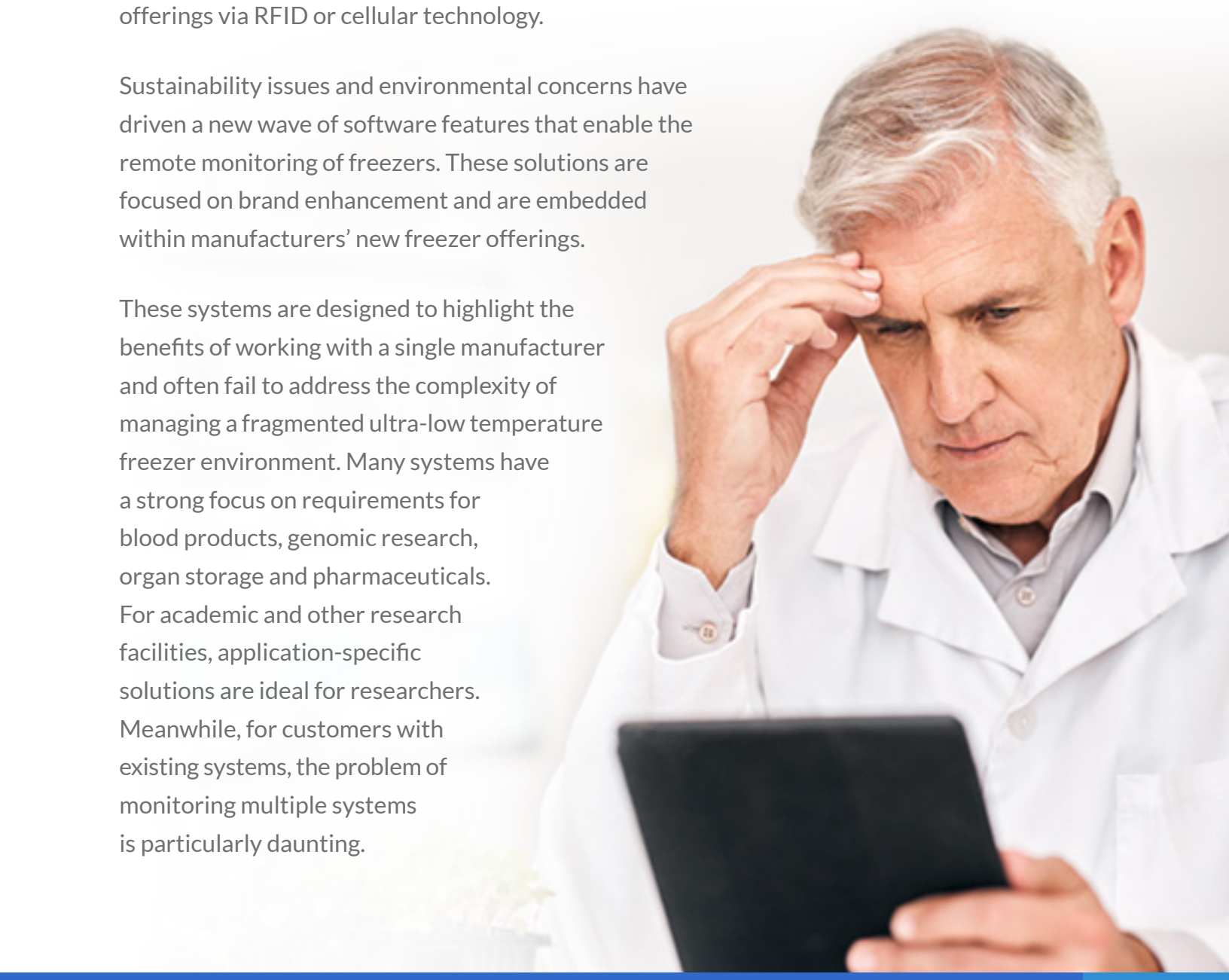
The Rise of Freezer Farms & the Challenge of Monitoring Them

Freezer farms are not a novel concept; however, specialized research requirements have led to a diverse, competitive market of freezer manufacturers with little consolidation. This is evident in research labs where freezer farms include a variety of chest and upright freezers.

It's not unusual to tour a freezer farm with a facility manager and see well-known names like Thermo-Fisher Scientific and PHC Holdings Corporation next to several small- to medium-size manufacturers. Some of these companies have incorporated networking solutions into their offerings via RFID or cellular technology.

Sustainability issues and environmental concerns have driven a new wave of software features that enable the remote monitoring of freezers. These solutions are focused on brand enhancement and are embedded within manufacturers' new freezer offerings.

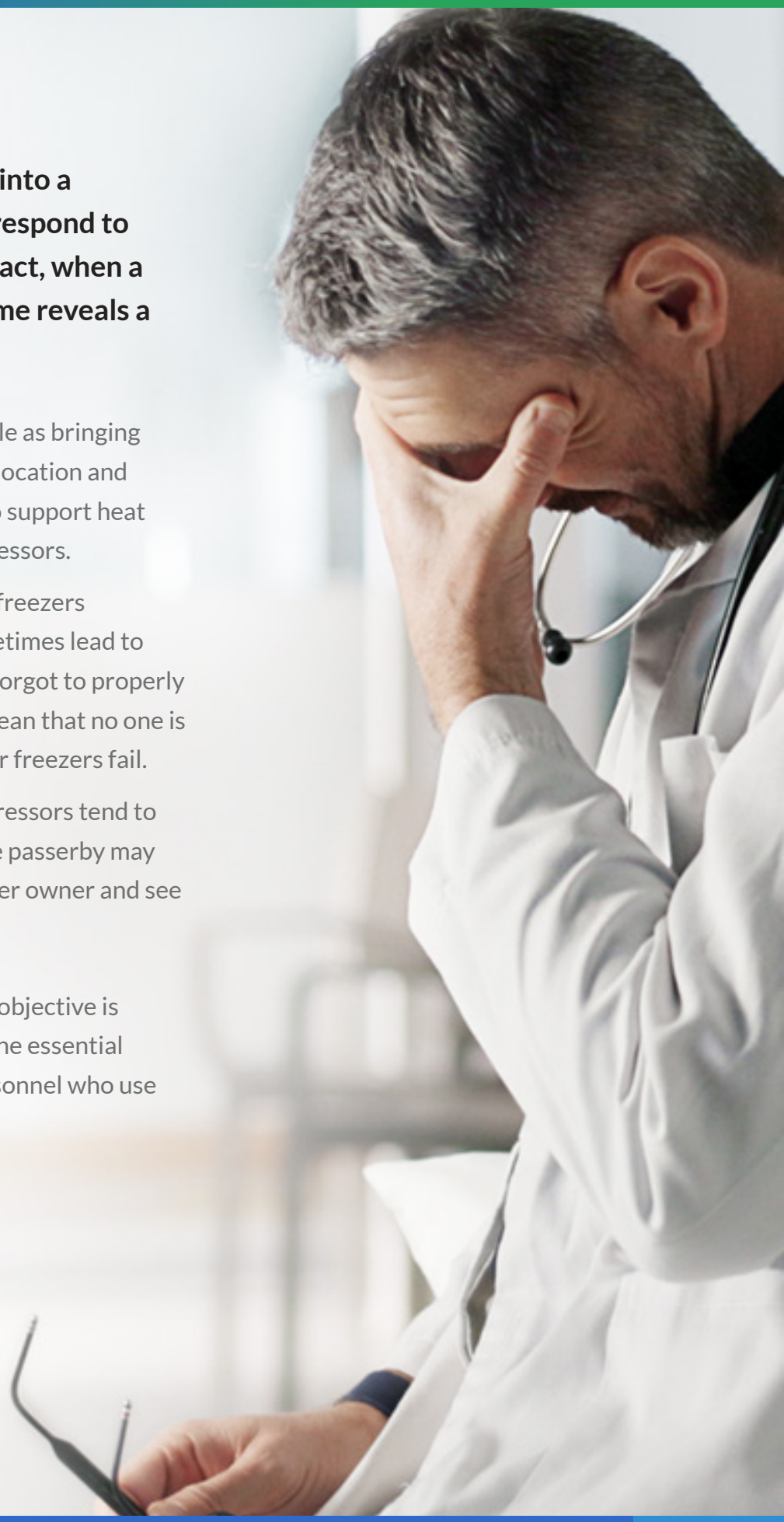
These systems are designed to highlight the benefits of working with a single manufacturer and often fail to address the complexity of managing a fragmented ultra-low temperature freezer environment. Many systems have a strong focus on requirements for blood products, genomic research, organ storage and pharmaceuticals. For academic and other research facilities, application-specific solutions are ideal for researchers. Meanwhile, for customers with existing systems, the problem of monitoring multiple systems is particularly daunting.



The aggregation of freezers into a central facility does not correspond to a single point of contact. In fact, when a failure occurs, the blame game reveals a gap in responsibility.

- Facilities managers see their role as bringing the 220 volt outlet to the right location and increasing HVAC capabilities to support heat dissipation from freezer compressors.
- Researchers often share these freezers with other labs, which can sometimes lead to combativeness over which lab forgot to properly close a freezer door and may mean that no one is watching if temperatures rise or freezers fail.
- And even though freezer compressors tend to be noisy as they start to fail, the passerby may see no way to contact the freezer owner and see it as “not their job”.

With these variables in mind, the objective is to have a solution that monitors the essential freezers and alarms the right personnel who use those respective freezers.



Manage Mixed-Use Environments With CORIS Monitoring

Through discussions with facilities managers and researchers, CORIS Monitoring has developed a centralized solution that seamlessly integrates into an existing IT infrastructure, making it easy for researchers to monitor mixed freezer environments.

Some highlights of the CORIS solution include:

- **A single pane of glass.** CORIS monitors temperature and humidity and keeps a dedicated data log on each freezer. It is a self-contained system that does not require API interfaces to sync with freezer controls. Information can be displayed to a facilities manager or parsed to designated researchers.

- **Minimal impact on freezers.** CORIS leverages an industry-standard LoRa radio technology, which reduces transmission power and covers a large area. Many implementations are designed to support an entire campus or community.

- **IT system integration.** Cybersecurity is a constant concern for modern IT teams. CORIS is a closed system that aggregates traffic via an ethernet-connected gateway. This means existing institution security standards can be applied, minimizing breach risks. Further, as a self-contained system, CORIS requires software development to connect to manufacturer APIs.

- **ROI and risk mitigation.** Freezers are expensive and, depending on the contents, the risk of system failure may mean millions of dollars in loss — not to mention the loss of potentially rare samples, artifacts or specimens. The CORIS Monitoring solution is priced for value, so facilities managers can choose to deploy and monitor all freezers or just the freezers that house high-value assets.

The advancements enabled by laboratories that leverage freezers have been remarkable and, in many cases, lifesaving. In support of the innovation happening inside these labs, researchers should have a way to effectively manage the complexity of freezer farms. Find out more on how CORIS Monitoring streamlines freezer farm management — **CONTACT US**.