Case Study

How UCLA Avoids Issues Before They Happen with ZEISS Predictive Service

ZEISS

Seeing beyond

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Figure 1 *Professor Jeff A Long, UCLA and local ZEISS Engineer, Kevinne Aguilar.*

The University of California, Los Angeles (UCLA) is home to more than 40,000 students. Since its foundation more than a hundred years ago, it has become a global hub of academic knowledge and excellence. As a result, among its graduates are 16 Nobel Prize laureates, 15 MacArthur Foundation Fellows, as well as more than 250 Olympic medalists.

UCLA's microscopy facility is one of it's many world-class laboratories. Used by UCLA's Department of Molecular, Cell and Developmental Biology (MCDB) and Broad Stem Cell Research Center (BSCRC) it is a key part of the University's life science and interdisciplinary collaborations.

In this correlative microscopy lab, both MCDB and BSCRC members have numerous advanced imaging systems at their disposal, including several ZEISS microscopes. These systems are used heavily by both internal and external researchers across the entire week, sometimes at all hours of the day. As such, it's vital these systems avoid unplanned downtime at all costs.

The challenge: potential overheating, potential downtime

Having proudly taken ownership of a brand-new ZEISS LSM 980 with Airyscan 2, the facility operated well with no issues from their world-leading confocal. Additionally, the University had opted into ZEISS Predictive Service – allowing remote performance monitoring to ensure that no issues should arise.

Some time after UCLA happily took ownership of their new imaging system, Predictive Service alerted ZEISS technicians that the microscope was at risk of breaching the acceptable temperature limits and required investigation.

The confocal laser generates most of the apparatus heat and operational temperature is usually maintained by an external thermoelectric chiller. This component helps keep the temperature stable and ensures consistent, high-quality image resolution. This is an integral part of the system as image acquisition can take place over a long period of time. As such, absolute precision and stability is required.

Immediately after receiving this alert about the potential overheating, the local ZEISS engineer got in touch with the laboratory manager to let them know about the system warning and to clarify if they had spotted anything unusual while using it. The UCLA laboratory manager said the microscope had performed as expected and so was surprised by their call.

Despite everything seeming normal from a day-to-day operational point of view, Predictive Service had successfully monitored and sent back consistent performance reports. If the overheating hadn't been recognized at this stage, the microscope could have eventually suffered from a critical failure halting the lab's work.

Figure 2 *ZEISS LSM 980 with Airyscan 2*

"Predicted Service alerted ZEISS to a potential problem with the cooling unit on our LSM 980 before it became a serious issue. By the time we started to get warnings that there was a problem a new cooler had been ordered and was replaced resulting in zero downtime on the scope."

– Professor Jeff A Long, Ph.D., MCDB Department, UCLA

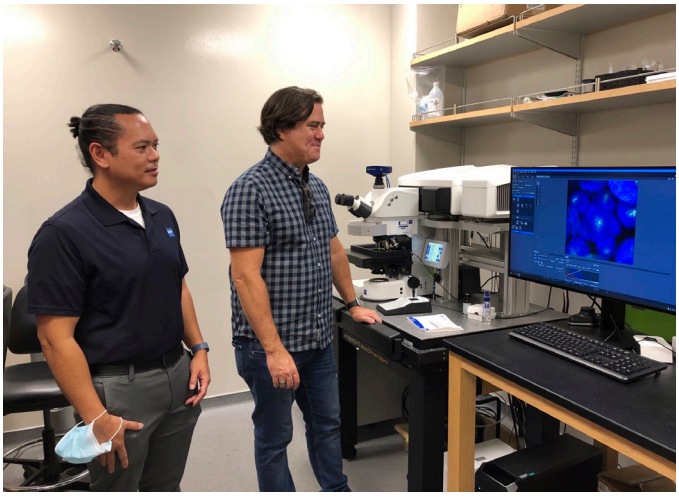

Figure 3 *Professor Jeff A Long, UCLA and local ZEISS Engineer, Kevinne Aguilar.*

The solution: active monitoring, minimized impact

Given the information that Predictive Service had provided and after checking with UCLA's researchers, the local ZEISS engineer confirmed the remote diagnosis. The system's chiller was the source of the issue.

Thanks to the continuous remote monitoring by Predictive Service, UCLA's local engineer was able to order the replacement part in advance of a scheduled visit to the lab. A week later, the engineer arrived and installed the new chiller quickly and easily with no unplanned downtime.

After the new chiller had been installed, the data confirmed the imaging system had returned to normal temperature values and should be operating as usual. This was confirmed by the lab's researchers.

In turn, the lab was able to continue using the microscope without worrying about any pending repair or potential fault all thanks to the quick and proactive actions that could happen thanks to Predictive Service.

Predictive Service saved UCLA from unplanned downtime which could have led to the potential loss of hours of research as well as revenue for the facility. Unobtrusively running in the background, it has provided the researchers with absolute peace of mind in their system's performance.

Predictive Service is only effective when coupled to an efficient service organization. Whilst the technician diagnosed the issue remotely, the fact that the local engineer was on-hand and ready to go, made all the difference to UCLA. ZEISS offers a fantastic service experience for all its customers as it has the infrastructure to monitor and recognize issues as well as quickly and efficiently resolve them.

How Predictive Service Works

- Predictive Service comes pre-installed on every new X-ray Microscope as well as a number of our Electron Microscopy and Light Microscopy systems. You can choose to enable it and take advantage of the benefits available, or not.
- Once connected to your network, Predictive Service will monitor the health of your system – ensuring that it is running as effectively as possible.
- System condition information is shared between your microscope and ZEISS servers via a secure connection, ensuring the highest levels of data security. No image data or research information is accessed or shared.
- Predictive Service evaluates the performance of your microscope over time to ensure your microscope runs as efficiently and consistently as possible.
- If the system behaves abnormally, ZEISS engineers are alerted, can monitor the microscope's performance remotely, and then study the analytics data to understand what needs to be rectified. All this happens whilst you continue to conduct your research uninterrupted.

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