At the Cutting Edge of Animal Science and Sustainable Research

Preservation

CUSTOMER TESTIMONIAL - THE ROSLIN INSTITUTE, EDINBURGH, SCOTLAND, UK

The Roslin Institute is one of the world's best known animal science research facilities. Part of the College of Medicine and Veterinary Medicine at University of Edinburgh, it is located on the Easter Bush Campus in Edinburgh, Scotland, UK. Globally, apart from its current world-class animal science research, it is often associated with the story of Dolly the sheep - the first mammal cloned from an adult cell, born in 1996 at the Institute. In recent years, the Roslin Institute has also become recognized as a pioneer in improving the practical dynamics of scientific interaction and enhancing the sustainability of research itself.

The Roslin Institute's aim is to build upon scientific understanding of genetic, cellular, organ and systems bioscience in animal development and pathology and to use this knowledge to prevent and treat important veterinary diseases and develop sustainable farm animal production systems. Long-term research is delivered by divisions encompassing genetics, genomics, development, infection, immunity and clinical science. The Institute is also currently involved in COVID-19 research. It receives strategic investment funding from the UK's Biotechnology and Biological Sciences Research Council (BBSRC).

An ethos of sharing

The Roslin Institute is part of the Royal (Dick) School of Veterinary Studies and shares the campus with teaching spaces, three veterinary hospitals and an innovation hub, among other buildings. This means

that several researchers and staff currently utilize the facilities. Mr. Brian McTeir is the Facilities and Technical Lab Manager for the entire Campus.

"The Roslin Institute is designed with an ethos of sharing. Scientists can often tend to become a little isolated in their own space and not share space, but one of our Directors saw the value of scientists mixing," he explained. "Our new buildings have been designed to enable and encourage people to mix, share equipment, and share space, with the premise that ideas would be born from that because people would talk to each other more rather than sit in separate rooms. In addition, by getting people to share equipment, you need less equipment. So there are savings in that: space-savings, cost-savings. And the ultimate outcome of sharing is that people work better. Everything has been designed around this, for example, our new buildings have open plan labs."

Creating a superb environment for science

The Institute continually strives to support scientists in every way possible, so that they can produce research.

"We have a very strong operations team, which is geared towards supporting our scientists in every way, so that the scientists can do the science. We stock the labs with consumables, we provide the media, we look after all their equipment. They're not expected to do anything like that. They just concentrate on what they need to do and not become bogged down by having to go to procurement to buy, for example, 300 tubes." said Mr McTeir. "What's key is that we try to provide them with a good working environment that they're excited to work in. It, of course, extends beyond equipment. For example, there are gymnasiums etc. and we're looking to create a football / grassed area for football and volleyball. So, despite the fact that we are in difficult times with the COVID-19 pandemic, we are still thinking about providing things to make a better environment. The campus is generally new. If I look at what it was 12-15 years ago, and what it is now, it's been brought together and it's still evolving."

Prioritizing efficiency

To meet guidelines from the BBSRC back in the early 2000's, the Institute introduced a Quality Assurance system that includes a database for equipment.

"All our equipment is barcoded on a database. It raises when things have to be serviced. We're very tight on servicing and quality and this works well for efficiency. It fits into the culture that we have created about sharing equipment, by allowing us to identify, for example, why would we need twenty water baths in a lab, when we only need maybe four?" remarked

"I purchased our first Sanyo (PHCbi) -150˚C freezer almost 20 years ago as an alternative to Liquid Nitrogen storage and this freezer is still operational within the facility today."

Mr. McTeir. "It has changed the whole concept of equipment efficiency. Although it was a bit of work to set up, by creating this database, we managed to take equipment out of labs, store it, and then bring it back in. So, it gave good value and enhanced the longevity of equipment. Functionality and longevity definitely benefit from regular servicing and maintenance. We have a PHCbi -150ºC freezer which is nearly 20 years old and nobody's had to do anything to it other than regular servicing. We've not had any problems with it."

Precision, reliability and practicality

Advanced equipment is essential to support the Roslin Institute's world-class scientific output. The Institute has invested in a new electron-microscope, new phenotypic and genotypic platforms equipment, and new mass spectrometers.

CUSTOMER TESTIMONIAL - The Roslin Institute, Edinburgh, Scotland, UK

"Automation of things within lab techniques has changed, and it's all about data production. Almost everything is automated now. This enables us to scale up and we have a very data-driven department now," remarked Mr McTeir. "What is key across all equipment to support this is precision, reliability and practicality. Effective cryogenic storage is one of our continual basic needs and PHCbi stands out in providing particularly high quality, but well priced products with good support available. This especially stands out in PHCbi's -150°C freezers."

"The specialist feature of PHCbi's -150°C freezers that have been very helpful to me in designs of other buildings, is the fact that they work off 13AMP supplies. Other manufacturers need specialist power supplies. The beauty of PHCbi's -150°C freezers is that I can put them wherever we want them, as long as we've got 13AMP power. And that's been a huge help. Every time we've designed something, it means that I don't have to design in 16AMP power supplies. It makes them very flexible and reliable," added Mr McTeir.

-150˚C Freezer vs Liquid Nitrogen Storage

"I am proud of the Roslin Institute cryopreservation facility, it was one of the first in Scotland to start investigating the use of mechanical -150˚C units.

I purchased our first Sanyo (PHCbi) -150˚C freezer almost 20 years ago as an alternative to Liquid Nitrogen storage and this freezer is still operational within the facility today. The health and safety aspect associated with using mechanical -150˚C freezer storage for the cell lines over Liquid Nitrogen was an important factor, as well as the reduced risk of cross contamination that the freezers offer. The Roslin Institute will continue to store the Stem Cell lines in this way as the cells are still viable after 20 years with no signs of degradation.

It has proven to be a reliable source of storage both for the quality of samples and resilience in engineering and sample security."

Find out more about some of the latest research from the Roslin Institute
https://www.ed.ac.uk/roslin/news-events/latest-news

INFORMATION

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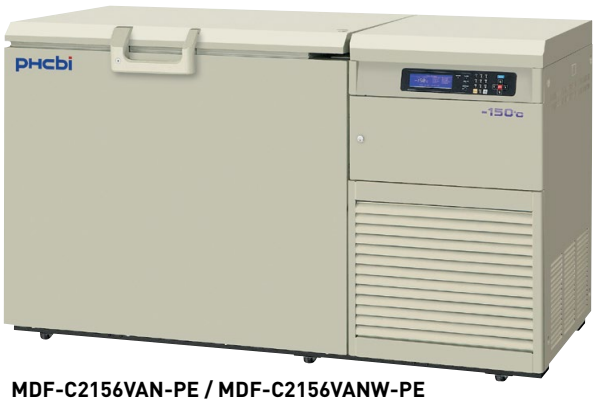

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