LABORATORY OPERATIONS

Head of Operations
Scott Kelso

Operations cover several different functions with the remit to ensure the smooth running of the building, facilities, and support services, providing support to the research groups housed within the Institute, giving them the freedom to focus on delivering their world class research.

Our operational teams have continued to focus on delivering first class services to our researchers in the Institute. This has been delivered against a challenging backdrop of continuing high utility costs as well as ongoing inflationary pressures on routine consumables and equipment.

Our ability to mitigate these pressures is contingent on improvement activities and finding more and more opportunities to review existing contracts or to find more efficient or effective ways of working. Building on previous efforts in this area, we have looked at piloting schemes to centralise the purchase and issuing of common chemicals for groups to reduce wastage and ensure that we get best value for money, as well as further opportunities to reduce electricity consumption and liquid nitrogen usage. All these efforts not only help mitigate against rising costs, but also provide benefits against environmental sustainability targets.

Alongside the activity around ways of working, we have also continued to invest in equipment for the Institute, which is vital for day-to-day research work. Examples include the first phase of the replacement programme for our tissue culture hoods as well as increasing our primary data storage capacity which will help meet the challenges around increased data demands from new technology platforms.

The coming year will continue to pose challenges, particularly around capital spending requirements, to replace key pieces of equipment that are vital for routine operations as well as advancing the discovery science of the Institute. That said, our incredible teams are ready to meet these head on and deliver the best services possible to help our researchers deliver their world leading research activities.

Facilities Management & Maintenance

Alistair Wilson, **Andy Hosie**, Mark Deegan, Roy McCarthy

We manage the outsourced service provisions for catering, cleaning and janitorial services as well as providing maintenance support for the Institute's buildings, plant, and fabric. We manage minor project works, alterations and refurbishments and ensure that all statutory and regulatory issues with respect to buildings and systems are compliant with appropriate regulatory standards.

This year has seen us, in conjunction with the University of Glasgow, upgrade gas supplies to all our buildings from low to medium pressure. This has eliminated some of the costs associated with meterage standing charges and means that all gas and electricity supplies, are now managed for us through the University. We therefore benefit from the University's ability to bulk buy utilities via their National Procurement Framework which enables us to predict future utilities expenditure more accurately and protect the Institute more from market fluctuations in utility costs.

In addition, after a successful tender process, we welcomed a new catering provider to the Institute and saw a significant refresh to the café provision for our staff with new menus and improved services.

These activities have been completed successfully alongside the routine compliance and maintenance activities required to keep the Institute running smoothly for all our researchers.

Laboratory Management & Health and Safety

Euan Cameron, **John Kinsella**, Karen Thomas, James Dyball, Lauren McGowan

The Laboratory Management team ensure that the Institute's laboratories run as effectively as possible, performing vital support duties and planning operational improvements to allow research to occur efficiently and effectively.

Laboratory Management coordinates the servicing, maintenance and upgrades for communal Institute equipment, systems, and laboratory areas. The team works proactively to minimise equipment breakdowns, addressing those that do occur as quickly as possible. Additionally, the team maintains a comprehensive laboratory equipment database and asset register, using this to continually assess the status and capability of existing communal equipment, and prioritise new equipment purchases and replacements accordingly. The team also manage cryogenic sample storage provision, maintain sufficient supply of refrigerant gases, support researchers with troubleshooting and other queries and ensure safe, compliant disposal of laboratory waste including chemical, clinical and WEEE waste.

The Laboratory Management team works very closely with the Institute's Health & Safety Manager, John Kinsella, to ensure that all staff, students, and visitors work in a safe laboratory environment. Maintaining and improving health and safety standards within the Institute is an integral aspect of Laboratory Management's responsibilities: the team reviews health and safety processes regularly and identifies training needs for all staff. A primary role of the team is to provide advice, training, and information to all staff on matters relating to health and safety, either to ensure best practice or to effectively respond in the event of incidents or issues. This includes contributing to the creation of risk assessments and appropriate containment and control measures necessary for laboratory work involving biological, chemical, radiation, and genetic modification processes. Additionally, all staff and students attend a safety update once a year and new starts attend a series of safety and training inductions where fire safety is also managed in conjunction with the area fire officers. Lab Management also monitor all outgoing orders to ensure compliance with Institute safety procedures, particularly those relating to COSHH.

Laboratory Management needs to maintain strong relationships with relevant suppliers, to guarantee best prices and discounts for new equipment, maintenance, and servicing. The team works closely with the Laboratory Support Services team to control costs for purchases related to service contracts and laboratory consumables. In addition, assistance is given to researchers to enable smooth processing of their orders with relation to discounted pricing and to make sure that all orders comply with requirements related to import and relevant laboratory regulations. Additionally, when new equipment is purchased, the laboratory management team engages directly with sales and technical representatives from relevant companies, to organise required demonstrations and training for any new equipment installed.

Laboratory Support Services

Angela Miller, Tracy Shields, Abbie McFarlane, Anna Shearer, Dilhani Kahawela, Jonny Sawers, Kirstie McPherson, Linda Bremner, Lisa Liu, Rory Mathie and Steph O'Brien.

Laboratory Support Services provides a vital service, supporting the research undertaken in the Institute. The team works closely with scientific officers and curators to ensure tissue culture suites are equipped with the consumables required to facilitate the work undertaken in these areas. Daily preparation of bacterial culture media and tissue culture solutions is essential, ensuring that our researchers have the supplies they require for carrying out their world-renowned research.

Essential laboratory equipment such as centrifuge rotors, water baths and pH meters are cleaned and calibrated by the team, preventing contamination, and allowing continual use of such equipment. The responsibilities of the team also include high turnover cleaning and sterilisation of laboratory glassware as well as collecting laboratory waste and ensuring the appropriate waste streams are rendered safe by autoclaving prior to disposal.

A sub team within Lab Support Services, called Specialised Lab Support focusses on the preparation of a repertoire of thirteen widely used buffers, *Drosophila* fly food and antibiotic containing agar plates for bacterial selection. The research demands have grown this year with the introduction of new labs requiring support, and the team continue to support and adapt to the requests of the researchers of CRUK SI with the dispensing of chemicals and new buffers for general use or in Ttissue culture.

Stores

Angela Miller, Alistair Horton, Laura McCartney and Michael McTaggart.

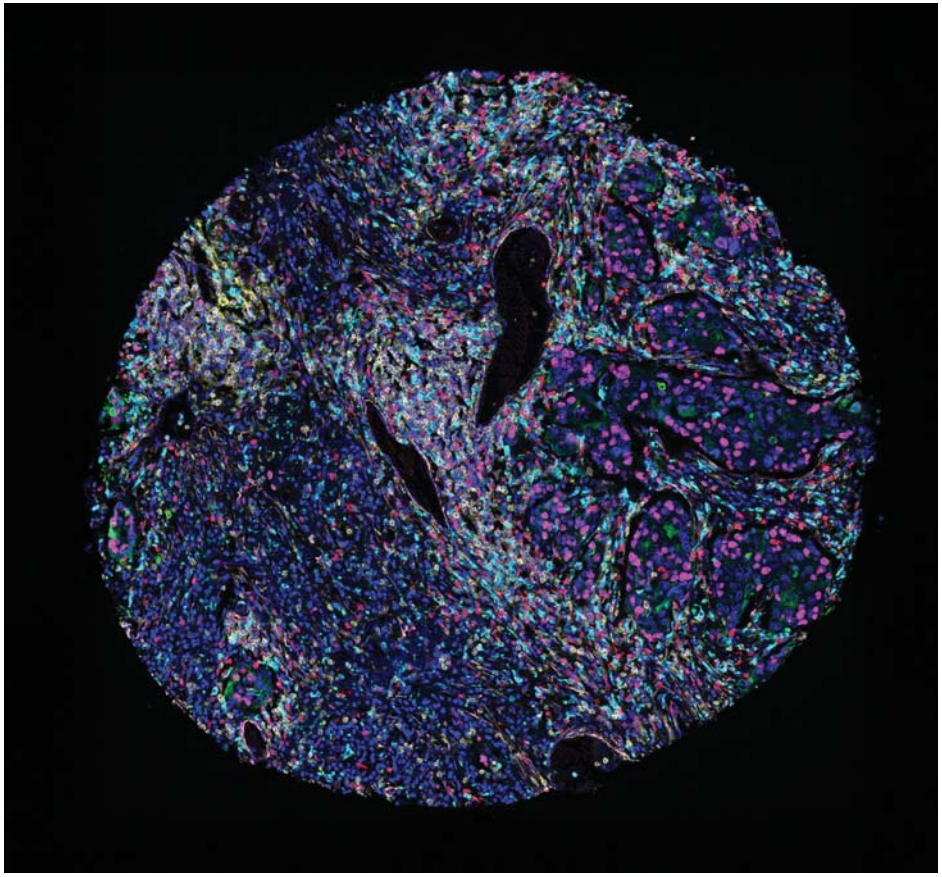
A wide range of stocks are kept of frequently used consumables from a variety of renowned scientific suppliers to ensure quality, high-use materials are always available. We maintain a good relationship with suppliers, which has allowed us to negotiate improved pricing and to reduce the overall value of stock held without compromising supply lines to the laboratories. This year, the Stores team have instigated various supply agreements to ensure that costs are kept as low as possible and to ensure that stores stock is readily available to researchers, with recent focus on cost savings between suppliers and contingency planning for several high-use tissue culture items.

Our Thermo Fisher Supply Centre established at the end of 2022, continues to hold consignment stock which is the property of the company until requested by the end user. In the last year, the number of items held on-site now stands at 83 research items reducing the numbers of external orders to this supplier. We are in constant communication with end users and the supplier to ensure that what we are holding on site is reflective of what is being ordered on a regular basis. The new items available are more in line with the current requirements of the researchers within the Institute. By introducing this concept, the items are replenished on a weekly basis in a consolidated order, eliminating packaging and dry ice whilst being more environmentally friendly in the long-term. This benefits the Institute, as it eliminates several items being purchased in bulk, in advance. By holding a set quantity, the supply centre can be replenished when required and this can be modified in line with research and project requirements.

In 2023, CRUK SI were also the first organisation to hold Peprotech items as consignment stock. The relationship with Peprotech is now established and we are communicating regularly about the possibility of adding new items in line with the current demand.

Stores items are withdrawn by researchers with automatic cost centre allocation and delivered to specific bays within the Institute at set times during the day. External orders are also received, processed, and delivered to the researchers, while outgoing samples or materials are processed by Stores for courier collection. The Stores team have increased their communication channels with the research groups since Stores has remained a closed service post Covid restrictions. Stores have implemented a substantial cost reduction for the Institute by transferring shipments of both UK and world-wide packages to an alternative courier, without impacting on the service provided. We continue to work closely with the research groups to review the services provided by Stores and improve what is offered to scientific staff. This includes negotiating samples from suppliers to enable the scientific staff to assess new or alternative products. This has resulted in considerable savings for the Institute, and, in the next year, stores will be undergoing some further changes, as stock items held will be reviewed and new kits and reagents brought in in conjunction with the changes in research needs.

Over this coming year, Stores plans to continue to make adaptations to the Stores list ensuring that the items held are being used regularly and we are optimising best use of our current space. There are ongoing meetings with external company sales representatives to ensure we have the stock we require for the research as well as alternative suppliers and products for when items are unavailable. We continue to focus on cost saving methods and we will be looking at more sustainable products in collaboration with suppliers and how to offer these whilst also ensuring best value for money when purchasing.



An 8-plex immunofluorescence panel applied to human lung adenocarcinoma - *Fiona Ballantyne, Leah Officer-Jones, Ian Powley, John Le Quesne*