KAIMRC’s solid infrastructure is unparalleled in the region

The growth of a research culture

A desire to improve the Middle East region through science lies behind cutting-edge work taking place in the central, western and eastern regions of the Kingdom of Saudi Arabia. Within state-of-the-art facilities bearing the King’s name, researchers are striving for breakthroughs in a bid to become leaders in their fields.

Officially established in 2006, King Abdullah International Medical Research Center (KAIMRC) has a research history stretching back to 1983 when work was conducted at the King Fahad National Guard Hospital as part of regular medical process. But as the hospital expanded, the National Guard Health Affairs (NGHA) established dedicated facilities, with a view to becoming one of the main streams for funding and research in the Kingdom.

KAIMRC has come a long way since, with an infrastructure to match world-class rivals. Stretching out within the campuses of the newly-established King Abdulaziz Medical City in Riyadh, in the eastern oasis region of Al-Ahsa and the western city of Jeddah on the Red Sea, the facilities are home to a wide variety of projects and research.

“We want to make sure that our laboratories are equipped to attract top scientists who can continue to conduct high quality research,” says Dr Ibrahim Abdulkarim, chairman of the genomics department.

These breakthroughs indicate the passionate support the King and his leadership give to research.

The vivarium research facility in Riyadh, for example, covers an area of 7,500 m². It breeds a variety of animals for laboratory research in a pathogen-free environment for terrestrial and aquatic species. They are equipped with individually ventilated cages, bio-safety changing stations, and up-to-date automated animal housing.

The Saudi Biobank, led by Dr Mostafa Abolfotouhaly, provides KAIMRC researchers with a full-scale repository for human biological samples. The Biobank facilitates scientists’ and physicians’ understanding of factors influencing chronic diseases affecting the population of Saudi Arabia, including diabetes, cancer, and coronary heart disease.

KAIMRC’s Umbilical Cord Blood Bank (UCBB) is a non-profit public bank that provides umbilical cord stem cells for patients in need. KAIMRC wants to store 10,000 high-quality cord blood units that will be used for clinical purposes with donor consent. UCBB scientists are working on several research projects that are expected to help develop the fields of stem cell therapy and regenerative medicine.

KAIMRC is also home to a trauma research section, a bioequivalence laboratory, an infectious diseases laboratory, a bone marrow registry, and a nanobiotechnology research group, among many others.

Steady expansion

Dr Ahmad Al Askar, KAIMRC executive director, spoke of the institution’s wide scope of scientific and medical activities. “The NGHA has developed a comprehensive system for the medical sciences from an academic point of view, for biomedical research, and for patient care.”

He pointed to KAIMRC’s publication output and how it reflects its growth. “We are now reaching high impact journals,” says Al Askar. Soon to be submitted for publication, for example, are results from the Saudi Genome Project, the first of its kind in the Arab region. The first stage of the study discovered haplotypes in the Saudi genome that go back as far as tribes that existed 150–170 thousand years ago. The researchers hope to use the results to better understand the prevalence of diseases such as diabetes and obesity among the Saudi population.

Another research programme into multiple sclerosis, which was expanded to include stroke and other neurodegenerative diseases, has also started to yield unique results. Led by Mohammed Aljumah, the former KAIMRC executive director, the team analysed the genetic variations of various Saudi patients, pinpointing specific SNPs in the Saudi population.

“These breakthroughs indicate the passionate support the King and his leadership give to research and their desire for the National Guard to be a leader in this field,” says Al Askar.

One of KAIMRC’s main challenges is recruiting highly qualified individuals for its facilities – a challenge being actively addressed. “We should actually count this as one of our achievements,” Al Askar says. KAIMRC has sent 50 Saudi scholars abroad, many of whom are PhD students. “Some have already returned and we expect many others to return soon. We are looking forward to their contributions to KAIMRC research.”