

The CANCER QUEST

Tracing the roots of a killer disease

By Mark Graham



Chairman Li Ka-shing makes a presentation to Her Majesty Queen Elizabeth II at the opening of the Li Ka Shing Centre in Cambridge.

The seeds of the project were sown when Mr Li read a magazine article

THE SCALE and the scope of the operation are simply breathtaking... purpose-built research centres, the involvement of a region's entire health service and a crack squadron of highly-qualified specialist scientists.

The reason for the size of the multi-million-dollar project becomes clear when its purpose is revealed: to try to find the causes of cancer, the dreaded disease that strikes indiscriminately at all ages, races and social classes.

Scientists at Cambridge, where some of the planet's top scientific brains make their academic home, are thrilled to be able to start a new kind of cancer research programme, aided by the Li Ka Shing Foundation, whose funding has allowed purpose-built centres to be constructed, equipped and staffed. The Cambridge operation is the envy of Europe and has already lured highly-rated specialists from the other side of the Atlantic.

The seeds of the project were sown when Mr Li Ka-shing read a magazine story focusing on the work being carried out at Cambridge University, the small city in eastern England with a big academic and scientific reputation. Further inquiries piqued his interest even more: the idea of helping such a groundbreaking project appealed hugely to Mr Li and the result is the creation of the Hutchison/MRC Research Centre and the Li Ka Shing Centre through a total donation of GBP22 million (HKD341 million).

It is difficult to capture the scale of project without massive oversimplification but in essence it aims to find out how cancer works by studying the genetics of the disease, how faulty genes make cells go awry, and how risks of developing different cancers can be inherited. All parties involved – patient, doctor, researcher, administrator, drug companies – are locked into one giant system and the interaction resulted from having all these different elements and resources in one geographical region should increase the chances of success.

“The aim is to develop Cambridge as a centre for cancer research and in particular as a centre which will be of practical benefit to patients,” says Professor Bruce Ponder, director of the Cancer Research UK Cambridge Research Institute.

“We now have a far stronger service for patients than we had five years ago and one that integrates surgery, pathology, radiology and cancer medicine through new multidisciplinary teams. These deliver first-class care and are the foundation for our research.”

Key to the project's success is Professor Ponder himself, who made the decision to step slightly back from his front-line research to take on more of an administrative role. He realised



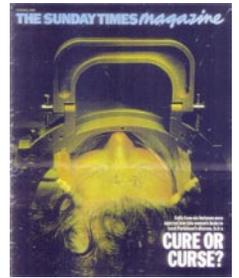
The Cambridge operation is the envy of Europe.

that for the grand scheme to work – of ensuring a smooth channel between all interested and relevant parties – it would need someone

who was familiar with all disciplines. It was a selfless call, made because he is convinced that the project is new, exciting and likely to lead to major breakthroughs.

“The overall aim is to bring world class research to bear on medical problems,” says Professor Ponder. “We can make earlier

focusing on the work being carried out at Cambridge University



diagnoses which will in turn mean better treatment. It is a huge investment and will make this a major regional cancer centre. We have put all the foundations in place.”

News of what is happening in Cambridge has made its way down the international scientific grapevine; researchers from the United States, a nation that has the funds to attract the brightest and best, are following developments with keen interest. So far a total of 28 senior cancer researchers have signed up for the programme, all with heavyweight qualifications and years of experience.

“It is an expensive and ambitious project which will enable cutting-edge academic research to be translated most effectively into the clinical setting,” says Professor Ponder. “Cambridge’s broad-based but integrated cancer research community will be uniquely well placed to take this forward in the future.

“We intend to create a ‘virtual National Health Service laboratory’ in which the framework of the health service can be used to evaluate the practical applications of our research towards early detection and prevention of cancer and towards the early choice of the most appropriate treatment.”

In practice, that means that a young Cambridge woman unfortunate enough to discover she has breast cancer can take some small comfort from the knowledge that her case will be receiving attention from her local physician and, in the background, be part of a far bigger project. Researchers will be able to track for genetic patterns, information that, when processed, will lead to better assessment for treatment and narrow down the causes. In essence, it will make it way easier to determine who, exactly, is at most risk of developing the dreaded disease.

The project will largely focus on the common cancers... breast, prostate, colon, lung, oesophagus and ovary. Already there have

SYMBOL OF HEALTH

PEOPLE visiting Cambridge University’s state-of-the-art cancer research centre will pass by a striking modern work by Chinese sculptor Ju Ming.

The Taichi Arch – Gate of Health, a large bronze sculpture, was commissioned by Mr Li Ka-shing in order to give the grounds a strong artistic component. Mr Li believes this magnificent sculpture is in synch with the work at the institute and cites Albert Einstein’s inspirational thoughts on the links between art and science.

“All religions, arts and sciences are branches of the same tree,” Einstein said. “All these aspirations are directed



toward ennobling man’s life, lifting it from the sphere of mere physical existence and leading the individual towards freedom.”

The sculptor, who is known for his bold outdoor works, grew up in a poor family with 11 other siblings. His artistic talent was revealed when he began carving images for a Buddhist temple as a teenager.

Mr Ju worked and studied in China before heading to Taiwan, Japan and Italy to further his knowledge. The master is renowned for massive polished-steel sculptures that can be found in France, Singapore, Japan and Hong Kong.

The more science knows about a particular cancer – the way it

been breakthroughs: Professor Ponder and his team have refined a system of genetic profiling that will allow women at higher risk of developing breast cancer to be identified, and screened, earlier.

“Our team at Cambridge has created a bit of a stir internationally,” says Professor Ponder. “Our potential has been recognised and people are looking at what we are doing with great interest. Such a large investment has given us a great sense of responsibility. We are very conscious of doing the best we can.”

Project scientists are now working in a purpose-built, fully-equipped facility that is the envy of the world. The GBP50 million Li Ka Shing Centre on the Cambridge Biomedical Campus was funded jointly by Cambridge University, Hutchison Whampoa Limited and Cancer Research UK, plus a range of other donors, and was opened by Queen Elizabeth II. It will augment the Hutchison/MRC Research Centre, which is already up and running.

The first holder of the Li Ka Shing Professorship of Oncology, worth GBP2 million, is Professor Ponder. “The generosity of Mr Li has inspired and made possible in Cambridge a new, internationally excellent centre for cancer research,” he says. “My colleagues and I are truly grateful for this further demonstration of his support.”

Mr Li has been a strong supporter of Cambridge University for some time. He contributed to the new wing of the Churchill Archive – built to house the papers of Baroness Thatcher, the former prime minister – and in 2000 established the Li Ka Shing Programme for Cambridge Scholars, funding a series of lectures and research visits to China by Cambridge academics.

It will be future generations who benefit from what is happening now in the labs of Cambridge under the supervision of Professor Ponder and his team. The more science knows about a particular cancer – the way it develops, the people more susceptible to it, the way it mutates – the better doctors are equipped to deal with its effects.

“If we can find out which people are high risk, we can begin to understand what makes them high risk and why they are at risk,” says Professor Ponder.

In other words, if the root cause can be established, the easier it is to examine how that can be dealt with and, ultimately, if not in this generation then the next, find a way of curing the disease that is the scourge of the modern world. There can be few more noble callings, working long hours often in isolation with the goal of helping alleviate human suffering and misery.

It was admiration for such dedicated professionals that led Mr Li to support the project. It was, he says, a deserving cause that fulfilled a lifetime ambition of wanting to help fellow citizens.

“It has always been my dream that knowledge and caring can

help to make the world a better place,” he says. “Building this institute is part of that dream. I have seen, at first hand, how the benefits of healthcare research have translated into improvements in the quality of life to the sick and infirm. Cambridge University is one of the world’s beacons of learning, and I have great faith that the research conducted in the centre will prove to be invaluable medical advancement to the world.” 

TOP TEAM

A FORMIDABLY TALENTED team of top scientists, headed by much-respected Bruce Ponder, work at the Cambridge research centres.

Professor Ponder, 63, has had a long and distinguished career in cancer research and treatment; the many awards and honours on his CV testify to the high regard in which he is held by fellow scientists.

Having such a world-renowned figure in charge, taking on administrative and managerial duties that are a step

away from his first love – research – was a major coup for the project. The boss also acted as a magnet for other talented and ambitious scientists; they reasoned that if Bruce Ponder was on board, there must be something rather special happening.

“My research was going pretty well when

I took this job,” says Professor Ponder, whose wife is a trained nurse. “It is a big administrative responsibility, but our potential here has been recognised and there is a great deal of interest. A lot of people have invested here and we are very conscious of the responsibility.”

The professor remains head of oncology at Cambridge University in addition to being a director of the Cancer Research Institute, co-director of the Hutchison/MRC Research Centre and head of a research team looking into the genetic predisposition to cancer.

Other people working with Professor Ponder are established specialists in their own fields. They include Professor Ron Laskey (DNA replication and early detection of cancer), Professor Ashok Venkitaraman (cell cycle control and cancer drug resistance), Dr James Brenton (ovarian cancer genomics), Professor Kevin Brindle (imaging tumour responses to therapy), Professor Carlos Caldas (breast cancer genomics), Dr Nick Coleman (early diagnosis of cancer), Dr John Griffiths (preclinical and clinical imaging), Professor David Neal (androgen resistance in prostate cancer), Professor Fiona Watt (stem cells and epithelial biology), Dr David Tuveson (pancreatic cancer) and Professor Simon Tavaré (biomolecular computing).



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Mr Li with Professor Bruce Ponder (top left) who leads a team of talented scientists at Cambridge. “We are very conscious of doing the best we can,” Professor Ponder says.