Biotech Daily's CEO interview

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WEHI's Doug Hilton: Evolution & Very Intelligent Design

Australia's preeminent medical research establishment, the Walter and Eliza Hall Institute, continuously produces basic discoveries, such as last week's invisibility cloaking of the malaria parasite, as well as developing commercializable compounds and drugs.

The Sixth Director, Prof Doug Hilton, pays credit to his predecessors Prof Suzanne Cory and Prof Gus Nossal for his inheriting the major themes of the Institute, but also quotes advice from Prof Nossal following his appointment: "Make the job your own – every director has their strengths and the things they like". The end-result is a research institute created both by evolution and very intelligent design.

On a muggy tropical Melbourne morning, 47-year-old Prof Hilton in number 1 haircut, dark grey t-shirt and black check shorts keenly pays tribute to his mentors and collaborators, disarmingly showing off an advertisement for his first major discovery Esgro, the leukemia inhibition factor used globally to cultivate mouse embryonic stem cells.

Esgro was discovered with Amrad, the biotechnology company established by Victoria's John Cain Labor Government in 1986. Esgro was on the market in 1988 and still returns its inventor a small royalty.

The inventor on more than 20 patent families, Doug Hilton is an easy conversationalist, with down-to-earth concerns about collaboration, the funding of medical research, his own family and the imminent surgery required for the family Kelpie, Jessie.

The learned texts in his bookcase are adjacent to a set of Charles Darwin volumes and several books by Prof Richard Dawkins, artworks by his children as well as those by professional artists and memorabilia including an American football, awards and WEHI visitors' books.

Born near Slough about 40 kms west of London in 1964, Doug has barely any memory of the time before his parents became “£10 Poms” and immigrated to Australia in 1970. Mum was a medical secretary and Dad was a production engineer, unlikely to get much promotion in England.

The one and a half acre bush block in then rural Warrandyte and Mr Hilton’s new job at CIG in Preston were a world away from England, but the immediate pleasure was not long-lived. In 1975 on what was effectively the family’s first real holiday Doug’s father drowned, caught in the surf and dragged out to sea.

While Doug Hilton is clearly not the product of a materially comfortable life, he pays tribute to his Year 12 Higher School Certificate teacher Libby Holland at East Doncaster High School, who encouraged him to study an option on DNA.

“What she taught me was that there was a lot still to be discovered. She would say: ‘I don’t know. Go and find out’.

“As [learning] got more and more specific and I learned what was known from unknown, it got more exciting.”

Again he pays tribute to another mentor, Monash immunology professor Richard Boyd. With a Monash Bachelor of Science, Doug transferred to the University of Melbourne for his honors year and was told by Prof Boyd that what he really needed to do was transfer to WEHI, which led to completing his Doctorate of Philosophy in molecular haematology and the invention of Esgro, which in turn led to his supervision of a group at Amrad.

Amrad became Zenyth and was acquired by CSL and Doug is extremely pleased to continue the collaboration with the biggest of Australia’s biotechnology companies.

“We need four or five CSLs to take drugs to market,” he says.

And it is collaboration that is key to the evolution of WEHI. Prof Hilton says that he inherited the WEHI focus on the three major indications of cancer, infectious diseases and inflammatory disease, but it is a welcome inheritance. WEHI does not do research into cardio-vascular disease or neurobiology, with other institutes like the Baker IDI and Howard Florey more than capable of doing that work.

“It’s not sensible from a strategic viewpoint to be duplicating work.

“I want the Institute to be internally and externally collaborative. I want people who enjoy working together and want to work together for long periods of time. I want people who genuinely get excited about working together,” dismissing collaborations of convenience in which scientists will swap information for a specific publication on a once-off basis.

And he is proud of the age range of WEHI personnel from 18 year old students to 83 year old Prof Don Metcalf and younger luminaries like Prof Nossal, Prof Peter Colman and Prof Andreas Stasser.

“I inherited the themes from Suzanne Cory and before Suzanne, Gus, and there was no need to slash and burn research programs.

“Suzanne added bioinformatics and structural biology and I’ve pushed chemistry and biology including high-throughput screening along with new divisions of systems biology and personalized medicine.”

Prof Hilton’s foray into the world of politics with last year’s ‘Discoveries Need Dollars’ campaign was not of his choosing (BD: Apr 8, 1, May 11, 2011). He was a generation after the protest movement, but as director of the Institute found that he had a national stage.

Despite subsequent Federal Government protestations, Prof Hilton says the threat of a $400 million cut to the National Health and Medical Research Council budget was real.

“As the director you need to think more broadly than WEHI. And what is good for general research is in turn good for WEHI. [Previously] we hadn’t articulated what medical research brought the community and why funding health and medical research was important.”

The successful campaign forced the Federal Government to leave the NHMRC budget unscathed.

The importance of NHMRC funding is exemplified in WEHI’s commitment to support indigenous health.

Far from window dressing, a program has been developed with the Menzies School of Health Research in Darwin to address the 500 times disproportionate rate of rheumatic fever among indigenous populations – now funded by a grant from the NHMRC.

WEHI is contributing its skills in bioinformatics, genetics and immunology to search for a vaccine for a disease almost gone in Western populations and causing major health problems among Australia’s indigenous people. The collaboration is looking at the difference in immune responses and hopes to create a vaccine for rheumatic fever.

In a WEHI biography, Prof Hilton says the Institute’s collaborative teams must be close-knit, trans-generational and outcomes-focused; the University of Melbourne must remain a key partner in training the next generation of researchers; the Institute must forge stronger links with clinical colleagues at the leading public teaching hospitals; and collaborations with the private sector, must continue to be actively and intensively pursued.

“We have the responsibility to make big basic discoveries that change the way scientists view the world. We are not a basic biology research institute, we are a medical research institute and we translate research into medicine with the World Health Organisation, CSL and GSK among others and we do not shy from that.”

Prof Hilton says the 1999 Peter Wills Review of NHMRC funding ‘The Virtuous Cycle’ has taken time “to percolate through the Institute as well as the donors”.

The issues raised by an institute receiving funds from pharmaceutical companies, Federal Government grants and donations from wealthy and charitable families are not always easy to resolve, but Prof Hilton says that drug companies are interested in specific projects, while other work needs to have continuous funding.

He is proud of the work done with Genentech and Abbott Laboratories on the pro-apoptosis (cell death) drugs ABT263 in phase II trails in Australia and ABT199 in a phase I trail in Melbourne (BD: Jul 19, Aug 8, 2011).

The 20 years of research includes three-way collaborations with WEHI, Genentech and Abbott on a compound discovered by Abbott in the US and developed by WEHI in Melbourne.

“The grand challenge for the next 10 years is to reap the benefits of medical research that is affordable and accessible and benefits the patient.”

David Langsam
Editor