Biotech Daily's
CEO interview

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MIPS' Prof Bill Charman: From Pharmacy College To Biotech Crucible - Plus

Opposite the Carlton Football ground in Princes Park, Parkville, several buildings have been rebuilt, renovated and new ones added, to create Monash University's Faculty of Pharmacy and Pharmaceutical Science.

The Faculty emerged from the old Victorian College of Pharmacy and includes the research incubator the Monash Institute of Pharmaceutical Sciences.

Bursting with enthusiasm for the combined establishment, the Faculty dean and Institute director Prof Bill Charman is embarrassed by questions about him, deferring to the team and the large number of world leading scientists he works with.

"It's not me. It's the people we have here," Prof Charman says.

But it is hard to imagine that Bill Charman didn't play a pivotal role in creating both the Faculty and the Institute.

Now aged 52, Bill Charman's educational journey is inspirational, beginning at Frankston Primary School in the 1960s, then moving to the hard working class Technical Schools of Frankston, Doveton and Doveton North and sitting his Higher School Certificate at Dandenong High School in Melbourne's outer Eastern suburbs, making it into the College of Pharmacy on a second round of entry application offers.

The College was a sea change in his academic career, taking him to a Bachelor of Pharmacy degree, leading to a Ph D in drug design at the University of Kansas in 1983 to 1986 – "then the leading pharmaceutical chemistry program in the US".

From Kansas he joined Sterling Drugs as a discovery scientist for four years before returning home to the Pharmacy College in 1990 as a senior lecturer, becoming part of Monash University in 1991, and rising through the academic ranks to professor, culminating in his present position as dean of the Faculty.

"Monash has been totally brilliant," Prof Charman says.

The 1,200 undergraduates within the Faculty work with the leading researchers at the Institute, learning along the way that a pharmacy degree opens doors to a world of jobs and opportunities.

Prof Charman says the campus has 130 Ph D students and 150 research and professional staff, along with the latest in high-tech systems and laboratory equipment, ranging from spectroscopy to surround sound 3-dimensional screens to simulate working in a real pharmacy in a 'virtual practice environment'.

Pharmacy students learn their trade on a campus described by Prof Charman as "the best facilities and the best education … [with] world leading biologists, experienced chemists, the most successful experienced discovery, delivery and development scientists in Australia, in an environment and culture with a long term vision, that supports their expertise and creativity, inspiring the next generation of leaders".

He says the Institute will gain the services of former Glaxosmithkline, Cambridge University and Heptares Therapeutics senior researcher Dr Chris Langmead to lead the Institute's joint discovery program with Servier, from June 18, 2012.

"Our success will be judged by the Ph D students and graduates who go on to impact and lead their fields," Prof Charman said. "Students love learning here."

The money comes from government, the corporate sector and charitable institutions including the Bill and Melinda Gates Foundation and Prof Charman nominates partnerships and collaborations with Servier Laboratories, Glaxosmithkline, Starpharma, the Cancer Therapeutics Cooperative Research Centre, Iliad and Eli Lilly among many.

Prof Charman says the Institute is "a significant part" of the $60 million Glaxosmithkline upgrade at Boronia announced earlier this year (BD: Feb 3, 2012).

But Prof Charman says staff and students don't need to worry about money.

"If you have the best possible idea, the money will come."

And the best environment will create the best ideas.

The most recent collaboration was a three-year deal with Servier to collaborate on drug discovery and research on G-protein-coupled receptors (GPCR), described as the largest super-family of receptors comprising about two percent of the human genome, and the targets for nearly 30 percent of drugs (BD: Jan 30, 2012).

Servier will pay MIPS support for research activities and 15 full-time equivalent staff and MIPS will receive milestone payments for each collaborative project as well as royalties for any product developed as a result of the collaboration

Prof Charman says his Institute has developed GPCR expertise, comprising technology, research facilities and scientists that enabled it to conduct fundamental research, drug discovery and preclinical drug development activities on GPCR targets with therapeutic potential.

The key to the GPCR program is the concept of allosteric drugs that are not all-or-nothing compounds activating or preventing an entire process, but ones that can discriminate in the signals sent, rather like a dimmer switch compared to an on-off switch for therapeutic differentiation within a drug target class.

Prof Charman gives an analogy to a receptor of a house with either all the lights on or all the lights off and says the Institute's project intends to create compounds that can select the individual rooms within the house that require lights on and lights off.

He says that the right partners are needed for long term projects like the GPCR program and "Servier get that long term view and are a primary partner in this area".

Prof Charman says the concept has been demonstrated in mice, but not larger animals, so far. "We can do it," he says.

Prof Charman says the Institute has four main divisions: Medicinal Chemistry; the Centre for Drug Candidate Optimization, which has collaboratively supported 16 compounds into clinical trials; Drug Delivery, which was the origin of the Acrux technology (BD: Mar 15, 2012); and Drug Discovery Biology.

"We're not a drug discovery company, we are a research institute with excellent, deep, basic science in our four areas," Prof Charman says and proudly quotes the front page of Nature magazine from 2004 on his Institute: "an object lesson in drug development".

In describing the key areas of therapeutic interest, Prof Charman covers most of the possibilities: metabolic diseases, immune and inflammatory diseases, infectious diseases, along with cardiovascular, cancer and central nervous system diseases.

And apart from the partnerships with the commercial world, the Faculty has education partnerships with the University of Queensland, University of Sydney and University of South Australia.

"This is about creating an industry and jobs for the future. The support from the Victorian Government has been exemplary," Prof Charman says.

Prof Charman quotes the key phrases from the Gates Foundation "Innovation, Collaboration and Impact" and adds his own for the Institute: "Better medicines, by design."

"You need a contemporary structure to translate ideas, biology and chemistry to the drugs of the future and that's what we have here at MIPS."

It's a long way from Victoria's College of Pharmacy and much longer journey from Doveton North Technical School.

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