

Profile

Glenn Marshall: lynchpin for research in paediatric cancer

Glenn Marshall's training in paediatric oncology came at a time of great optimism when technology, treatments, and cure rates were all improving. But softer skills also drew him into the specialty. "I'm very much a humanist, and had the privilege of working with mentors who could think scientifically about their clinical work, but also see the intensely human side of clinical care, dealing particularly with the tremendous strain that parents of children with cancer go through", says Marshall, who is Head of Translational Research and Molecular Carcinogenesis for the Children's Cancer Institute Australia at the Lowy Cancer Centre in Sydney and Director of the Kids Cancer Centre at the Sydney Children's Hospital.

During his training at the Children's Hospital Los Angeles and the University of Southern California, under virologist and cancer biologist Peter Vogt, Marshall undertook experimental work with a team of dedicated postdocs on the newly discovered Jun oncogene. He then returned to Sydney, in 1992, at a time when the Children's Cancer Institute Australia was beginning to grow, and where he would become part of a highly successful triumvirate with fellow researchers Murray Norris and Michelle Haber. "We were doing translational work long before it became as popular as it is today", notes Marshall, who still spends up to half of his time in the lab. "As a clinician-scientist you need to be able to recognise a problem at the bedside, take it to the laboratory bench either yourself or with others, and, then hopefully armed with a solution back to the bedside."

Marshall and his colleagues' work for the institute has seen it become an epicentre for paediatric cancer research. "Along with Michelle Haber and Murray Norris, Glenn Marshall has made the Children's Cancer Institute Australia one of the premier children cancer research translational centres globally", says Andrew Pearson, from Cancer Research UK and a Professor of Paediatric Oncology at the Institute of Cancer Research and the UK's Royal Marsden NHS Foundation Trust. One of the projects that Marshall, Norris, and Haber have focused on is minimal residual disease (MRD) testing in children with acute lymphoblastic leukaemia. They have pioneered the use of MRD testing to predict the risk of subsequent relapse of leukaemia in patients in apparent remission. "After identifying these children at high risk of relapse, we gave them more intense treatment, including a bone marrow transplant, and improved the survival of this high risk group from 25% to 70%", explains Marshall, who is now trying to secure federal and state funding for MRD.

Another research interest for Marshall and his colleagues is precancer. Excess embryonal remnant, or rest cells, can persist postnatally to later turn into cancer in children. Marshall's team recently published a murine model study

of how the embryonal cancer neuroblastoma first begins in rest cells. "If we develop a strategy to remove these rest cells, which are the very earliest initiating embryonal cancer cells, then up to two-thirds of children's cancer would vanish and I'd be out of a job, which would be a good thing!" he asserts.

Recent funding from Australia's National Health and Medical Research Council is allowing Marshall's team to take forward its pioneering research, which includes a team dedicated to designing new drugs for children's cancers with support from pharma to help develop successful candidates. Alongside these efforts, he is the Director of a new network, the Kids' Cancer Alliance, that links together those working on childhood cancer in New South Wales. It aims to bring researchers and clinicians together to work on projects as diverse as drug discovery, early phase trials, new diagnostics, tissue banks, survivorship, and research infrastructure. "Our hope is that we can leave an enduring infrastructure which combines the best discovery science with the best clinical practice, so forming a platform for training the translational cancer researchers of the future", Marshall says.

He has also dedicated himself to initiatives that are not within the traditional paediatric oncologist's portfolio. "Glenn is an outstanding clinician-scientist and has contributed extensively to many different facets of paediatric oncology and has a truly holistic approach", comments Pearson. A concern for the wider lives of his patients characterises his outlook, and he has run a pilot project to have educational liaison officers based in children's hospitals to make sure patients in hospital keep up-to-date at school. "The commonest concern of parents when their child comes off chemotherapy is reintegration back into school. And the kids themselves want to remain in the same year group as their friends", he says. Caring about his patients' future lives is also important and he is a strong advocate for adult survivors of childhood cancer, who are at high risk of developing other cancers in future and need care and support.

Marshall's varied and demanding work is kept in balance by a strong family life, and he tells young doctors "it's essential to have a good home life to get you through the difficult moments like having to tell a young person, and their family, that they are not going to survive". He also disengages from work with regular running, surfing on his beloved long board, and portrait painting. "Glenn Marshall is the clinical lynchpin of one of Australia's most successful translational research teams", says Doug Hilton, of Melbourne's Walter and Eliza Hall Medical Research Institute. "The same passion that he has for the Sydney surf is evident in the care he has for his patients and the verve he has for research."

Tony Kirby



See [World Report](#) page 1804