



# RESEARCH2REALITY

Shining a light on research & innovation.

## Winning the Race Against Organ Failure

An Interview with **Philip Marsden**, Kidney Doctor, St. Michael's Hospital  
Medicine by Design, University of Toronto

I'm a kidney transplanter, but at its heart I'm interested in what goes wrong with the organs in our body when they get injured. Because in kidney disease, the kidney is good at repairing, but not great, and sadly here in Canada there are thousands of patients waiting for organ transplants, our goal is to get fewer patients needing a transplant by making their kidneys regenerate and fix themselves.

### How can we overcome organ failure?

Clinical medicine has done a wonderful job of tackling some key issues. Especially in developed countries, we've handled nutrition, we've handled sanitary conditions, and we've started to get into the chronic diseases, for instance heart disease. But organs are failing as our aging population is hitting its 70s and 80s. Wouldn't it be great to age in a healthy fashion where our organs don't start to progressively shut down? And that's the challenge we have right now that our ability to fix broken organs is catching up with us, and it's a major challenge. If we fully understood them, a lot of us have confidence that we can help our population age in a healthy fashion.

### What is challenging in your research?

It always frustrated me as a caregiver to talk to the parents of a child whose kidneys had shut down, why aren't they healing properly? It seems like a pretty straightforward question when you think about it, because you can take a gecko lizard and cut off its tail and it grows back. Making the system repair itself from the ground up, without fancy chemicals or the need for organ transplants, which are important, but wouldn't it be great to recapitulate the development that we all went in from a single egg when we were first conceived?