



Perry Cross
Spinal Research
Foundation
To Cure Paralysis For All™

The Spinal Injury Project

Cell Transplantation
and Rehabilitation
Human Clinical Trial

Partnership Prospectus

In partnership with



What if the ability to repair a spinal cord injury became a reality in the next five years?

The Spinal Injury Project at Griffith University, in partnership with the Perry Cross Spinal Research Foundation, is on the cusp of making this happen with a world-first Cell Transplantation and Rehabilitation Human Clinical Trial.

The project team is a leading group of research specialists including bioengineers, medical doctors, biological scientists and educators working together to develop this breakthrough treatment.

The research was first initiated by the late Griffith University Professor Emeritus, and 2017 Australian of the Year, Alan Mackay-Sim almost 20 years ago. He was a pioneer in stem cell research and was successful in taking cells from the olfactory (nasal) system, transplanting them to the injury site and demonstrating that it was safe for use in humans.

Building on Professor Mackay-Sim's incredible legacy, our ongoing research has demonstrated that repair of a spinal cord injury is possible, and the clinical trial will show that repair can be a reality.

Together with generous donors and our key partners the Motor Accident Insurance Commission Queensland (MAIC) and the Clem Jones Foundation in Brisbane, we have provided significant investment, leadership and advocacy to reach this crucial stage.

We are now seeking bold and committed philanthropic partners to join us to ensure that the clinical trial can commence before the end of 2023.

We invite you to join us today on this urgent and vital transformational journey of discovery to recovery for the tens of thousands of people in Australia and the millions across the world, who every day live their lives with the challenges of a spinal cord injury.



The late Emeritus Professor
Alan Mackay-Sim AM



Prof James St. John
Head Centre for Neurobiology
and Stem Cell Research
Griffith University



Perry Cross AM
Founder & President
Perry Cross Spinal Research Foundation

Perry's story

I was injured and broke my neck playing Rugby Union in 1994. I am now a C2 ventilated quadriplegic, paralysed from my chin down requiring 24/7 care. My injury has meant I have faced great challenges and enormous loss. Despite the difficulties, I have also had an extraordinary journey advocating for change for others.

In 2010, I started the Perry Cross Spinal Research Foundation with the mission to cure paralysis for all. Over the ensuing decade, with the support of incredible donors, we have raised over \$14M for research focusing on a cure and whilst we have made great progress, we aren't quite there yet.

I want to help the spinal cord injury community restore feeling and regain function, like bowel and bladder control, but ultimately my greatest hope is to give people their dignity back. I want everyone to be able to stand and hold their families once more, to feel their toes in the sand, to have some independence again.

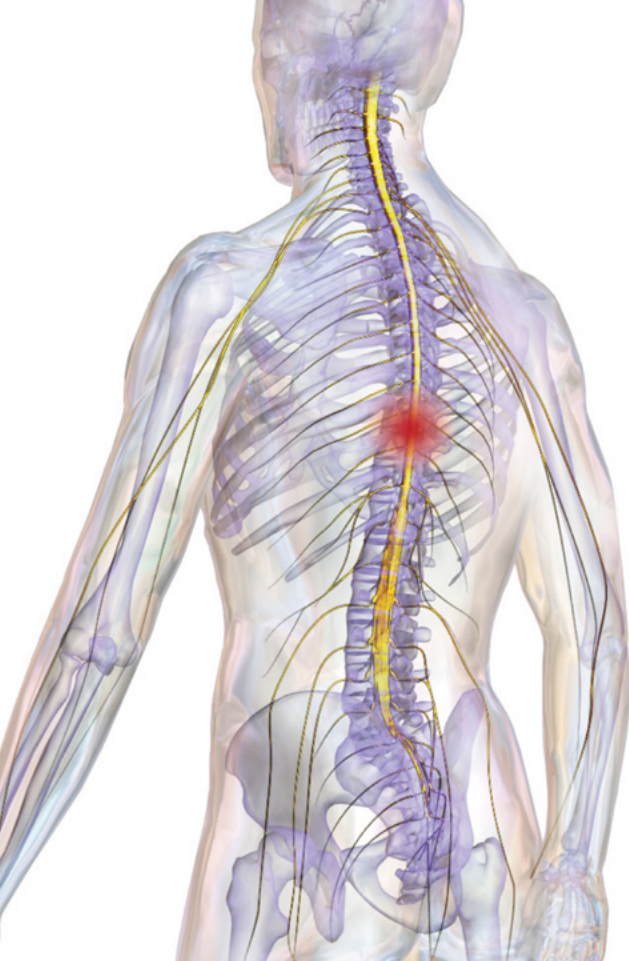
Finding a cure of this magnitude takes universal force and collective power. Every time someone links arms with us, our global movement strengthens, our voice gets louder, our presence more visible and a cure becomes a reality.

Join us now to help accelerate this ground-breaking treatment that will transform the lives of those of us who live with paralysis.

'Everything Is Possible.'

Perry Cross AM





What is spinal cord injury?

The term 'spinal cord injury' refers to damage to the spinal cord resulting from trauma, disease or degeneration.

Symptoms may include partial or complete loss of sensory function or motor control of arms, legs and/or body (paralysis). The most severe injury affects bowel or bladder control, breathing, heart rate and blood pressure.

Spinal cord injury can happen to anyone at any time and the recovery of function varies greatly with the most severe cases showing minimal to no recovery.

Lindsay's story

Brisbane local Lindsay Nott is a man who has made the most out of life.

On the last day of year 12 Lindsay went to South Bank Parklands in Brisbane to celebrate. "Four of us ran into the pool, three came up and I was the unlucky one that hit my head and the rest is history."

Lindsay became a C4/C5 quadriplegic because of his accident and endured many painful months in the spinal unit, devastated.

With the support of his family and friends, Lindsay has gone on to live in his own home, travel the world and find fulfilling employment.

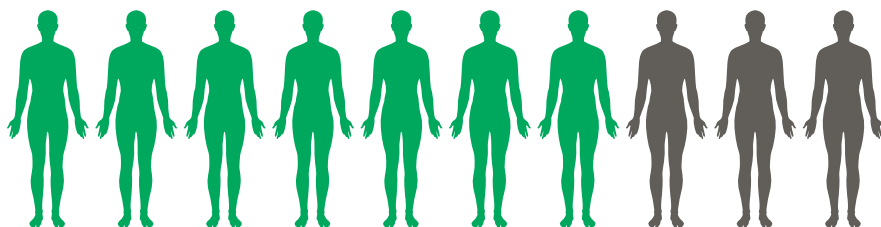


"There is light at the end of the tunnel, we are getting there. The rehabilitation work being done at Making Strides in conjunction with the research in the lab at Griffith University is amazing. We are on the cusp of a cure for paralysis."

20,800 Australians have spinal cord injuries & there are **400** new traumatic injuries every year



Males account for **70%** of spinal cord injuries



The main cause for injuries

42%

falls

40%

vehicle accidents

11%

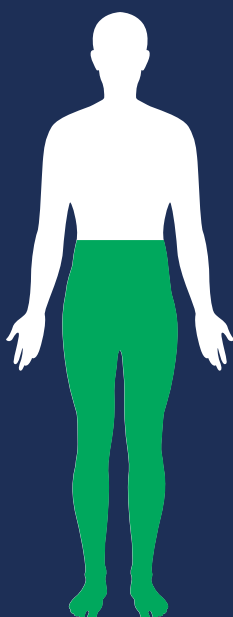
sporting injuries

7%

other

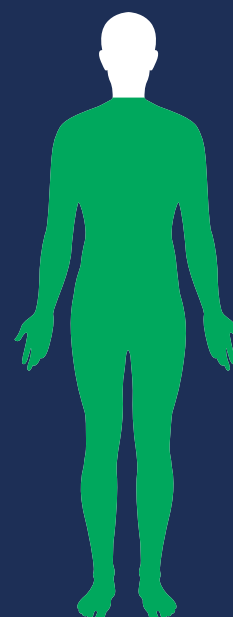
58%

of spinal cord injuries resulted in **paraplegia**



42%

of spinal cord injuries resulted in **quadriplegia**



The Discovery to Recovery Journey: 2002 to 2023

2014

A human trial by Polish and British researchers demonstrated that restoration of function is possible.

Within 6-12 months after transplantation a patient, who had been paralysed for several years prior to the treatment, regained some motor function of his legs, bladder control, and most importantly, sensation.

2021

Intensive rehabilitation trials begin to test the delivery and safety of providing long-term intensive rehabilitation to people living with spinal cord injury.

These trials have demonstrated that intensive long-term rehabilitation is safe and suitable for people living with chronic spinal cord injury.

2002

Ground-breaking human clinical trial led by the late Alan Mackay-Sim, 2017 Australian of the Year and Griffith University Professor Emeritus.

This trial was successful in demonstrating that taking cells from the olfactory (nasal) system and transplanting them to the injury site is safe for use in humans.

2017

A world-first, innovative 3D nerve bridge was developed and the pre-clinical research successfully demonstrated the safety of the treatment.

At the same time, the Queensland Government through the Motor Accident Insurance Commission, awarded Griffith University \$10.8m over 6 years for pre-clinical research to develop a therapy using olfactory cell transplantation.

2023

Commencement of Cell Transplantation and Rehabilitation Human Clinical Trial.

This trial will test the safety and efficacy of the cell transplantation and rehabilitation in 10 people living with spinal cord injury and will take 2 years.

Steve's Story

After a camping trip in Port Macquarie, Steve's life changed forever.

"I was away for the weekend camping with mates and I jumped into a pool. There was a large step that jutted out and I just didn't see it. I bumped my head on the step, unfortunately."

Steve lay face down in the pool, unable to breathe and as a result of this tragic accident, he was injured at C4/C5 and was left a quadriplegic.

Steve has worked hard on his outlook and approach to life. He has focused on his rehabilitation and now lives independently and has been able to return to work.

"We need a cure for paralysis. There is so much complexity, angst and heartbreak for people with injuries."

"I've had the privilege of visiting the lab and seeing the amazing work Griffith is doing. The success they have already had is incredible. It's not a fantasy, a cure is a reality."



"Despite the challenges, I try to stay positive. I know there's more to life than just this. I am optimistic about a cure for paralysis."

Kurt's story

Kurt Drysdale was injured just before his 21st birthday playing rugby league. He is paralysed from the neck down and needs a respirator to breathe.

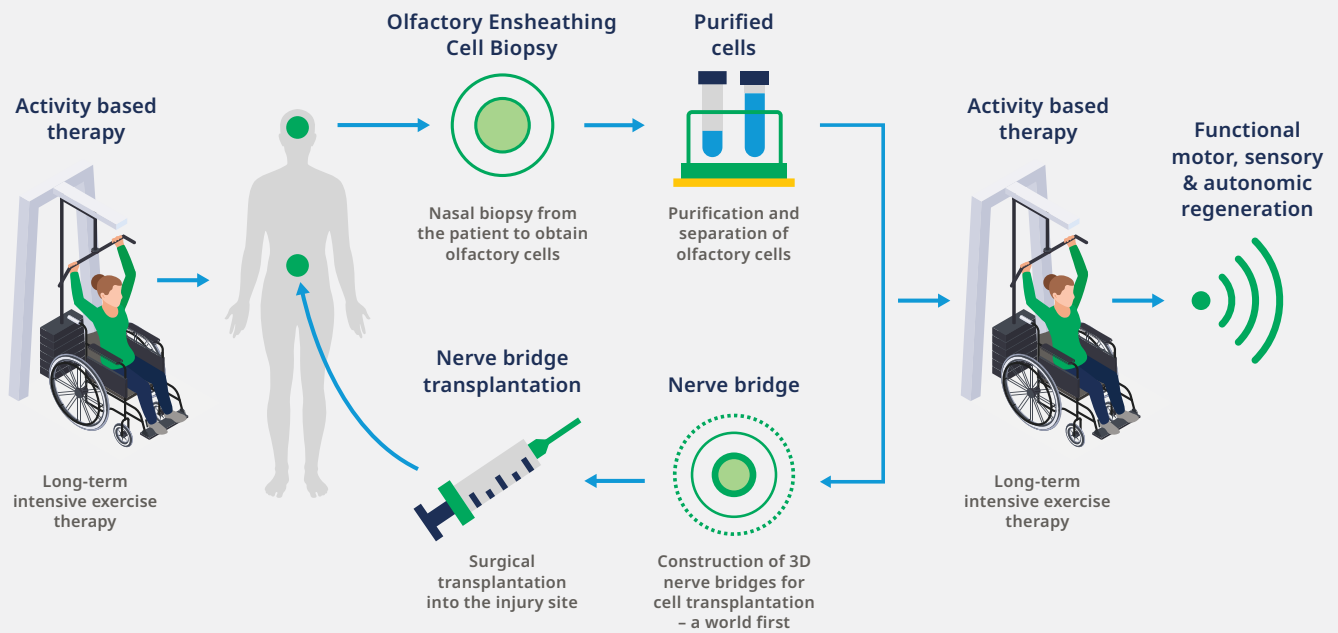
"It was tough both mentally and physically. Obviously, I couldn't feel or move, but then watching my family and friends go through the shock of seeing me this way was also extremely difficult."

Kurt has had to learn to swallow and talk again and he needs full time support to do everyday tasks. He is working hard on his rehabilitation and is determined to see some recovery.

The treatment

This ground-breaking, world-first treatment involves the transplantation of the patient's own olfactory cells from the nose into the spinal cord. Central to the success of this treatment is intensive rehabilitation that takes place before and after the cell transplantation.

Having proven that the treatment is effective in preclinical research, the team is now ready to test the therapy in a human clinical trial with an anticipated start in 2023. The trial will have 10 participants, will take 2 years and will test the safety and efficacy of the cell transplantation and rehabilitation.



Intensive Rehabilitation

The clinical trial will require participants to take part in an intensive rehabilitation program before and after the cell transplantation.

Participants will train intensively at the gym for 16 weeks. Throughout the trial functional, medical and psychological assessments will be conducted to determine participants outcomes.



World-First Nerve Bridges

The Spinal Injury Project is reinventing and rethinking how cells can grow leading to the creation of new cell products. By combining advanced cell purification and engineering techniques the team has designed three-dimensional nerve bridges that allow neurosurgeons to precisely place the cells into the injury site. This dramatically improves the survival of the cells.

By enabling the cells to form stable connections within the nerve bridge prior to transplantation, the cells rapidly form a permissive bridge over the injury site that allows the spinal cord nerve cells to regenerate. Using the patient's own cells greatly improves the safety of the treatment. This results in a treatment that has extremely rapid production times, is more effective and more affordable.

The Spinal Injury Project Team making medical history

The Spinal Injury Project is part of the Clem Jones Centre for Neurobiology and Stem Cell Research and is directed by Professor James St John and Associate Professor Jenny Ekberg. Together they lead a team of internationally recognised researchers based in state-of-the-art laboratories at the Menzies Health Institute Queensland and the the Griffith Institute for Drug Discovery.

The treatment has also been co-designed with the spinal cord injury community to ensure that it meets their expectations and needs. The Spinal Cord Injury National Consumer Research Panel consisting of ten people from around Australia living with spinal cord injury regularly advises the team about the research direction and provides input into the therapy design.

The team has an impressive track record and have won two major awards: the National Health and Medical Research Council Marshall and Warren Innovation Award 2019; and the Research Australia Discovery Award 2020-2021.



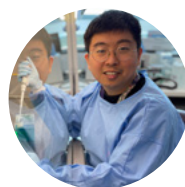
Prof James St John

Head of the Clem Jones Centre for Neurobiology and Stem Cell Research and project leader.



Associate Prof Jenny Ekberg

Associate Prof of Neurophysiology at Menzies Health Institute Qld and project leader.



Dr Mo Chen

Senior Research Fellow, Mo is a bioengineer and the inventor of the nerve bridge production technology.



Dr Ali Delbaz

Research Fellow. Ali is an expert in molecular and cellular biology.



Dr Ronak Reshamwala

Senior Research Fellow. Ronak is a medically trained doctor and world-renowned spinal surgeon.



Dr Mariyam Murtaza

Senior Research Fellow. Mariyam's expertise is in human cell production.



Dr Andrew Rayfield

Senior Research Fellow. Andrew is an expert in translational research and commercialisation.



Dr Brent McMonagle

PCSRF Scientific Director. Brent is a leading ENT surgeon and one of the clinical leads for the project.



Ms Genny Kroll-Rosen and Mr Jim Barrett

The associate investigators from Making Strides, the specialist rehabilitation service provider for the trial.



Prof Dianne Shanley

Clinical psychologist. Dianne will conduct and analyse the psychosocial assessments during the trial.



Ms Charmion Grant-Thompson

Physiotherapist and Research Fellow. Charmi oversees the rehabilitation and clinical trial components.



Ms Yasmin Arena-Foster

Research Assistant. Yasmin specialises in research translation and clinical trial planning.

Investment required

Together with our key partners over \$20 million has already been invested to get to this exciting stage. We now require further investment of \$8.5m to commence the clinical trial and to safeguard the continuity and success of the research.

The economic cost of spinal cord injury to the Australian economy has been quantified at a staggering \$3.7 billion per annum and a lifetime cost of \$74 billion for the 20,800 Australians with spinal cord injury. These costs are attributed to personal and health care, lost productivity and reduced wellbeing for patients, families and friends.

The \$8.5m investment required is a small percentage when compared to the ongoing economic costs of spinal cord injury. Without an effective treatment for spinal cord injury, the emotional and financial costs to individuals, their families and to our community are devastating and life-long.

The Spinal Injury Project team is now ready to commence the trial before the end of 2023, subject to the full investment target being confirmed.



This is our moment to make history and we need your help

The Cell Transplantation and Rehabilitation Human Clinical Trial is a truly inspirational endeavour. Through generous supporters like you, our funding partners, philanthropists, and our incredible fundraising community, we are already well on the way to reaching our \$8.5m target. We now need further investment to ensure the trial can commence in 2023.

You have the opportunity to play a part in medical history. This research will improve the quality of life for people suffering with paralysis and the success of this human clinical trial will result in a world-first treatment for thousands of Australians and millions of people across the world.

We are now urgently seeking philanthropic partners to support this ground-breaking trial.

We need the support of like-minded people who are inspired by the potential for this research, and we invite you to reach out and join us on this journey of discovery to recovery.

We value all contributions and would love to discuss how you can make an impact.

To find out more and to book a lab tour, please contact:

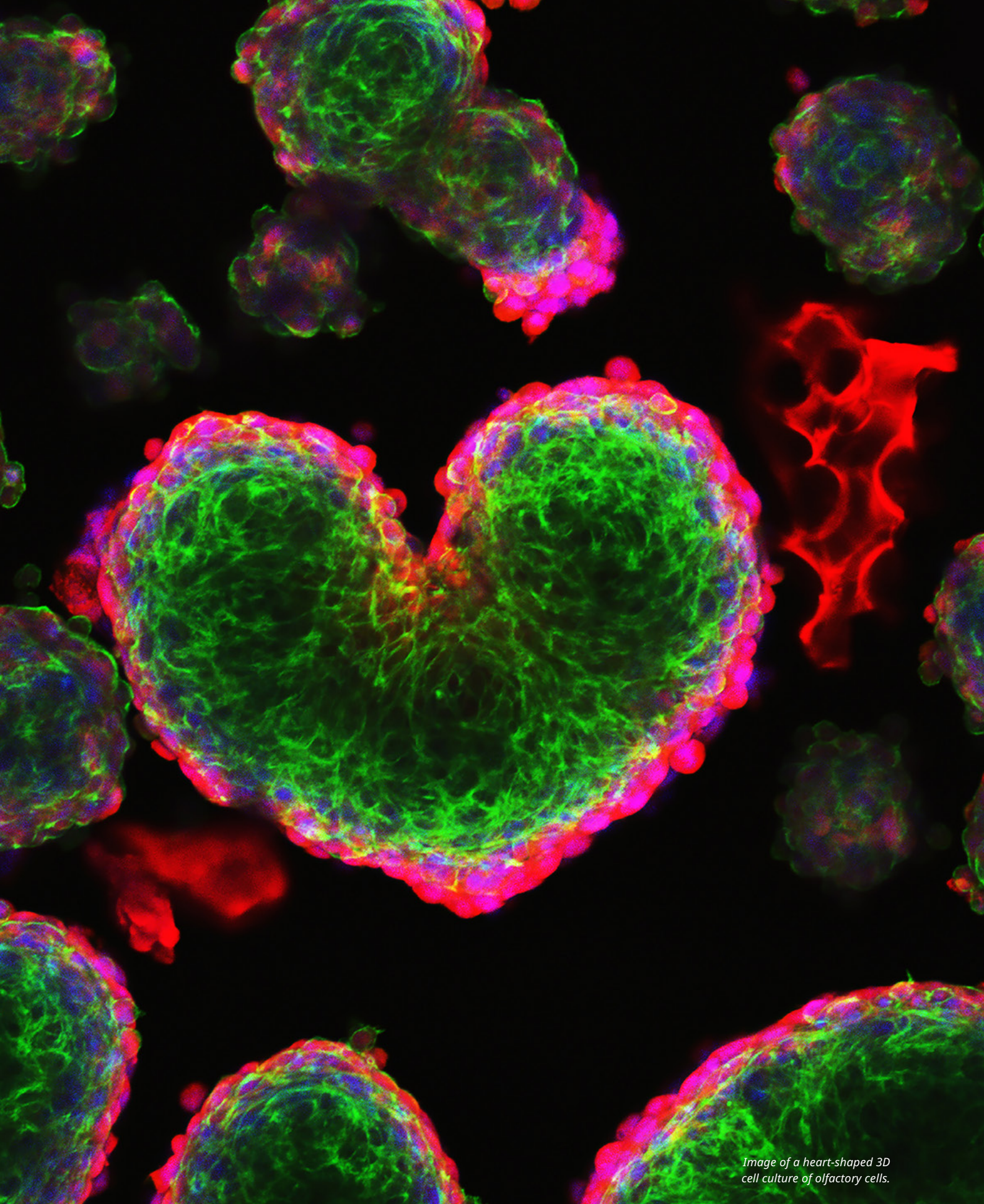
Mrs Jen Hutchings
Philanthropy Manager
Perry Cross Spinal Research Foundation

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*Image of a heart-shaped 3D
cell culture of olfactory cells.*



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