

# The Current

Bionics Institute Newsletter

SPRING 2024



**Celebrating 46 years**  
of groundbreaking research

New clinical trial for  
*rheumatoid arthritis*

Great ideas lead to  
**great innovations**



**Bionics  
Institute**

# Latest News

## Bionics Institute researchers recognised in top neuroscientist rankings

We are incredibly proud that Bionics Institute researchers Professor Kate Hoy and Associate Professor Andrew Wise have both been included in the 2024 Best Neuroscience Scientists in the World by Research.com. Professor Kate Hoy has developed a treatment program with the aim of improving brain function for people with Alzheimer's disease. Associate Professor Andrew Wise is working on a world-first drug treatment that aims to restore hearing loss using nanotechnology. Congratulations, Kate and Andrew!



## Engineering a solution for the torment of tinnitus

Senior Research Engineer Owen Burns and his team are working closely with lead researcher Dr Mehrnaz Shoushtarian to develop a new prototype to test tinnitus using functional near infrared spectroscopy (fNIRS). Supported by generous donations from Hearts and Minds Investments (as nominated by Cooper Investors), and the Lucas' Papaw Foundation, the team will produce five portable prototypes in 2024 for use in a multi-site clinical trial.



## Government grant received to accelerate our research

We are delighted to announce that Dr Sophie Payne and her team have been awarded a \$500,000 Victorian Medical Research Acceleration Fund (VMRAF) Grant to support a clinical trial of our vagus nerve stimulation device as a therapy for rheumatoid arthritis.

The grant will help launch a clinical trial in late 2024 of our vagus nerve device, which uses electricity to dampen the body's overactive immune response and prevent long-term damage

Rheumatoid arthritis is a chronic and debilitating autoimmune condition that affects over 20 million people worldwide, including almost 500,000 Australians.

Dr Sophie Payne says she hopes that the device will bring relief to those suffering from joint inflammation, pain and disability.

*Read all our  
latest news and  
updates here*



*Innovation  
for Life*



## A word from our CEO

Welcome to your Spring edition of *The Current*. I am excited to share our latest research updates and successes that continue to drive innovation at the Bionics Institute, all thanks to generous people like you.

In July, we had a historic morning at the Bionics Institute Celebration Event. I am incredibly grateful to everyone who joined us to celebrate 46 years since the first cochlear implant surgery, one of Australia's greatest medical breakthroughs, performed by Laureate Professor Graeme Clark AC. A special thank you to Her Excellency Professor the Honourable Margaret Gardner AC, Governor of Victoria, who kindly hosted the event at Government House.

We are extremely excited to announce that within just two years, Dr Sophie Payne and her expert team have progressed an idea to modify our novel vagus nerve stimulation device to a first-in-human clinical trial for rheumatoid arthritis, due to begin in late 2024.

Turning promising ideas and innovations into life-changing treatments takes many years of dedication, patience and hard work. Your kind generosity is driving significant advancements and transforming lives.

Leaving a gift in your Will to the Bionics Institute is one of the most powerful ways you can speed up the development of new treatments and help improve the health and quality of life for generations to come. You can find out more about leaving a gift in your Will by requesting an information pack. Together, we make a difference.

Best wishes,

**Robert Klupacs**  
Bionics Institute CEO

## From concept to clinical trial in just 2 years

### Our novel treatment for rheumatoid arthritis will begin a clinical trial in late 2024.

The treatment uses an electrical medical device to target the nervous system and trigger the body's natural anti-inflammatory response. It could help bring hope of relief to the significant number of people with rheumatoid arthritis who do not respond to drug therapy and suffer ongoing pain and disability.

Incredibly, lead researcher Dr Sophie Payne and her team have progressed the treatment, currently in trials for Crohn's disease, from the seed of an idea to clinical trial in just two years. This achievement was made possible with the kind generosity of Neville and Di Bertalli, two of the Bionics Institute's most long-standing supporters.

The promising results, developed with their generous contribution, have enabled us to leverage other funding and we are delighted to announce a successful grant from the Victorian Medical Research Acceleration Fund (VMRAF) to help our researchers move one step closer to creating a drug-free and pain-free future for those with rheumatoid arthritis.

This is one of several grants that have been made possible by Di and Neville's support of the Bionics Institute. For every dollar they have donated, we have been able to secure a further three dollars, multiplying their impact and leaving a legacy for generations to come.

***“Di and I have seen the world benefit from the many leaps forward in medical treatments over our lifetime, like the cochlear implant. We, and our family, are passionate about supporting medical research and inspiring the next generation of brilliant minds to transform lives.”***

– Neville Bertalli



# Celebrating 46 years of groundbreaking research

A celebration of our rich history in medical innovation was held on 2 July, hosted at Government House by Her Excellency Professor the Honourable Margaret Gardner AC, Governor of Victoria.

The event marked 46 years since the successful implantation of the first multi-channel cochlear implant. Invented and developed by Bionics Institute founder, Laureate Professor Graeme Clark AC at the University of Melbourne, the cochlear implant has given the joy of hearing to over 750,000 people worldwide.

***“It was a pleasure to host an event to celebrate the vision of the Bionics Institute and recognise the contributions of those who make its work possible.”***

– Her Excellency Professor the Honourable Margaret Gardner AC, Governor of Victoria

**We were proud to present the inaugural Bionics Institute Visionary and Catalyst Awards, kindly presented by Her Excellency Professor the Honourable Margaret Gardner AC, Governor of Victoria.**

**The Bionics Institute Visionary Award was presented to Laureate Professor Graeme Clark AC in recognition of his immense contribution to science and society.**

**The Bionics Institute Catalyst Award was presented to Neville and Di Bertalli for their outstanding commitment to supporting medical research.**





## A gift in your Will could be a catalyst for the next great breakthrough

After taking care of your loved ones, leaving a gift in your Will enables you to continue supporting the causes that were important to you during your lifetime and leave a legacy for the generations to come.

Often people feel that they do not have the means during their lifetime to help others as much as they would like to. Remembering the Bionics Institute in your Will is an impactful way to make a difference in people's lives, without affecting your self-sufficiency today.

**The future of medical research could start with you today!**

The cochlear implant not only changed the way hearing loss is treated forever, but also built the discipline of Biomedical Engineering and led to the creation of the Bionics Institute (then known as The Bionic Ear Institute) in 1986.

Since then, our researchers have continued to build on this knowledge and expertise to put the Bionics Institute and Australia at the forefront of medical device research. We have expanded into the development of devices and treatments for some of the world's most challenging conditions, including Crohn's disease, rheumatoid arthritis, epilepsy and Alzheimer's.

The celebration brought together many of our wonderful supporters that represent the community and dedication behind the continuous progress of Bionics Institute research. Progress that would not be possible without the caring contributions of our donors like you.

***“Innovative medical breakthroughs like the cochlear implant are only made possible by collaboration between researchers, engineers and healthcare professionals, with the vital support of board members, volunteers and caring supporters.”***

– Robert Klupacs, CEO

Learn more about leaving a lasting gift to help us make breakthrough discoveries in the years to come.

*Download our legacy pack*



# Great ideas lead to great innovations

Innovation lies at the heart of the Bionics Institute and our researchers are supported to explore innovative research ideas.

Early-stage 'seed' funding is crucial to enable researchers to investigate new ideas that could lead to groundbreaking treatments for patients. It provides the financial support needed to conduct preliminary research.

We have set up a Bionics Incubator Fund (BIF) to provide the seed funding our researchers need to gather essential data and refine their hypotheses. Without this vital support, many promising solutions might never get off the ground, delaying the development of life-saving treatments and innovations to improve patient outcomes.

Our rheumatoid arthritis device, which is about to go to clinical trial, started as a BIF project. And there are many other vital research projects being supported by early-stage funding, including:

## A drug-free approach to relieve chronic pain

Chronic pain affects a staggering 1 in 4 people worldwide. Opioids, commonly prescribed for pain conditions, give inconsistent and often inadequate relief of symptoms, and can lead to serious side-effects, addiction, and overdose.

Thanks to seed funding from The CASS Foundation, Associate Professor Rachael Richardson and her team have started developing a treatment that uses a combination of electricity and light to provide drug-free management of chronic pain. It works by selectively stimulating nerve activity to mask the pain and provide desperately needed relief.

The success of this research could revolutionise the way we interact with the nervous system repetition and help those suffering from chronic pain.

***“The CASS Foundation is delighted with the preliminary findings of the Bionics Institute’s research into a novel stimulation technique that aims to give unprecedented control over the transmission of pain signals to the brain.”***

- David Abraham AM  
Chair, The CASS Foundation

## A new electrical stimulation treatment for drug-resistant epilepsy

Epilepsy affects an estimated 150,000 Australians, with a third continuing to have seizures despite medication. Current treatments for epilepsy include drug therapy, surgery and vagus nerve stimulation at neck level – treatments which can cause unpleasant side effects and may not be suitable for all patients.

With positive preliminary findings, and thanks to significant early-stage funding from a generous foundation, lead researcher Dr Tomoko Hyakumura is now able to move forward with evaluating the effectiveness of abdominal vagus nerve stimulation to reduce the frequency and severity of seizures without the side effects caused by current treatments.

***“I’m grateful for the opportunity BIF gave me to work on an early-stage research project I’m passionate about, investigating a new electric nerve therapy for epilepsy. With all the resources available at the Bionics Institute, I feel very well supported and the research we do is of the highest quality.”***

- Dr Tomoko Hyakumura,  
Research Fellow, Bionics Institute

Bionics Institute researchers need your help to make their groundbreaking ideas a reality. Your donation towards the Bionics Incubator Fund today, could turn the seed of an idea into a new life-changing treatment in the future.

Front Image: Professor Graeme Clark AC, Margaret Clark, Di Bertalli, Neville Bertalli

Join our incredible community of supporters and help us develop life-changing treatments for future generations.

Please give this spring at  
[bionicsinstitute.org/donate](https://bionicsinstitute.org/donate)



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