Ambassador Sam McLarty joins Collingwood FC

Eighteen-year-old Sam McLarty is blazing a bionic trail as the first person with a cochlear implant to play AFL football. Born profoundly deaf, Sam was Collingwood’s top draft pick for 2017.

Sam’s parents received the diagnosis when he was nine-months-old after noticing their son wasn’t responding to loud noises. He was one of the youngest children in Victoria to receive a cochlear implant at fourteen-months-old.

Sam grew up an avid Geelong supporter idolising the Cats’ Harry Taylor and excelled at sport from a young age. A helmet protects the small processor behind Sam’s ear while playing footy, and his track record as a fierce competitor meant Collingwood officials had no concerns about his ability to play at the most elite level.

Sam’s mother Cynthia is a long-time supporter of the Bionics Institute and has volunteered her time as an Ambassador. After Sam’s diagnosis at nine-months-old, Cynthia and her husband Deane spent a huge amount of time and energy researching cochlear implants. At the time they worried and wondered if they were making the right decision.

“Sam caught up with other kids and was speaking normally by the age of four with the help of his cochlear implant,” said Cynthia.

“We tell other parents that we don’t regret it – it was the best thing for Sam. We are so grateful to the Bionics Institute for enabling Sam to talk and live a full, normal life.”
Dear Friends,

We were all excited to hear that Sam McLarty was drafted by Collingwood Football Club. Sam and his family have been long-time Ambassadors of the Institute and we look forward to following Sam on this new journey as the first AFL footballer with a cochlear implant. We wish Sam every success for the coming season.

We held a supporter event in November to celebrate some wonderful developments in our research. This event was a delightful afternoon in which we heard from leading researchers, as well as personal accounts from our Ambassadors including Dr Dianne Ashworth who gave a presentation about her journey with retinitis pigmentosa and her experience with Australia’s first prototype bionic eye.

In addition to the events held at the Institute, our researchers have been actively involved in giving presentations across Melbourne schools and clubs to promote our research for hearing, vision, epilepsy and Parkinson’s disease.

We are still seeking the ideal candidate to fit with our unique requirements for the newly created CEO position. In the interim it has been a pleasure to be at the leading-edge of research and it has been a delight to be more closely involved with the team in the lab.

I hope you enjoy reading this issue of *Bionic Connections*.

Kind regards,

Rob Shepherd
Bionics Institute Director

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**In the news**

**Profound deafness won’t hold back new Pie Sam McLarty**


As the newest player for the Collingwood Football Club, Sam McLarty will be an inspiration to many, but he didn’t set out to be a role model. He has lived a pretty normal life with the help of his cochlear implant. With an athletic build and standing 193cm tall, Sam is versatile enough to play in the ruck or forward.

![Sam McLarty (centre front)](image)

**Bionic Bodies**

*ABC RN, The Science Show, 18 February 2017*

The two-part program told remarkable stories of ground-breaking innovations in medical bionics, the people behind them and the lives they have changed.

Bionics Institute’s own Dr Matt Petoe talked about the Australian bionic eye and the next generation, wide-view bionic eye.

Matt was joined on the program by Dr Diane Ashworth, who suffers from retinitis pigmentosa and was the first person to be implanted with the prototype bionic eye in 2014.

![ABC reporter with Dianne Ashworth](image)
New brain imaging lab opens

Testing began last month in a new brain imaging laboratory at the Bionics Institute.

With this new facility, we will be able to determine how the hearing brain changes with deafness and adapts to restored hearing through a cochlear implant. This is the first laboratory of its type dedicated to hearing research in Australia.

The Bionics Institute has recently established a brain imaging laboratory that allows us to observe how the brain responds to sounds through the use of light sources and detectors incorporated into a head-cap. It allows us to identify which areas of the brain are most active and well connected when people are listening to, or watching, someone speak.

The Institute is excited about the clinical potential of our new laboratory for improving the benefits obtained from hearing devices in recipients of all ages. We intend to adapt this system for use in infants and children in the near future. We will then be able to investigate how infants’ brains are responding to their hearing device and collect the information needed to tailor it to their individual needs. This will maximise deaf children’s opportunities for normal language and hearing-brain development.

We sincerely thank everyone who has contributed to this lab and research, and gratefully acknowledge the following for their support of Professor Colette McKay and the early stages of her brain imaging research: Victorian Government’s veski Senior Innovation Fellowship, Lions International Hearing Research Fellowship, Jack Brockoff Foundation, and Eirene Lucas Foundation.

Delivering our message around Melbourne

Our enthusiastic researchers have been active, giving presentations across Melbourne in schools, clubs and corporate events to promote the cutting-edge research of the Institute.

One of our researchers, Ceara McGowan, recently spoke at the Probus Club of Frankston Heights delivering a message of hope for people with serious conditions such as deafness, blindness, and Parkinson’s disease. Ceara’s speech moved many in the 120 member audience with fascinating facts about new devices for these debilitating life-long conditions.

Ceara has also recently spoken at Essendon Grammar as part of the school’s involvement in Science Week. Ceara’s presentation was entitled ‘Science fiction, science fact’ and she described our bionic eye technology to the students. As the Institute’s senior histologist, she was also able to give insight into some of the important considerations when making bionic implants to ensure patient safety.

As we continue to develop new technologies for disorders of the ear, eye and nervous system, we rely on the support from the community which is vital for our researchers to move forward with their innovative work – creating new devices for physicians to use with their patients.

If you belong to a school or club in Melbourne and you would like to hear the moving and inspirational stories of how our research is transforming people’s lives, please call the Bionics Institute today (03 9667 7507) and book a speaker for your next meeting or event.
Epilepsy device, a new hope

Epilepsy is a common neurological disorder that affects approximately two percent of the population. Disruption in the brain’s normal patterns and rhythms of activity, leading to a state of heightened excitability, results in a seizure that can vary from brief ‘absences’ to convulsions and/or loss of consciousness.

Approximately 12,000 Australians are diagnosed with epilepsy each year. However, for some patients, diagnosis is not a straightforward process and, in six out of ten people, the exact cause is unknown. In some cases, an epileptic event can result in a blackout, but blackouts can also be due to heart irregularities or other causes. Definite diagnosis is sometimes difficult because these events can be infrequent, perhaps weeks or months apart.

A definite diagnosis of epilepsy requires recordings of brain activity by electroencephalography (EEG). However, EEG requires an extended hospital visit and relies on the information taken from the patient during this time. If the suspected epileptic events are infrequent, then diagnosis becomes difficult. Clinicians and patients alike would greatly benefit from a way to monitor brain activity over longer time periods.

To help our doctors better diagnose patients, the Bionics Institute is developing a small, portable device to detect epilepsy and monitor seizures as they occur, and over a long period of time.

For the past three years we have been developing a small, flexible implant that can be inserted under the scalp to detect and record seizure activity. The device was designed so it requires minimal surgery and risk, in much the same way as implantable monitors are currently used to diagnose heart abnormalities. Importantly, our prototype system is portable so a patient is not confined to a hospital.

Our new monitoring device has great potential to solve another problem faced by clinicians and patients - the ongoing management of drug therapies to effectively relieve seizures. Getting the drug regime right is sometimes a problematic and drawn-out process requiring many visits to the clinic.

Our pre-clinical research has successfully laid the groundwork for a future, small-scale clinical trial. Together with our clinical colleagues at St Vincent’s Hospital Melbourne we hope to start this clinical trial next year and we are actively seeking funds to make it a reality.

Researcher will bring new insights home

Bionics Institute’s Dr Thushara Perera and board member Professor James McCluskey were among Victoria’s top scientists to be honoured at the announcement of the 2016 Victoria Prize for Science and Innovation and the 2016 Victoria Fellowships.

The awards were presented in November by the Victorian Minister for Small Business, Innovation and Trade, Philip Dalidakis, in conjunction with veski (Victorian Endowment for Science Knowledge & Innovation).

Thushara was one of twelve early career researchers to receive a prestigious 2016 Victoria Fellowship. He will use the funds for a study mission to the University of Oxford, University of Cologne and University of Milan to assist his work developing implantable brain stimulators for people with Parkinson’s disease who have not responded to medication. Thushara has developed devices that measure tremor, balance, posture and gait in movement disorders, and is using these instruments to develop a next-generation deep brain stimulator that can automatically adapt and adjust stimulation according to the patient’s need.

Travelling overseas will enable him to observe clinical trials and learn how to precisely locate implanted brain electrodes from MRI and CT brain scans. He will also attend the world-leading Engineering in Medicine and Biology Society Conference in Korea and attend workshops on entrepreneurship and commercialisation. This knowledge will help Thushara develop a deep brain stimulator and monitoring tools for the global market.

Congratulations also to Bionics Institute board member and University of Melbourne researcher Professor James McCluskey, who was jointly awarded the 2016 Victoria Prize for Science and Innovation with Professor Jamie Rossjohn of Monash University. The pair were recognised for their extensive contribution to understanding the human immune system and its significance for research and clinical approaches to infection and immunity.
Paediatric Audiologist comes from afar for ‘Infant Hearing Lab’ testing

A warm welcome to new researcher Virginia Roncagliolo, who joins the Institute to assist in the research of the soon-to-open ‘Infant hearing lab’.

Virginia comes to us from Chile, South America, where she has extensive experience working with hearing impaired patients of all ages including very young children. Prior to joining the Institute Virginia was a lecturer at University of Valparaiso and led a team of Audiologists in Neonatal Hearing Screening.

For children who have hearing aids, or those who receive a cochlear implant, there is still a chance they will have poor speech understanding and delayed language development as they are unable to tell their audiologist whether their device is too loud or too soft. Virginia will begin testing the hearing of children in the newly developed Infant Hearing Lab in the coming months.

The ultimate goal for this research is to help each child reach their full potential by understanding why there is variability in language outcomes and then apply this knowledge to give each child the best possible access to hearing and language development.

“By understanding how the hearing brain in children works, we can identify the best settings for hearing devices for infants so they can access hearing and language development much sooner.”

“I am really looking forward to working on this world-first research. This research will change hearing outcomes for children all over the world.” Virginia said.

If you would like to support the research of this lab and help children access hearing and language sooner, contact 9667 7500 or visit our website www.bionicsinstitute.org.

We proudly acknowledge the generous donations from IKEA Richmond and Suzanne de Pelsenaire.

A tribute to our special supporters

Last year we said farewell to three of our very special, long time and passionate supporters, Gordon Baddeley, Marlene Marriott and Josie Sidoti.

The Institute pays tribute to each of these special supporters for all their efforts to raise the profile of the Institute through their networks, assist with much needed fundraising, and volunteering their time to take part in our hearing research so that many others will benefit from improved cochlear implants in the future.

Gordon Baddeley had been a proud Ambassador of the Institute for more than ten years, and volunteered his time to raise awareness and funding for the Institute on many occasions. He received the bionic ear as a result of deafness caused by his role of Submarine Detector in the Navy in World War II. He passed on the 15th September 2016.

Josie Sidoti spent many years contributing as an Ambassador and helped raise awareness of our work through many speaking events and fundraising activities.

Marlene Marriott came to the Institute as a research volunteer more than twelve years ago. She recently recounted the day she was ‘switched on’ most fondly.

“When I got home from the hospital the day I was ‘switched on’, I heard a strange high pitched sound coming from the kitchen. But when I went to the kitchen to investigate, there was nothing there, so I went to the living room. Again, the strange sound was not in there. Then I worked out the noise was actually coming from the window. The elusive noise was a tiny little bird chirping in a tree not far outside the window. It was the most wonderful sound,” Marlene said.
Supporter event welcomes many

Late last year, the Bionics Institute held a public event showcasing the latest discoveries in bionic ear research, and how our expertise with this technology is being used to treat other conditions such as blindness and epilepsy.

We had a fantastic afternoon celebrating our research for hearing, vision and epilepsy. We were fortunate to hear from some of the experts at the cutting edge of this research including Professor Rob Shepherd, Professor Mark Cook and Dr Matt Petoe.

We also had the pleasure of hearing from the first recipient of Australia’s prototype bionic eye, Dr Dianne Ashworth, who participated in the Bionic Eye trial between 2012-14. Dianne transported the audience into her world as we heard first hand her story of courage and life with retinitis pigmentosa, an inherited, degenerative eye disease that causes severe vision impairment and blindness.

We gain a great deal of support from our highly motivated supporters and Ambassadors who speak at events on our behalf to raise the profile of our research.

If you would like to come along to the next public event, please email fundraising@bionicsinstitute.org or call 03 9667 7507 to receive further information.

Celebrating World Hearing Day – March 3

On March 3rd we celebrated World Hearing Day, with the theme ‘Action for hearing loss: make a sound investment’.

The aim is to draw attention to the economic impact of hearing loss and cost effectiveness of interventions to address it.

Early identification and rehabilitation through hearing devices are among the strategies which can alleviate hearing loss and its consequences. World Hearing Day 2017 highlighted actions that can be undertaken by decision-makers to address hearing loss in the future.

Donor list

The Institute would like to thank the following individuals, organisations, trusts and foundations that have contributed over $200 since August 2016.

Colonial Foundation
The Eirene Lucas Foundation
The Garnett Passe and Rodney Williams Memorial Foundation
Ikea Richmond
Victorian Lions Foundation Inc
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Mr John Stanhope AM
Mrs Yvonne Sullivan
Mr Stephen Wargula

Be a part of the great advances happening in medical bionics right now

TAKING ACTION
Get involved by raising awareness about bionics research through your club, school or workplace or host an event to raise funds for bionics research.

DONATE
You can donate to a specific theme of research:
- Hearing
- Vision
- Neurobionics

or give to our general appeal via our website: www.bionicsinstitute.org

Our fundraisers and ambassadors are fundamental to supporting our research at the Bionics Institute. If you would like to get involved or share your story with us, contact us today.

For editorial enquiries or to receive our eNewsletter, please email PRTeam-Enquiries@bionicsinstitute.org or reception at (03) 9667 7500.

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