

EXHIBITION GUIDE

# bionic me

ADD TECH • DO MORE



DESIGNED AND PRODUCED BY

**scitech**

PERTH • AUSTRALIA



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## EXHIBITION OVERVIEW

Control a computer using the power of your mind, race against a Paralympian, and see how a bionic eye works in Bionic Me.

This exhibition explores the ingenious medical and industrial breakthroughs that have helped enhance the human experience.

Visitors to Bionic Me will be encouraged to think about the potential of technology through both hands-on and full-body experiences.

Test your own limits as you run, sense, and navigate to explore how technology can enhance your abilities and integrate with your body. Imagine your future: what choices will you make and how might they change your life?

Climb inside an exoskeleton and see what you can do with enhanced strength, fly a virtual jetpack, or explore aerodynamics in the wind tunnel. This exhibition is packed with full-body experiences, including interactive and problem-solving games focusing on technology that helps us to overcome our natural limits.

Experience the possibilities in Bionic Me!



## VISITOR APPEAL

Bionic Me has been developed to engage children aged between 5 and 12 years and their families, although the exhibition provides a broader appeal to fascinate and inform people of all ages.

### Visitors will:

- Understand their bodies and the various limitations placed on them.
- See how nature is a good place to find inspiration for enhancements.
- Experience how technology can enhance their experience of the world.
- Imagine how applying these technologies might change their lives and the world.
- Recognize that careers in STEM can be inspiring, fulfilling, and life (and world) changing.

### Key messages:

1. We can use technology to increase the potential of the human body.
2. Nature is a good place to find inspiration.
3. Studying science leads to inspiring careers.



# EXHIBITS



## Mind Control

Compete against a friend using a brain-computer interface to control a ball using the power of your mind.

Science links:  
Neuroscience, computational science



## Motion Control

Use a gesture interface to control a robot arm and move a ball. Learn about how this new method of interaction has applications in medicine, workplaces and recreation.

Science links:  
Computational science (computer vision)



## Voice Control

Use voice commands to interact with appliances in a model house. Discover how artificial intelligence can be taught to recognize human voices.

Science links: Computational linguistics



## Body Technology

Move a screen over a human body to interact with its systems. Investigate what you could augment in various areas of the body.

Science links: Human biology, bioengineering, medical science





## Lenses

Experiment with a number of different lenses and investigate their effect on what we can see. Learn how lenses can correct or improve people's vision and why animals with different eye features have various visual abilities.

Science links: Optics, biology, bioengineering



## What to Augment

Share your ideas on how you would like to augment your body.

Science links: Innovation, bioengineering



## Augmented surgeon

Try to place augmented body parts into the correct areas of the body as you learn how different technologies can be used in various parts of the body.

Science links: Human biology, bioengineering, medical science

## Exoskeleton

Climb into an exoskeleton and control an on-screen avatar to investigate what you could do with enhanced strength.

Science links: Engineering, bioengineering, biology



## UV camera

View your skin using a UV camera. Experiment with sunscreen and see how much sun damage you have. Discover how UV radiation can damage our skin and why we need to protect ourselves from it.

Science links: Biology, physics, chemistry, nanotechnology, imaging science



## Jet Pack

Put on a helmet and fly a virtual jetpack. How would you use a jetpack to help people?

Science links: Physics, chemistry, engineering





## Prosthetics

Use a sensor to control a prosthetic arm and explore how advances in technology are creating versatile, agile, personalized prosthetics with finer control than ever before.

Science links: Bioengineering, human biology



## Bionic eye

View the world through a bionic eye simulation and explore the potential to convert other types of electromagnetic radiation into visible light.

Science links: Optics, biology, bioengineering, electrical engineering



## Race against a Paralympian

Race against a Paralympian in this full-body exhibit as you learn how sports prosthetics are developed and how they may soon surpass the ability of natural limbs.

Science links: Exercise science, bioengineering, physiology



## Build your body

See what your body would look like with prosthetic limbs as you build yourself a new body using magnetic parts. Then take a photo with your new body and post to social media!



## Wind tunnel

Test different accessories in a wind tunnel to see how they feel and perform. Discover how biomechanics help us develop new technologies, how aerodynamics can help us move faster and how nature inspires nearly all engineering devices used to increase aerodynamics.

Science links: Physics, engineering, biology (biomimicry)





## Train your brain

Play a 'brain training' game and investigate the potential to improve your cognition.

Science links: Neuroscience, cognitive science, behavioral science, psychology



## Camouflage

Explore how technology can provide active camouflage and make you invisible. Learn how animals use a variety of means to achieve camouflage to hunt prey and evade predators..

Science links: Biology, biomimicry, optics



## Infrared camera

View your world through an infrared camera and large screen. Discover the benefits of infrared light including; night vision, tracking, imaging, astronomy, heating and meteorology.

Science links: Physics, imaging science



## Ethics Quiz

Consider ethical questions of body augmentation using a quiz controlled by your eyes' gaze. Explore questions such as; 'is the ideology of abled vs disabled people out-dated?' or 'how far is too far with human augmentation?'

Science links: Sociology, computational science (computer vision), philosophy of science



## Braille

Try to read a Braille message using your sense of touch and learn how innovative ideas can help to change lives.

Science links: Human biology, innovation







## Hearing test

Test your hearing range and discover how technology can enhance it. Learn of the technologies available to help people with their hearing if it's damaged or reduced. Learn about how animals can hear different frequencies than humans, as well as different applications such as ultrasound and sonar.

**Science links: Human biology, physics, bioengineering, medical science**



## Tunnel of darkness

Explore your environment without using sight. Can you make your way through the tunnel using your other senses? Visitors on the outside of the tunnel can view friends in the tunnel using night vision cameras.

**Science links: Biology, physics, imaging science**



## 3D printing

Feel how scientists are using 3D printing to communicate images via touch and how these innovative ideas are helping change lives.

**Science links: Engineering, design technology**



## Educational resources

Bionic Me is accompanied by a School and Visitor Guide to assist teachers and family groups visiting the exhibition.

The exhibition covers the following areas of science:

- Health Science
- Biology
- Engineering

Imagine will provide each venue with a sample program to share with visiting schools. Venues are free to use and modify this material to suit the curriculum in their area or the target audience, providing due acknowledgment is made of Scitech as the producer of the exhibition.

## Marketing

Bionic Me has been designed specifically for children between 5 and 12 years old although the subject material and exhibit content will have broad appeal for both younger and older audiences.

Imagine will provide the following marketing materials to help each venue promote the exhibition:

- Exhibition photos and videos
- Exhibition logos
- Examples of advertising and promotional artwork
- Example of a media release

Bionic Me will tour to other venues free of any specific sponsorship agreements, enabling host venues to link with a wide range of sponsors in the local market.

## Touring arrangements

Bionic Me consists of 23 interactive exhibits with accompanying built-in, durable graphic panels that outline instructions for the visitor and relate interesting science facts in everyday terms.

## Space and height

- Fits an exhibition space of approximately 400-600 square meters (4,300-6,500 square feet) in flexible configurations
- Minimum ceiling height requirement for the exhibition is 3 meters (10 feet), although 4 meters (13 feet) is optimal

- Minimum entry and exit points for installation is 2.7 x 2.7 meters (9 x 9 feet)
- The exhibition will travel in two 40-foot sea containers, inclusive of spare parts and equipment

## Power and air

- Exhibits are powered by a standard 120v/240v electricity supply and are designed to accept power from the ceiling or the floor
- Some exhibits require 24 hour power to prevent damage to the projectors
- A licensed electrician will need to be supplied by the host venue to assist with the exhibition installation
- The exhibition is completely self-contained

## Training and maintenance

The host venue's exhibition and visitor staff will be provided with a full briefing on exhibit operation and maintenance as part of the exhibition installation.

The exhibition does require some simple maintenance which needs to be carried out on a daily basis. A full list will be provided in the exhibition manual.

## Scitech & Imagine will provide:

- The exhibition as outlined in the contract
- An exhibition supervisor to coordinate the installation and dismantling of the exhibition
- Replacement parts through normal wear and tear
- Education and marketing material

## The host venue will provide:

- A team to assist the installation and dismantling of the exhibition
- Replacement exhibit consumables as required
- 24 hour physical and/or electronic security of the exhibition
- Any special requirements (scaffolding, forklifts, trolleys etc.) specified in the contract



## Contact details

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Information contained in this guide was correct at the time of publication.

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