# AUSTRALIAN 20 CYBERNETIC 22



Australian National University School of Cybernetics 22NOV-02DEC PUBLIC EXHIBITION + EVENT SERIES We acknowledge, celebrate and pay our respects to the Ngunnawal and Ngambri people of the Canberra region and to all First Nations Australians on whose traditional lands we meet and work, and whose cultures are among the oldest continuing cultures in human history.

> Cybernetics – "a science of control and communication in complex electronic machines like computers and the human nervous system."

Norbert Weiner's definition of Cybernetics published in Cybernetic Serendipity: the Computer and the Arts, 1968

# AUSTRALIAN CYBERNETIC A POINT THROUGH TIME

Australian Cybernetic: a point through time assembles a story about futures, about how we dream up the blueprints that shape us, and that propel us into ways of thinking and being. We follow a thread through time from the ground-breaking exhibition of 1968 called **Cybernetic Serendipity**, to the **Computers and Electronics in the Arts** program featured in **Australia '75: Festival of Creative Arts and Science**, through to this exhibition **Australian Cybernetic: a point through time** at the School of Cybernetics in 2022. Three moments that represent points of expanding the cybernetic imagination, moments when audiences have been invited to consider a future through and with machines that can sense and act within the world.

Australian Cybernetic includes over 100 Australian and international works of creative technology from the early 1960s to today. On display are some of the first examples of computer graphics and animations, early electronic music, and responsive artworks. The exhibition also re/surfaces Australia's links to cybernetic practice, highlighting the names and works of some of the Australians who collaborated in communities of engineers and artists for Australia '75.

Intermingled with the works from '68 and '75 are contemporary works from the School's inaugural residents and artistic collaborators, including Kate Crawford, Lynette Wallworth, Mark Thomson, and Aunty Ellen Trevorrow. Theirs is a collective imagination that draws upon a sense of the relationships between past, present and future, inviting us to think through the consequences of technology to the larger systems of which we are all a part.

Through a brilliant, messy, shape-shifting curation of works from '68, '75 and '22 we invite you to bear witness to a story of cybernetic wonder.

# CYBERNETIC SERENDIPITY

# **'68**

The year 1968 was a touchstone for cybernetics. It was a year on from the hippies at Haight Ashbury casting off any sense of their pasts or futures during the Summer of Love. Across the Atlantic, Jasia Reichardt was curating her first major exhibition at the Institute of Contemporary Arts in London.

Showcasing 325 works from Europe, North America and Japan, Reichardt offered a glimpse of a future in which computers were entangled with people and cultures, and through this she fashioned a blueprint for the future of computing that has since inspired generations.

At a point in time when computers were still considered sophisticated calculators, and were the cost of a small car, **Cybernetic Serendipity** laid out new possibilities for what computers could be. The exhibition featured music, imagery, poetry, and sculptures in new media. Each work was created by and with computers. These new forms asserted a future that would be made from plastic, copper and silicon, and would include the impossible-seeming abilities of machines to sense and act in the world. Through these works, Cybernetic Serendipity imagined a potential relationship between humans and machines that was interactive rather than inanimate.

The exhibition featured works from major engineering firms such as General Motors, Westinghouse, Boeing, US Air Force Research Laboratory and Bell Telephone Laboratories. It brought together artists such as Ulla Wiggen and Bridget Riley, composer John Cage, and other creatives such as Gordon Pask, and Nicholas Negroponte, who would later found the Media Lab at MIT. Among the flashing and whirring machines at **Cybernetic Serendipity** were works like the **forget-me-not computer** built in 1966 by Roland Emmett: a surrealist mechanical construction made from bamboo birds, doorknobs, and lampshades that constituted a number of 'miniature minds' that attempted to compile 'mass memories'.

Another work, **Return to Square** (a copy of which can be found permanently at the School of Cybernetics) debuted in this exhibition. It used the early IBM programming language – Fortran – to create an image of a square that slowly turns into the profile of a woman, and then returns to a square again. This iconic piece of early computer art was created by a Japanese collective of artists calling themselves the Computer Technique Group (CTG), and was printed on a Calcomp drum plotter at the now defunct IBM Scientific Data Centre in Tokyo.

Jaisa Reichardt's cybernetic playground filled 600 square metres of gallery space. The exhibition was curated so that works made with computers or by computers sat alongside one another, dismantling the classifications of humans as creative versus machines as productive, and put humans and the machines they build in closer, more intimate loops of interaction. The exhibition raised a set of questions about how we understand creativity, and about who or what we think of as having agency in authoring meaning, and in transforming the world we inhabit. In hinting at these questions, Reichardt drew focus to cybernetic systems of interaction and influence that humans and machines can form together. She invited the world to form broader ideas about our possible futures with and through technology.

# COMPUTERS & ELECTRONICS IN THE ARTS

**'**75

Cybernetic Serendipity has a life beyond that moment in London in 1968. Through individuals who travelled to experience the exhibition and took stories back home to places across the globe, the exhibition collided with other movements seeking to shape the future using technology.

In 1975, Cybernetic Serendipity was invoked in an Australian program called Computers and Electronics in the Arts as part of Canberra's Australia '75 Festival of Creative Arts and Sciences.

Australia '75 occurred during a period of widespread revision of Australian culture. Gough Whitlam was rapidly reforming policy and at the precipice of his sudden Dismissal. Conflicts in Cambodia and Vietnam were still reverberating across the region. Australia's national cultural institutions were still emerging. While the National Gallery had been announced in 1968, work on the building would not be complete until 1982. Jackson Pollock's **Blue Poles** was still being sheltered in a Fyshwick warehouse. And a national conversation was raging on Australian identity, focusing not only 'Who are we?', but 'What can we build? What can we become?'. Artistic Director Stefan Haag, through **Australia** '75, asserted that Australian identity could be distinguished through a celebration of the connections between Art and Science.

Within this festival, the **Computers and Electronics in the Arts** program brought together a community of engineers and artists who shared a similar motivation to the creators of **Cybernetic Serendipity**: to showcase creative technologies and invite a broader conversation about the future. Doug Richardson, curator of **Computers and Electronics in the Arts**, sought to reengage the public with the potentials of emerging technology, responding to scepticism and fear about the future of computing that had emerged in the public's perception by 1975. The program of '75 firmly asserted human creativity and agency in the frame alongside the increasing capabilities of computers.

Through their enthusiastic endeavours, this community of young Australian dancers, artists, composers and engineers threw themselves into collaborations, laying the groundwork for the next 50 years of creative technologies, especially in regards to digital music. Music composed with synthesisers was complemented by laser lighting, creating a prototype for music culture into the next decades. The contributors to **Computers and Electronics in the Arts** were not just presenting the potential of technologies in '75, they were actively building culture around these emerging technologies.

Beyond only theoretical propositions of how humanity may be shaped by our interactions with machines, **Computers and Electronics in the Arts** was a provocation and invitation to form communities of Australian makers and doers who would play and create, and through this shape a path for an Australian identity borne of an imagination of cybernetic possibilities.

# AUSTRALIAN CYBERNETIC

# **'**22

In 2022, our experiences with sensing and acting technologies are communal and quotidian. And yet we continue to imagine the possibility of more and more advanced technology, and continue to search for ways to reframe the potential of computers.

At the same time, we are increasingly attuned to the impact these systems have had on our world, how they have enabled great achievements as well as regrettable ones. We are starting to ask how might these systems be in the world, and also how **should** these systems be in the world. What would we create if only we could hold a clear sense of the ways that invention makes ripples through time?

Australian Cybernetic: a point through time is an exhibition presented by the School of Cybernetics at the Australian National University, showcasing contemporary works drawn from our communities and influences, alongside works from 1968 and 1975. Works feature and respond to artificial intelligence, virtual reality, and augmented reality, creating systems of music, image, machinery and storytelling that surface the often hidden connections between technologies and broader societies, cultures, communities, places and ecologies.

We have invited a range of contributions from Cybernetic Serendipity in 1968, from Electronics and the Arts that were part of Australia '75, as well as contemporary works. The contemporary works include contributions from our Cybernetic Imagination Residents (2022-2023) Kate Crawford, Lynette Wallworth and Mark Thomson. Among several works borrowed from Cybernetic Serendipity in 1968 for this exhibition is the interactive sculpture **Albert**: a robotic head created by John Billingsley. At the time of Cybernetic Serendipity, Albert was a cuttingedge example of responsive technology. Light sensors and a motor meant that Albert's gaze followed visitors at the exhibition. Albert has since been delighting audiences at the Exploratorium in San Francisco. We are fortunate that The Exploratorium has graciously loaned us Albert for this exhibition. In addition to the original Albert, John Billingsley has created a digital version of Albert for **Australian Cybernetic** in 2022 that uses a webcam to respond to visitors who walk by.

From Electronics and the Arts we feature Philippa Cullen, an Australian dancer and choreographer. The exhibition includes a tryptich of photographs taken by John Hanson of Cullen and her dancers performing in '75. Cullen's biographer, Evelyn Juers, suggests that around 1975 Cullen was investigating cybernetics. reading books such as Cybernetics: Or Control and Communication in the Animal and the Machine by Norbert Weiner (1948), Cybernetics Simplified by Arthur Porter (1969) and the Cybernetic Studio International Catalogue (1968). For the performance in '75, Cullen – inspired by the cybernetic idea of feedback loops - built pressure-sensitive floors with collaborators Arthur Spring, Greg Schiemer and Phil Connor. The floors used embedded light sensors that would oscillate the pitch of the music in response to the movements of a dancer. In '75 the dance, and pressure floors, had the addition of real-time video footage of the dancing. Cullen's dance group, Steve Dunstan's unique music, John Hansen's video processing, and technology created by Chris Ellyard and Ian Mcleod from ANU Engineering and Physics came together to create multiple interacting systems of movement shaped by feedback between humans and machines. At the time of Australia '75, works like Cullen's spoke to Australian ingenuity, a rejection of rules that divided the arts and sciences, and a glimpse of an Australian future that was striving, raucous, and infused with creative energy.



From our residents, we include some of their incredible previous works in **Australian Cybernetic**. **The Anatomy of an AI System** (2018) by Kate Crawford and Vladan Joler is a large-scale map and long-form essay investigating the human labour, data, and planetary resources required to build and operate an Amazon Echo. The exploded view diagram combines and visualises three central, extractive processes that are required to run a large-scale artificial intelligence system: material resources, human labour, and data.

Lynette Wallworth presents **Collisions** (2016): the Emmy-award winning virtual reality film that invites audiences on a journey to the lands of the Martu in the remote Western Australian desert. Collisions shares Martu Elder, Nyarri Nyarri Morgan's story of nuclear bomb testing colliding with one of the oldest cultures in the world.

Mark Thomson's piece – **The Random Excuse Generator** (refurbished in 2022) – is a permanent installation at the School of Cybernetics. Mark's Random Excuse Generator is a speculative machine that prompts reflection on the myths and narratives surrounding technology – what we imagine it is for, and how its histories are constructed. It represents a whimsical take on "thinking" machines that speaks to how our machines shape us, just as we shape them.

**System of a Sound** (2022) is a work resulting from collaboration between the School of Cybernetics, UNSW and Uncanny Valley. In this work, AI translates real-time data inputs into language, represented on screen as lyrics, poems, and haikus. This language is matched to a database of human-tagged music samples, including samples of music by William Barton, Peter Zinovieff and others from the Cybernetic Serendipity Music album (created for the Cybernetic Serendipity exhibition in 1968), and the system uses algorithms to create a music stream.

Pondi (2022) is a work by Aunty Ellen Trevorrow, Jelina Haines, Bruce Trevorrow, and the Ngarrindjeri family members who collected the rushes used to weave the piece. Aunty Ellen says, 'Nga:tji is our totem, a very important part of our life. It's identifying the group you're with. Mine is Pondi, the Murray Cod... Most importantly with our Nga:tji, you've got to look after them, and that's caring for our ruwi, our country, for everything. If we don't look after our waterways, what's going to happen? Think of what's happened to our Pondi.' Pondi reminds us that ways of steering systems to support the flourishing of the world that we are a part of has roots in deep, deep pasts, as well as our presents and futures.

We are also featuring works from students from the Master of Applied Cybernetics from 2019 to now. Since the Master of Applied Cybernetics was established at the Australian National University, students have been making creative technologies as a way to reflect on and rethink practices around how we build, implement and decommission data-driven technologies. Each cohort of students has brought a novel blend of disciplines, backgrounds and experiences to the program, and their collective works represent the creative potential that comes from making space for diversity.

The hope of **Australian Cybernetic** is created through a glimpse of new possibilities. Possibilities that respond to this moment. Possibilities that resonate with the wonder that has inspired us to imagine new worlds. And, possibilities that hold within them a sense of grace, which helps us to acknowledge and appreciate the larger worlds we are part of, and our connection to deep time, ecology, culture, and the vast, diverse communities that we belong to.



Australian Cybernetic has two intents: to trace back through points in time which have expanded the cybernetic imagination, and to ask how we may build upon these touchstones from our vantage, at the Australian National University in Canberra, in 2022. As we launch the School of Cybernetics, and imagine what an Australian Cybernetic could be, we are also aware that the future is being created every day. That future is being created by YOU, the group of people who today come together on the lands of the Ngunnuwal and Ngambri people to shape the tools, practices, communities and ideas that we hope will help us to navigate and steer complex systems of people, environments and technology with purpose and grace.

# PROGRAM WED 30 NOV Register for events at cybernetics anu-edu au/launch

Register for events at cybernetics.anu.edu.au/launch								LEVEL 3
						LEVEL 2		FOYER & KITCHEN
	LEVEL 1					KITCHEN	INNOVATION SPACE	
TIME	FOYER		TEACHING LAB 1.36	MACROLAB	THEATRE ROOM			
	Guided Tours							
9.00							How can data	
9.30				Dancing with Drones			influence social	
9.45				WORKSHOP   SESSION 1			outcomes:	
10.00				9.30-10.30			DISCUSSION	
10.15						Morning Tea	9.30-10.30	
10.30	10.35-		Ngarrindjeri Weaving			10.15-11.15		
10.45	11:00		with Cultural Weaver,		Taking Technology			Multisensory
11.00			Aunty Ellen Hevorrow		to Scale			Cybernetics: Redies Machines
11.15			WORKSHOP   SESSION 1		WORKSHOP			and Nature in
11.30			10.30-12.00		10.45–12.00			Dialogue
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15.00				14.30-15.30	14.30–15.45			
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15.30	15:35 -		14.30-16.00			Afternoon Tea		
15.45	16:00	15:50 -				15.30-16:30		
16.00	16:05 -	16:15					Animal +	
16.15	16:30						Machine = ?	
16.30							A LIVE PODCAST	
16.45							16:00-18:30	
17.00	On WED 30 NOV, the School of Cybernetics is hosting a						10.00-10.00	
17.15	full day of exhibition tours, cybernetic panel discussions,							
17.30	interactive experiences, networking an			d collaboration				
17.45		nities as p	Sant of the taunch cele					
18.00								
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18.45	19:00							



# **BIRCH BUILDING TOURS**

22 NOV - 02 DEC | VARIOUS TIMES BOOK ONLINE AT CYBERNETICS.ANU.EDU.AU/LAUNCH

The ANU Birch Building, home of the School of Cybernetics, is a heritage-listed building whose renovation received multiple awards, celebrating its preservation, adaptation and forward-thinking sustainability practice at the 2022 ACT Architecture Awards.

Birch also houses the exhibition Australian Cybernetic: a point through time, a highlight of the official launch of the School of Cybernetics in Canberra on 22 NOV – 02 DEC.

The exhibition features contemporary works by the School's artists-in-residence and collaborators, and significant works from the historic exhibitions **Cybernetic Serendipity** (London, 1968) and **Australia** '**75** (Canberra, 1975). These two pivotal cybernetic exhibitions featured digital music, light, poetry, and sculpture – all created with and through computers – to start new public conversations and imagine new futures.

Join one of the many guided tours on offer that will take you through the building's unique heritage features that form part of our rich ANU history: from a historic water fountain to the iconic central atrium staircase and the building's distinctive precast exterior facade. Experience early and contemporary electronic music, computer graphics and animations that are featured in the exhibition.



# DISRUPTING DISADVANTAGE WITH DATA

WED 30 NOV | 9.30AM - 10.30AM

Attitudes about whether our data-driven lives are positive or negative vary according to where you stand. For a variety of reasons, community trust in data use is low. However, negative visions of data-driven futures can have a detrimental impact on how we can make better use of data - to inform policies, program design and evaluation, and create optimal social outcomes.

So what should a data-driven future look like for Australia? Whether you manage data in policy, government, health, education, defence or community settings, you'll know that simply gathering data and running it through sophisticated models is not enough -we need to see data as just one part of a complex system. But equally acknowledging the complexity is not enough. How can we take more purposeful data-driven action?

Supported by the Paul Ramsay Foundation, the ANU School of Cybernetics is working on these questions. Come along to hear more about our work, share your own experiences of complex data governance and contribute to the discussion.



# DANCING WITH DRONES

WED 30 NOV | 9.30AM - 10.30AM | 2.30PM - 3.30PM

Join the ANU School of Cybernetics and the Australasian Dance Collective's Artistic Director Amy Hollingsworth for an interactive session about our joint project, Arts and Agents – a supplementary research element to the Collective's ambitious new work, Lucie in the Sky.

With Lucie, art and technology come together in a world-first project in which drones perform on stage with dancers, choreographed using human movement patterns to emulate emotions and personalities. The work invites the audience into a world where humanity and technology share vulnerabilities, hopes, and fears.

Through several interactive stations, we will explore how drones in Zurich and dancers in Brisbane come together to create Lucie and how the project provides useful models for thinking through and designing future relationships between people and collaborative robots who will work together intimately – in close physical proximity – to complete tasks in ways that are legible or understandable to those around them.



#### NGARRINDJERI WEAVING WORKSHOP WITH MASTER WEAVER, AUNTY ELLEN TREVORROW

WED 30 NOV | 10:30AM - 12:15PM | 2:30PM - 4:00PM

This workshop, with Aunty Ellen Trevorrow is an invitation to join the conversation; learn the art of weaving from a senior, skilled, creative cultural weaver; breathe in the aroma of the freshwater rushes, Cyperus gymnocaulos, collected by her Ngarrindjeri family on her ruwi (country) in the Lower River Murray Lakes and Coorong region of South Australia; learn how rushes are harvested and prepared; hear stories of Ngarrindjeri nga:tji (totems) and the pioneering heroes of the Kaldowinyeri (Creative Era).

The workshop is suitable for beginners to advanced. With Aunty Ellen Trevorrow and her collaborator, Dr Jelina Haines, you will learn how to start your work, secure the stitches, add more materials to increase the size or change the shape, taper off, and close the weaving stitch.

From there on, it's over to you. Share stories, use your hands, make connections, physical and cultural. Here, in the School of Cybernetics, we have been exploring a different way of thinking about systems and networks.



## MULTISENSORY CYBERNETICS: BODIES, MACHINES, AND NATURE IN DIALOGUE

WED 30 NOV | 10.45AM - 12.30PM

Immerse yourself in five playful art installations, highlighting our relationship with interactive technology and the natural environment to ignite the senses and inspire visions about the futures that we can co-create.

In this session, artists featured in the exhibition Australian Cybernetic: a point through time will guide visitors to engage in the experiences, explain the creative process, and welcome questions.

#### RANDOM EXCUSE GENERATOR

Spin the dials, push the levers, flip the switches and pedal away... This interactive installation, referencing the early days of cybernetics, prompts reflection upon the myths and narratives surrounding technology and its past, current and future impact on our lives.

#### ARTISTS

MARK THOMPSON, SPECULATIVE HISTORIES LABORATORY, INSTITUTE OF BACKYARD STUDIES

#### PANIC: PLAYGROUND AI NETWORK FOR INTERACTIVE CREATIVITY

This interactive work explores how different ways of connecting "Creative AI" models up to one another can give rise to different outputs, emergent behaviours, recurring patterns, and degenerate or edge cases. But just because we can put our text/audio/images into these models and have them provide new text/audio/images in return, does it mean that we should?

#### ARTISTS

BEN SWIFT + ADRIAN SCHMIDT ANU SCHOOL OF CYBERNETICS

SYSTEM OF A SOUND

A generative AI, audio-visual-tactile experience connecting visitors to the pulsating rhythms of the Birch building as a living system.

#### ARTISTS

JUSTIN SHAVE, CHARLTON HILL + CAROLINE PEGRAM, DR BRENDAN WRIGHT, UNCANNY VALLEY

DR JOSH ANDRES + ADRIAN SCHMIDT, ANU SCHOOL OF CYBERNETICS RODOLFO OCAMPO + DR OLIVER BOWN, UNSW

#### HYDRALOOPS: EXPERIMENTS IN ETHICO-AESTHETICS

A collaborative material investigation into the interconnecting systems of the Murray Darling Basin. Interplays between organic and digital elements reference the relationships between the human and non-human in such waterscapes.

#### ARTISTS

ANU SCHOOL OF ARTS & DESIGN EMILY APRIL O'NEILL, CLEMENTINE BELLE MCINTOSH + BRIDGET BASKERVILLE

#### TERPSICHORA PRESSURE-SENSITIVE FLOORS

The terpsichora pressure-sensitive floors (The Floors) are a set of wooden platforms with sensors which respond to movement and pressure, facilitating music-making via whole-body movement. The Floors are primarily used for performance of composed and improvised electronic music. They are made as part-replicas of Vernus floors, originally designed for the Australian pioneering dancer Philippa Cullen (1972).

ARTISTS DR IRAN SANADZADEH, MONASH UNIVERSITY



# TAKING TECHNOLOGY TO SCALE

WED 30 NOV | 10.45AM - 12PM

Explore the link between the history and future of building complex technological systems.

"Knowing the history of a technology, or the ideas it embodies, can provide better questions, reveal potential pitfalls and lessons already learned, and open a window onto the lives of those who learned them," our Director Genevieve Bell writes for MIT Tech Review.

At the School of Cybernetics, we believe that such histories help inform our understanding of present versions of those systems, as well as provide critical frameworks within which to explore the present and future systems.



# AI STORIES: A CYBERNETIC TASTER

WED 30 NOV | 2.30PM - 3.45PM

Asking questions that help develop a more nuanced and diverse perspective for understanding AI systems.

The stories we hear every day about Artificial Intelligence (AI) can influence the way we think about the implementation, use, and regulation of AI systems.

In this workshop, you will construct questions that help you extract useful information from an AI story, and practice applying these questions to news, advertisements, fictional, and historical stories about AI.

This workshop provides new approaches to asking questions that help develop a more nuanced and diverse perspective for understanding AI systems.



## ANIMAL + MACHINE = ?

WED 30 NOV | 4PM - 6.30PM

Join a conversation between cultural anthropologist and technologist Professor Genevieve Bell and ABC Science journalist Natasha Mitchell of ABC Radio National's Science Friction.

You'll also hear from researchers and students from the School of Cybernetics.

#### DISTINGUISHED PROFESSOR GENEVIEVE BELL

#### Distinguished Professor Genevieve Bell AO FTSE FAHA is a renowned anthropologist, technologist, and futurist. Genevieve completed her PhD in cultural anthropology at Stanford University in 1998 and is best known for her work at the intersection of cultural practice and technology development.

She is currently the Director of the School of Cybernetics and Florence Violet McKenzie Chair at the Australian National University (ANU) and a Vice President and Senior Fellow in Intel Labs at Intel Corporation.

Genevieve joined the ANU in 2017 after spending 18 years in Silicon Valley guiding Intel's product development and social science and user experience research capabilities. Genevieve was appointed the inaugural Director of the 3A Institute, co-founded by the ANU and CSIRO's Data61. The Institute's mission is to establish a new branch of engineering to responsibly and sustainably scale AI-enabled cyber-physical systems. In 2021, she was appointed Director of the new School of Cybernetics at the ANU. which is focused on building capacity in Systems and Design.

#### NATASHA MITCHELL

Natasha Mitchell is a multi-awardwinning science journalist, host, audio producer and podcaster. She is the presenter and producer of the weekly culture and science show, Science Friction (winner of Best Science and Medicine Podcast at the 2019 Australian Podcast Awards).

She hosted the flagship daily social affairs program Life Matters on ABC Radio National for 4 years and founded the internationally acclaimed program and podcast All in the Mind which she hosted and produced for a decade. Natasha served as vice president of the World Federation of Science Journalists, was recipient of the prestigious MIT Knight Journalism Fellowship, the New York Radio Festivals' Grand Prize and four Gold World Medals, amongst other awards.

She was co-editor of the 2013 Best Australian Science Writing anthology. She has an engineering degree from Monash University, and a postgraduate diploma in science communication from the Australian National University. She regularly facilitates public events and dialogues around Australia, including a series of four dialogues with the Dalai Lama and leading scientists.

# THANKS & ACKNOWLEDGEMENTS

This exhibition was imagined by Genevieve Bell and Andrew Meares, led by the curatorial team of Andrew Meares, Caroline Pegram and Amy McLennan, and supported by the School of Cybernetics.

We wish to express our gratitude to curators Jasia Reichardt (Cybernetic Serendipity, 1968) and Doug Richardson (Computers and Electronics in the Arts, 1975).

**Australian Cybernetic** was made possible with the support and generosity of the following individuals and organisations.

#### ORGANISATIONS

## INDIVIDUALS

Art Transportation Australia AT&T Australian Broadcasting Corporation The Australian National University Boeing, USA Canberra Museum & Gallery Computer History Museum, California Computer Technique Group, Japan The Exploratorium. San Francisco GV Art London IBM, New York City Melbourne Electronic Sound Studio Melbourne University Baillieu Library Morris & Helen Belkin Collection, University of British Columbia National Archives of Australia National Film & Sound Archive of Australia National Gallery of Australia Nokia Bell Labs, New Jersey **Ontario Science Centre** Powerhouse Museum of Applied Arts & Sciences **Ouestacon** Rhode Island School of Design RMIT Science Gallery Melbourne University State Library of South Australia Sydney University, Chau Chak Wing Museum Time Out. UK Uncanny Valley Music University of New South Wales UOVO art transport, San Francisco Vancouver Art Gallerv Victoria & Albert Museum, London The Vinyl Factory, London Warner Music Group Zinovieff Family Estate

Pita Arreola **Kirstin Bach** William Barton John Billingsley **Rosalind Billingslev** Tilly Boylen David C. Brock Kate Crawford Robert Devčić Harvey Dillion Douglas Dodds Ed Eckert Annie Flodin **Sharon Frost** Tony Furse **Belinda Haag** John Hansen Harvey Holmes Edward Ihnatowicz Estate **Richard Ihnatowicz Stephen Jones** Charles Martin Bob & Brenda McLennan A. Michael Noll Kazufumi Oizumi Janet Petitpas Pedro Proenca Doug Richardson Adam Robbins Iran Sanadzadeh **Greg Schiemer** Joseph Stanisaus Ostoja-Kotkowski Estate Jasia Reichardt Mark Thomson Alex Zivanovic

"Cybernetics has been an intellectual wellspring for the twentieth century. Scratch the surface and somewhere there will be a link to Cybernetics. It was more than just an approach to the future, it was also inspiration for a multiplicity of different futures, and a toolkit to get you there."

Distinguished Professor Genevieve Bell in The Sir Robert Garran Oration titled 'After the pandemic: Cybernetic systems and an approach to the future', 2021







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