

DR CATHERINE BALL

SCIENTIFIC FUTURIST, TECH INFLUENCER, AUTHOR, CHAMPION
OF DIVERSITY, DRONE EXPERT, ASSOCIATE PROFESSOR.

**“The Future is here,
say what You want.”**

Dr Cath likes to demystify emerging
technology and empower people to
make a change.



Manifesto

As a young professional I looked to the stars, wondering why stars aren't as bright when looked at through a glass ceiling. But watching has never been my style. I'm here to do.

I've seen that when you step outside you'll discover nothing but boundless sky. I found a world of incredible women and men that had built the foundations to go anywhere. And I found my skills as a scientist are a perfect toolbox to build the future I want.

I believe the future flies. From a drone's eye view I see endless potential every day. The future is interconnected. The future is powered by purpose. The future is an incredible place.

But a drone's eye view showed me too many young women gazing up through their own ceilings. Too many bright sparks dimmed by corporate obstacles. Too many incredible leaders just needing a boost to take off.

**“SO I’M HERE TO HELP
YOU BUILD YOUR
FUTURE. TO HELP YOU
DISCOVER THE TOOLS
TO TAKE FLIGHT”**

To tell you what's on the laboratory table – years before it makes it to television. To provide a launchpad and a workshop to make it happen.

Some futurists review research and report on it. Other futurists look to the future and dream.

I look to the future and roll up my sleeves.

Let's get to work.

**Dr Catherine Ball,
The Scientific Futurist.**

Dr Cath's Story

One of my earliest memories is from the famine in Ethiopia in the 1980s. My mum remembers me asking endless questions about how we could let something like that happen. Mum didn't have all the answers. I can revisit that memory by watching the news article that was on the BBC over 30 years ago today on YouTube.

"Humans can do terrible things"

I also remember the Live Aid concerts, and the performances on the telly, chatter on the radio, and endless music sessions delivered by cassette tape. People donating, rock stars getting angry, children asking unending questions about 'why' these things happen. Even with events today we still find people fighting against the dark.

"Humans can do extraordinarily good things"

Looking to the future now, with my two children, I wonder what their 'Ethiopian Famine' moment will be. Bushfires? Floods? The Bee Crisis? Climate Change? Killer Robots? And I also wonder what can be done right now to stop those terrible moments from happening. Where and how and when can we make the choice to do extraordinarily good things?

Industry 5.0 (the next (5th) industrial revolution) should tip the invisible hands of economics towards a purpose-driven economy, and let it be a natural transition via investors, subsidies, government policy, and

media campaigns. But Industry 5.0 won't be able to reach its full potential unless we all care enough to act accordingly.

Australia has the capability to become a lighthouse for #techforgood and other purpose-for-profit business models.

"THE FUTURE OF WORK IS ALREADY HERE, IT IS JUST NOT DISTRIBUTED THE SAME WAY ACROSS DIFFERENT SOCIO- ECONOMIC, GENDER, NOR GEOGRAPHICAL LOCATIONS"

I started getting into entrepreneurship because I had identified a number of gaps between technical capability and tangible action. We have technologies that can be applied to do some amazingly good work, but there are management, insurance, business-culture, and other human reasons why these changes are not making it to business as usual in a traditional economic model. The start-up ecosystem is fundamental to creating and

curating innovation at low risk to traditional, large business.

A good friend of mine survived a terrible terrorist act. When asked what advice people should be given when watching such horror unfold she said to me "look for the people helping". And the same can be said for the Science, Technology, Engineering, and Mathematics (STEM) community: There are always people investigating new ways of doing things, trying to help, working on a better way. From cancer drugs to ethical artificial intelligence, from methods of clean up for ocean plastics to using drones to monitor endangered species. If we can focus on the good that people are doing and share it across our networks then we amplify the voices of the excellent people doing extraordinarily good things.

Interesting opportunities are emerging from the digital technology space that will help people feel like they're actually making a difference, this should encourage others to build purpose into their business models, whilst satisfying shareholders

"My works are a long love letter to my sons. After all, the future is theirs"



Dr Cath's Bio

Associate Professor, Dr Catherine Ball is a scientific futurist, speaker, advisor, author, founder, executive producer, executive director, company and director working across global projects where emerging technologies meet humanitarian, education and environmental needs. Catherine also likes to create businesses and champion movements, collaborate with peers, and advise game-changers.

A sought-after voice across the start-up, futurist and tech world, Catherine works globally across a wide range of projects from creating documentaries and world leading conferences and events, to advising on the use of novel approaches (e.g. drones) across environmental and humanitarian projects. Catherine is a proponent of community engagement with STEM (Science, Technology, Engineering, and Mathematics), and likes to demystify emerging tech.

Having been called a 'social architect', Catherine likes to connect people from different backgrounds across common themes. A champion of diversity and inclusion, Catherine believes we need points of difference to truly innovate and curate the changes we want to see in the world. Working to protect the natural environment and empowering all members of society through mutual education are core aspects of the projects Catherine chooses to spend her time and energy on.

Catherine continues to support Australia as being the world leader in the advancement of ethically driven technological applications. Industry 5.0 is emerging; with society and

community at the heart of how we operate and curate emerging trends and capabilities.

Catherine is the only Australian on the International Advisory Board of the Schmidt Ocean Institute, which follows her work as a judge on the Ocean Discovery XPrize. A proud #SheFlies ambassador for Girl Geek Academy, and a mentor and advisor to the CEO of Women Who Drone, and a regular mentor to many rising stars across the STEM fields in Australia and abroad, Catherine believes in actively paying it forward.

An Associate Professor at the Australian National University and Honorary Associate Professor at the 3AI Institute; Catherine is leading national conversations around technology and its place in the current and future challenges in Australia and the Asia-Pacific region.

Catherine's latest business ventures include the internationally renowned World of Drones and Robotics Congress, established in Brisbane in 2017 and the free community resources of World of Drones Education, established in 2018.

Catherine is a board director for Aviation Australia; and is on the international advisory board for the Ocean Impact Org, a not-for-profit ecosystem for businesses working towards a healthier ocean.

Catherine holds a BSc Honours (Environmental Protection) and a PhD (Spatial Ecology, Descriptive and Predictive Statistics) from the University of Newcastle-upon-Tyne in the United Kingdom. Catherine lives in Queensland with her husband and two sons.

Awards & Honours

2020 – Lord Mayor’s Business Awards - Outstanding Micro Business Winner

2020 – Analytics Insight World’s 50 Most Renowned Women in Robotics Award

2018 – Drone World UAV Congress 2018: Global UAV Award

2017 – AFR’s BOSS Magazine True Leaders Game Changers

2017 – Women in Leadership Awards – Finalist Innovation Category

2016 – Financial Review & Westpac 100 Woman of Influence

2016 – Top 25 Women in Robotics List

2016 – Courier Mail QBM Magazine: 25 Influential Movers and Shakers of Queensland

2015 – AFR’s BOSS Magazine Young Executives of the Year Winner

2015 – National Telstra Business Woman of the Year, Corporate and Private Award

2015 – Queensland Telstra Business Women’s Awards Winner

2015 – Queensland Telstra Business Woman of the Year, Queensland Corporate and Private Awards Winner.

2015 – Innovator of Influence at Innovation Week

2015 – Courier Mail Q Magazine: Queensland 50 Best and Brightest



Topics

Business

- Industry 5.0
- The New Director
- Sustainability
- Future of Work

Innovation

- Creativity
- Future Technology
- Science & Engineering
- Robotics
- Cyber Security
- Artificial Intelligence
- Drones & Robotics

Motivation

- Goal Kicking
- Resilience
- Recovery from Failure

Politics & Advocacy

- Environment & Climate Change
- Communication & New Media
- STEM economics



Talking Points

‘Every day is a school day’: The future of education and the age of the never graduating student.

Micro-learning, non-accredited training, virtual classrooms, immersive avatar experiences, gamified learning, haptic suits, virtual reality, mixed reality, augmented reality, and app-based teacher tracking... what ever happened to sitting and making notes in a classroom with a text book?

Technology is the new teacher, and the universities never want you to graduate. The phrase “Every Day is a School Day” is becoming literal as we constantly imbibe from new ways of learning.

And what is this all doing to our brains- can we really still have good recall when we are overwhelmed with hyperlinks? In order for our brains to develop long, stable neurons and neurological connections we still need the slow-food of education: good, old fashioned reading, writing, and arithmetic.

Ever feel like the internet and social media are making you less smart? You might just be right, so let's look at how we can flip that on its head. Personalised education is just as much a hot opportunity as personalised medicine. What would you want to learn about?

KEY TAKEAWAYS

- What you can get from the university system to keep up to date.
- Free resources- are they a waste of time? Have you considered making your own?.
- Are non-accredited training courses, coaches, mentors, and apps worth the money?.

‘Beauty and the Beast’: How emerging technology and Industry 5.0 will allow us to be more human.

The Singularity: When we create an artificial intelligence of the same power as a human brain. Is this smoke and mirrors- can we truly recreate the magic of the mind? How would you teach such a thing? How do we ensure that there is diversity in this being? Who are the people creating AI? And what on earth is #AIForGood all about?

Robots, like people with English accents, are very often the baddies in the movies. AI or robots going mad and killing all the humans is something many famous Sci-Fi movies are based on. But, in reality AI, (or IA: Intelligence Augmentation as some now refer to it) is the only way we, as humans, are going to be able to cope with an increasingly digitised world. Some 90% of the current data that exists in the world was created in just the last two years. Big Data and AI go together like strawberries and cream- and we need AI to help us separate the signal from the noise.

With AI and robotics doing the boring, repetitive tasks there will be more time for us to smell the roses, talk to a neighbour, hang out with the family, and/or tackle some of the hard challenges we face today such as climate change, and world peace.

How can you get educated and up to speed with the latest hot topic and also the ethical and economic issues and opportunities they bring? What are you able to apply at work and home that can make immediate and positive changes in your life? If you could change one thing about new technology, what would that be? And, what is the kind of tech waiting for us to call it into action? Life on Mars? A cure for cancer? A chance of a longer, healthier, and happier life? Or just a better social media photo filter? In the end it is up to us to create the “5th Industrial Revolution”; Industry 5.0 where humans are the reason why.

KEY TAKEAWAYS

- What is Artificial Intelligence and how it is already in your life.
- How much can we control what data we share and who uses it.
- What’s coming next and what we need our politicians to know.

Talking Points

‘Diversity and Success are Two Sides of the Same Coin’: Why we need points of difference to truly innovate.

Want to put a bet on a business? Invest? Buy shares? A start-up is doing a ‘friends and family’ round of funding? Could there be just one metric alone that could give you an indicator of performance for your possible investment? Some people believe there is, and they call it ‘diversity’. More diverse companies are more stable; plus female founded businesses gives, on average the best return on every dollar invested. Diverse companies not only are more successful, they are also happier places to work at and have better staff retention.

If these ideas are true, then why is it that only approximately 2% of global venture capital goes to female founded businesses. In the top 100 share indices across the world you’re more likely to find a bloke called Richard in charge than a woman at the top of the table. Some companies unbelievably still have all male boards. Is this something you ever check when making large purchasing decisions?

Diversity is not just about gender. If you’re sat around the table and looking back at you are people who look, speak, were educated, or live the same kind of life as you, then ‘Houston, we have a problem’. Diversity and inclusion in the corporate world can seem like an uphill battle. Diversity is being asked to the party; inclusion is being asked to dance. Just numbers are not going to make the difference, the final push towards equality will be a change in culture, where differences equal corporate strength.

Look to mother nature, diversity is directly related to ecosystem health: The same is in the business world. Engage with the idea of 2D diversity, which means you can increase your own diversity quotient by training in a new language, learning to dance, picking up a card game or chess, and hanging out with people different to yourself. Travel broadly, try new things, and broaden your horizons in ways that translate to better performance at work.

KEY TAKEAWAYS

- Key statistics and information we can use to be better informed.
- What is 2D Diversity and how we can add value to our teams and projects.
- How can we plan and prepare for the next generation entering the boardroom?.

Engagements

Keynote Speaker

Dr Catherine Ball has a unique way of presenting. Captivating the audience with emerging technologies. Challenging the ethical and moral aspects of modern society. Educating and teaching to the deepest technical level, Catherine likes to demystify emerging technology. Confidence and exuberance are tempered with humility and personal reflections: audiences emerge invigorated, and switched on to the hope and challenges of future society.

Panellist

Dr Catherine Ball really adds value to any panel discussion, bringing current affairs and news to any technical dialogue. As a mother of two sons, she brings her real world voice that is unique in the realms of technology communication. Catherine's academic works and writings translate to a value add, technically having the most current ideas at hand. Having Catherine speak on a panel also immediately removes the risk of having a #manel. Bonus

Master of Ceremonies

Quick witted, well prepared, broad horizons of life experience, and the ability to react to sudden changes or last minute moments. Cool headed and articulate, Catherine also likes to bring her unique sense of humour and geek chic to any MC role. Audiences and event organisers both appreciate being kept on time and in good humour. Catherine particularly likes to keep the audiences engaged with the content and presenters by creating interactive ice-breakers, micro breaks, and having fun!

Moderator

Dr Catherine Ball appreciates a good moderator when presenting herself, and has learned over the years what makes a good one. Ensuring that the most is made of everyone's time and energy by asking the right questions and pulling the best out of the presenters, artists and panellists. Working in the world of documentary and film-making means Dr Cath loves to interview people and ask pertinent and (when necessary) the difficult questions.

Workshop Facilitator

Dr Catherine Ball runs a series of professional workshops, boardroom briefings, and delivers content that is developed by herself and can be tailored to individual needs and group sizes. Many clients have appreciated the workshop aspects of Catherine's work as part of a longer presentation, or as a warm up for the day or an event. Primarily focussing on innovation culture, new and emerging technology, and even governance and risk management for boards.

Clients

“Catherine was amazing, spot on with what we were hoping to achieve by bringing her in, and so well received by everyone!”

 **BENDELTA**

“Catherine is fantastic. So pleased we had her involved in the event. Her energy lifted the room and her thoughts and perspectives were referred to again and again throughout the rest of the conference.”

 **criterion**
conferences

“Dr Catherine Ball challenged us to consider the impact that technology can have in a humanitarian and social context and to consider why we wait to action when so much good can occur from the interface with technology.”



“The feedback on Catherine was excellent. She was a very engaging and interesting speaker who was a key part of the success of our event.”

 **Westpac**



SHARING THOUGHTS, KNOWLEDGE, AND EXPERIENCE

“Nothing in life is to be feared, it is only to be understood” — Marie Curie.



Media



Schmidt Ocean Institute
Video - 09.03.21

Scientists of R/V Falkor - Women in Science & SeaWeek 2021

Join some of the inspiring female Scientists from the Schmidt Ocean Institute to get a taste of the exciting science careers aboard R/V Falkor. This panel will celebrate International Women's day by bringing together women in the marine sciences ...
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Innovation Australia
Podcast - 08.03.21

Dr Catherine Ball – Assoc. Prof. of Engineering at ANU & co-creator at WoDaRC.

Australia is a leader in the development of autonomous robots used in remote automation systems across a range of industries – but in the mining and resources sector in particular. Australia also has a comparative advantage in the develop ...
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State Library QLD
Video - 04.03.21

International Women's Day 2021 - video 2

To celebrate #IWD2021 we take a look back at some of our favourite Game Changer moments showcasing the way in which Queensland female business leaders #choosetochallenge; to celebrate women's achievement; to raise awareness against ...
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Innovation Australia
Article - 12.11.20

The future of drones across Australian industry

There's a huge potential for Australia's drone industry because in many ways we are world leaders in drone regulation and usage, but one of the biggest challenges this nascent industry faces is a lack of cohesion, says Dr Catherine Ball, associate ...
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Exaptec
Podcast - 04.11.20

E11: Let's talk robotics with Dr Catherine Ball

In today's episode I talk to Dr Catherine Ball! Catherine is an Associate Professor, scientific futurist, speaker, advisor, author, founder, executive producer, executive director, company director and charity patron working across global projects ...
[Read More](#)



Apple Podcast
Podcast - 12.10.20

S2 E1: Drones For Good Podcast: Mirragin Unmanned Systems - WoDRC Season - Dr Catherine Ball

It's only appropriate for our first episode of this special season to interview the Convenor of the Congress, Associate Professor Dr. Catherine Ball! Andrew chats with Catherine about all things drones and they also discuss the upcoming congress. If ...
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ENGAGE AND IGNITE YOUR AUDIENCE

Connect with Dr Catherine Ball's team
and book her for your next event

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Media Enquires & Partnership Enquiries

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