

A CUTTING-EDGE LIFESTYLE WITH SCIENCE TO MATCH

A conversation with **DR. AMANDA CAPLES**, Lead Scientist at the State Government of Victoria, Australia



For six consecutive years, Melbourne has been rated the world's most liveable city. It has great parks and landscapes, and brilliant city beaches. Besides its famous arts and sports scenes, it offers quality education and world-class healthcare. Victoria leads the country in health and medical research, engineering and design, digital technology, cyber security and gaming, and agriculture and food production. Here, Amanda Caples, lead scientist for the Victorian government, discusses the city's research landscape.

As the lead scientist for Victoria, what is your role?

I work across government to drive economic growth through science, technology and innovation. I foster links across the innovation value chain engaging with business, the research sector and community to enhance collaboration. My priorities in 2017 are to study Victoria's onshore conventional gas fields, and work with universities and businesses to develop collaborative relationships and a more sophisticated innovation network.

How would you describe the research landscape in Melbourne?

The most powerful aspect of Melbourne's research community is its strong collaborative culture across the city, Australia, and the world. Medicine and health sciences are particular strengths of the research and tertiary education sector which attracts the bulk of national medical research funding (which is worth more than US\$370 million per annum). Melbourne is one of only three cities to have two universities in the global top 20 biomedical rankings.

Melbourne is known as an innovation hub. In what fields does the city excel?

Melbourne ranks in the top 10 global knowledge hubs with two universities in the top 100 Times

Higher Education 2016-17 World University rankings. Victoria leads the country in health and medical research, engineering and design, digital technology, cyber security and gaming, and agriculture.

How does Melbourne perform at translating research into impact?

Victoria has a very strong track record with standout examples including the development of the world's first bionic ear, the biology behind Venetoclax—the breakthrough cancer therapy— 3D-printed titanium and polymer replacement body parts, frost-resistant crops, stem cell therapies for human diseases, flu drug Relenza and devices for monitoring medication efficacy in treating tremor caused by Parkinson's. This month Melbourne-based Bionics Vision Technologies (the commercial arm of the Bionic Vision Australia consortium) announced private investment of A\$23.5m to develop and commercialise the next generation bionic eye (bionicsinstitute.org/news/Pages/Ourvisionrealised.aspx).

How do you foster engagement between academia and the business community?

One of my priorities is to support leaders of universities and other public institutes (eg CSIRO Commonwealth Scientific and Industrial Research Organisation) in building stronger business links.

There are many successful collaborations: the Food Innovation Centre at Monash (foodinnovationcentre.com.au) is a Monash University-based one-stop-shop for food and fibre businesses to access top product and packaging design and development services, sensory evaluation, testing, and research labs. An industry shared service platform, it provides world-class expertise and facilities at cost. BioCurate (biocurate.com.au), is a joint venture of the University of Melbourne and Monash University, supported by the state government. The company's key objective is to translate drug discoveries to attract investment and partners. It will provide expertise in drug development and commercialization, and the required funding targeted at this critical phase.

How committed is the Victorian government to technology-based sectors?

Through the Future Industries Fund strategies released in 2016, the government has identified six industry sectors that represent the greatest opportunity, including new energy technologies, medical technologies and pharmaceuticals. The government wants Victoria to capture a large slice of the global cyber security industry, worth an estimated US\$71 billion and growing by 10 per cent each year. It has signed up to work with powerhouses

including Oxford University's Global Cyber Security Capacity Centre, Israel's Tel Aviv University and the US State of Virginia, a major hub for the United States defence industry, and locally with CSIRO's Data61 Cyber Security and Innovation Hub.

How does Melbourne measure up for access to research infrastructure?

Melbourne is home to Australia's only synchrotron, a third-generation instrument with ten beamlines supporting materials science, minerals research, structural biology and environmental analysis. Melbourne is also home to the Australian Animal Health Laboratory, a national biosafety level 4 facility for animal and human pathogens.

What plans do you have for growing the state's innovative industry sectors?

Our strategy includes supporting the creation of startups through LaunchVic, investing in industries that will grow our economy through the Future Industries Fund strategies and the Sector Growth and Future Industries Manufacturing programs. Finally science literacy will also be prioritized as part of the *Education State* strategy.





MELBOURNE TAKES BIOTECH TO A NEW LEVEL

A combination of world-class research institutions and the region's leading talent and technologies have placed Melbourne at the forefront of medtech, biotech and pharmaceutical industries. Melbourne is also recognised globally for such medical breakthroughs as the Cochlear Implant and the flu drug Relenza. Additionally, the city has been named 'The World's Most Liveable City' for the sixth year in a row, ensuring you and your family will love living here as much as you'll love working here.

To find out how your scientific ambitions can be taken to the next level in Melbourne, contact your personal consultant at tradeandinvestment.vic.gov.au

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