

Griffith University Submission to the House of Representatives Standing Committee on Industry, Science and Resources inquiry into and report on developing advanced manufacturing in Australia

March 2023

Griffith University welcomes the opportunity to provide a submission to the House of Representatives Standing Committee on Industry, Science and Resources inquiry into and report on developing advanced manufacturing in Australia. Griffith's submission is focused on the critical role of universities in supporting local ecosystems and businesses to deliver a viable and thriving advanced manufacturing sector. Indeed, Griffith University is already making substantial headway in the advanced manufacturing field and with further expansion will be able to situate the Gold Coast as an advanced manufacturing hub for South East Queensland.

Griffith University's Gold Coast campus is home to our Advanced Design and Prototyping Technologies Institute (ADaPT)¹ which is situated in the Gold Coast Health and Knowledge Precinct (GCHKP)². The GCHKP is a partnership between the City of Gold Coast, Griffith University, Gold Coast Health and the Queensland Government. The GCHKP facilitates cross-industry collaboration in the local community and is home to Griffith University, the Gold Coast University Hospital, and the Lumina commercial precinct. The GCHKP is a powerful example of what can be achieved in advanced manufacturing when a place-based approach that addresses the component parts of the value chain is implemented.

Griffith's ADaPT has delivered local, national and global benefits. To date, ADaPT has been instrumental in delivering advanced manufacturing outcomes within the medtech field and space industry. Through a direct collaboration with the United States based medtech company BiVACOR, ADaPT has assisted with the successful development of the world's first rotary artificial heart (due to enter human clinical trials within two years)³. This innovation feat was the result of a strong collaboration across advanced manufacturing, engineering and design combined with access to clinicians and medical researchers. Without the co-location of these disciplines through a single project and physical space, it is unlikely that this technology would have been developed and progressed within the same timeframe.

ADaPT is also accelerating Australia's multibillion-dollar space industry. In partnership with Gilmour Space Technologies, ADaPT has provided critical design and prototyping techniques to develop next-generation satellite, rocket, and payload technologies that are lighter and more cost-effective to

¹ [Advanced Design Prototyping Technologies Institute \(griffith.edu.au\)](https://griffith.edu.au/advanced-design-prototyping-technologies-institute)

² [Gold Coast Health & Knowledge Precinct \(gchkp.com.au\)](https://gchkp.com.au/)

³ <https://gchkp.com.au/bivacor-wins-new-grant-for-artificial-heart-development/>

deploy⁴. ADaPT's 3D print composite rocket tanks and experimental satellites will see Australia's largest satellite launched into space by Gilmour in 2023.

The translational impact of ADaPT has led Griffith University to commit to the establishment of a larger ADaPT facility within the GCHKP⁵. The proposed expansion of the ADaPT facility will be the focal point for the GCHKP and will significantly contribute towards Australia advancing our global advanced manufacturing competitiveness. This new facility has the potential to significantly strengthen the existing GCHKP innovation ecosystem by expanding collaborative research opportunities; creating new highly skilled knowledge-based jobs; placing our national sectors at the forefront of research and development; and appealing to global technology companies. Griffith continues to receive interest in our prospective plans for expansion from companies across Australia and in other parts of the world, a testament to the desirability of facilities that co-locate novel research, innovation and investment in one place.

Facilitating access to cross-disciplinary facilities is a necessary feature of successful advanced manufacturing approaches. Similar facilities can be found in the United States at the [Oak Ridge National Laboratory \(ORNL\)](#), supported by the [Advanced Manufacturing & Industrial Decarbonization Offices](#) within the Department of Energy. ORNL brings together diverse capabilities to develop innovative technologies, with projects ranging from the development of supercomputers to fusion energy materials and new manufacturing processes for producing more efficient and cost-effective batteries for electric cars.

Targeted investment and planning towards advanced manufacturing ecosystems, such as the Gold Coast Health and Knowledge Precinct, is critical for Australia to deliver a thriving advanced manufacturing sector. Without such, industries are unable to readily access novel technologies and approaches to innovate their production outputs. Bringing together government, research and industry is therefore essential to unlocking the full potential of the sector. Universities, like Griffith, remain poised to contribute to the advanced manufacturing ecosystem and welcome further engagement from the House on this important development for Australia.

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⁴ <https://www.griffith.edu.au/partnerships/success-stories/gilmour-space-technologies>

⁵ The new ADaPT facility is contingent on funds being secured from the Queensland Government and the Australian Government, with Griffith University to make a significant financial contribution of its own.