Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2024 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)	Indicative Funding ($)				Total ($)
(Columns 1 and 2)	(Column 3)	2024-25 (Column 4)	2025-26* (Column 5)	2026-27* (Column 6)	2027-28* (Column 7)	2028-29* (Column 8)	(Column 9)
New South Wales							
The University of New England							
FL240100171	**Partial differential equations for propagation and aggregation**	450,000.00	500,000.00	500,000.00	500,000.00	500,000.00	2,450,000.00
Du, Prof Yihong	This fellowship develops partial differential equation (PDE) theory to fill in a gap in the mathematical modelling of propagation and aggregation occurring in ecological invasion, disease spreading, krill swarming and elsewhere. The existing models use PDEs over fixed spatial domains, where mature mathematical theories are available, but they fail to meet crucial demands in applications. To overcome this difficulty, we establish theories for PDEs over domains that are not fixed, but change with time, and build new models that keenly reflect the real world demands. Apart from the new mathematics and numerical tools, the project also produces a team of Australian researchers with critical skills in an area of keen international interests.						
	National Interest Test Statement						
	This project develops partial differential equation (PDE) theory and techniques to significantly improve the understanding of propagation and aggregation phenomena occurring in ecological invasion, disease spreading, krill swarming and elsewhere. The existing treatment of these phenomena uses PDEs over a fixed spatial domain, where many mature theories are available, but it fails to meet numerous crucial demands in applications mentioned above. To better suit the real world demands, we establish new theories and techniques for PDEs over spatial domains that are not fixed, but change with time, and build models which are capable of significantly improving the human control and prediction of these phenomena. Apart from the new mathematical theory and numerical tools, the project also generates a highly competitive team of Australian mathematicians with critical skills in a fast progressing area of keen international interests.						
	The University of New England	450,000.00	500,000.00	500,000.00	500,000.00	500,000.00	2,450,000.00
The University of New South Wales							
FL240100057	**Caves and their stalagmites: linking climate to groundwater recharge**	601,241.00	653,867.00	639,790.00	640,235.00	503,776.00	3,038,909.00
Baker, Prof Andrew	In a warming world, aquifers provide a resilient water source, and understanding the climate - recharge relationship is urgently needed. For the first time, caves and cave stalagmites will be used to define the role of climate phenomena such as La Niña and the Indian Ocean Dipole in the replenishment of groundwater. The project will generate new knowledge that is only possible by combining the analysis of cave stalagmites, underground hydrological monitoring, and climate and hydrological modelling to identify when this replenishment occurred in the past, present, and future. This should provide significant benefits to the sustainable management of this resource which has a multi-billion value for the Australian economy.						
	National Interest Test Statement						
	Groundwater is worth AU$6.8 billion in gross domestic product equivalent to the Australian economy and AU$34 billion as a value of production. Despite this economic importance, we do not know how the replenishment of groundwater (technically known as groundwater recharge) relates to climate phenomena such as El Niño and La Niña. This is increasingly important as we adapt to climate change and associated climate extremes, such as the recent rare occurrence of three consecutive wet La Niña years and this year's forecast dry and intense El Niño. This knowledge gap will be filled by using caves, uniquely situated between the land surface and the groundwater, as observatories of groundwater recharge in the past, present and future. Project outcomes include identifying the climate conditions most likely to lead to the rainfall recharge of groundwater, and how this recharge of groundwater will change with future climate change. This new knowledge can be used to help identify where groundwater can be sustainably used for water supply and industrial use in the future and to mitigate the impacts of longer and more intense droughts that are predicted with climate change. Using presentations at industry-focused conferences, workshops, and a white paper, project outcomes will be communicated to state and federal water policymakers and to industries that use groundwater as a resource, such as commercial forestry, the wine industry, tourism, and water supply.						

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FL240100181	**Establishing practical quantum information in higher dimensions**	665,000.00	680,000.00	680,000.00	680,000.00	680,000.00	3,385,000.00
Morello, Prof Andrea	This project aims to develop a quantum hardware platform with exceptional computational power, at a fraction of the cost incurred by industry- and government-based competitors overseas. Using technology pioneered by earlier curiosity-driven research, this Project will establish practical methods to perform error-corrected quantum computations using atomic-scale devices in silicon, and will create an Australia-led, globally-connected legacy in high-dimensional quantum computing. The project will provide a uniquely affordable platform to generate new intellectual property in support of the Australian quantum industry and to help train the emerging quantum workforce, in alignment with the National Quantum Strategy.						
	National Interest Test Statement						
	Quantum computers are expected to drive innovation and increase productivity in healthcare and medicine, natural resources and financial services, and to be of strategic importance for defence and national security. However, the poor performance of current quantum hardware is inadequate to provide such benefits. This Project will develop a revolutionary quantum computer platform, where information is robustly and densely encoded within large atoms inside a silicon chip. This platform will surpass the performance of all existing quantum hardware, while being manufactured at a fraction of their cost. In Australia alone, the quantum industry is forecast to create 19,000 new jobs and generate $5.9B in revenue by 2045. The quantum hardware built within this Project, hosted in a free and open academic environment, will help training and growing the workforce needed for our emerging quantum industry. Valuable ideas and intellectual property will be created and protected to give Australian industries a technological edge over their competitors. This research will create an Australia-led legacy in quantum computing, and a strategic network of collaborations with like-minded countries. The use of silicon as the basic platform will facilitate adoption by the trillion-dollar semiconductor industry, and the prospect of growing a domestic industry at the forefront of this field. The meaning and impact of the outcomes will be broadcast to the public through extensive outreach activities.						
	The University of New South Wales	1,266,241.00	1,333,867.00	1,319,790.00	1,320,235.00	1,183,776.00	6,423,909.00
The University of Sydney							
FL240100037	**Defining the wild-domestic animal interface and microbial spillover risk**	724,910.00	734,080.00	747,460.00	755,765.00	700,145.00	3,662,360.00
Ward, Prof Michael P	This program aims to generate a state-of-the-art mechanistic understanding of the wild-domestic animal interface to allow advanced assessment of the risk of microbial spillover. Using case studies spanning an array of contexts but with consistent methodology, a new understanding of the building blocks of the interface will be generated and a world-first risk assessment framework created. These gains will address an Achilles heel in mitigating infectious disease outbreaks, to safeguard our native ecosystems, livestock industries and public health. The program will create key interdisciplinary capability at the intersection of animal behaviour and disease emergence, and urgently needed assessment tools adaptable to stakeholder needs globally.						
	National Interest Test Statement						
	The wildlife-domestic interface represents points of contact between wild and domestic animals, creating major risks of microbial transmission and dissemination. Spillover of microbial diseases between these animal populations is well-documented and can have profound impacts: threatening the health and productivity of livestock; undermining ecosystems; stressing food security in remote Indigenous communities; and creating a pandemic threat to society. But our ability to assess the risk of disease emergence is woefully imperfect, as so clearly demonstrated by global pandemics that originate in wildlife. A significantly improved understanding of the mechanisms creating the wild-domestic animal interface is needed to enable assessment of spillover risk in a robust and repeatable manner. My proposed research program addresses just this challenge. By creating resilience to the risk and harm of disease spillover from wild to domestic animal populations, food production, the environment, and rural and remote communities can be supported. Given the importance of the wild-domestic interface and disease emergence, the research will be nationally and globally promoted via a new collaborating centre, which will embed key findings into accessible software, designed in consultation with stakeholders, so they can undertake specific risk assessments of interest easily and validly with their own data. This ground-breaking tool suite will become a new standard in the field.						
FL240100053	**Multispecies Creativity and Climate Communication**	760,270.00	759,175.00	760,346.00	758,332.00	700,437.00	3,738,560.00
Lim, Prof Liza	This project advances the role of the arts as the “missing link” in global movements of multispecies justice using innovative musical approaches to communicate the urgency of climate change and lead social change. It will generate new knowledge relating to musical						

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	creativity by drawing together multispecies perception, composition, arts-science research, and First Nations knowledge. Outcomes include new conceptual tools for music expressed in creative works, new multi-modal technologies for artistic applications, and a unique program of research training that prioritises First Nations researchers. This provides benefits aligned with the Australian National Cultural Policy—"Revive", growing international markets for Australian music.						
	National Interest Test Statement						
	One of Australia's foremost challenges is to effectively communicate the climate crisis in ways that prompt urgent and lasting transformation. Creative arts such as music are an under-utilised means for achieving this goal, that allow significant reach of these messages to all corners of society. This project will strengthen Australian contributions to addressing the "one-planet" problem of catastrophic climate change. Investigating multispecies perception through music, the project produces new creative works, new technologies with potential applications for Australia's burgeoning $115 billion-per-annum creative and cultural industries sector, and a unique training program in music with unprecedented access to international networks. The project promotes excellence in Australian research and creativity beyond academia, aligning with the National Cultural Policy—"Revive". It provides benefits to the nation by addressing three policy pillars: 1) providing skills training for First Nations researchers 2) paving the way for more sustainable career pathways in the arts, and 3) advancing Australia's growing access to international markets by creating compelling experiences for people to access and respond to ecological ideas in ways that can provoke social change.						
	The University of Sydney	1,485,180.00	1,493,255.00	1,507,806.00	1,514,097.00	1,400,582.00	7,400,920.00
University of Wollongong							
FL240100032	**Islands in the Ice: Interpreting the future of Antarctic ecosystems**	686,465.00	654,013.00	656,357.00	656,711.00	654,274.00	3,307,820.00
Robinson, Prof Sharon A	This program aims to better understand polar regions by combining data from key locations around the Antarctic continent to determine how vegetation in ice-free, coastal areas has responded to recent climate change. It will improve spatial and temporal climate data for Antarctica's coastline, thus enabling more accurate modelling of the rates of environmental change and how this is affecting Antarctica's unique biodiversity. Outcomes will impact on climate science, policy development and Antarctic decision-making. The innovative technologies developed will be applied in a new continent-wide terrestrial observing system, enabling Australia and other nations to better manage their obligations to protect Antarctic biodiversity.						
	National Interest Test Statement						
	Antarctica's climate is closely coupled to both the global, and especially the Australian, environment. Antarctica is experiencing rapid climatic shifts from ozone depletion and climate heating, but the impact on biodiversity in its ice-free areas is still poorly understood. This Laureate program aims to provide the toolkit for the terrestrial component of a proposed observing system for East Antarctica, which will become the foundation for a whole-of-continent observing system. It will link past changes in climate to current ecosystem health and harness technological innovations to model future risks for Antarctic terrestrial ecosystems. Outcomes will include: i) innovative and interdisciplinary methods that will enable non-destructive real-time monitoring of Antarctic ecosystem health (incorporating advanced Artificial Intelligence (AI) and smart drone platforms); ii) identification of biodiversity most at risk; and iii) strategies to protect and/or remediate at-risk ecosystems. This research program will allow Antarctica's Environmental Managers to assess the health of these unique plant communities and provide scientifically evaluated plans for protection and management of biodiversity, enabling Australia to deliver on its State of the Environment and International Antarctic Treaty obligations. It will ensure that Australia reclaims the lead in delivering impactful Antarctic terrestrial biology and world-leading understanding and protection of unique global ecosystems.						
FL240100124	**Regional decarbonisation transitions: an inclusive place-based approach**	675,285.00	729,867.00	743,319.00	756,164.00	708,862.00	3,613,497.00
Gibson, Prof Christopher R	The program aims to investigate how decarbonisation impacts Australian regions, and develop a novel place-based approach to empower communities and industries during a transformation that poses a significant risk of leaving many energy-intensive regions behind. New evidence of decarbonisation's global patterns and local impacts will be uncovered, along with on-the-ground skills, initiatives, First Nations enterprise and employment opportunities and lived experience of structural change. Expected outcomes include new methods, an evidence base to better govern transitions, and more inclusive approaches to						

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	sustainable regional development. The program will underpin national unity and fairness as Australia meets its emissions reduction targets. **National Interest Test Statement** It is vital to national unity and fairness that decarbonisation empowers, rather than leaves behind, regions that have been historically reliant on fossil fuels. International research is yet to solve the problem of how to achieve this, because decarbonisation research has predominantly been conducted by technical or economic specialists. Social, cultural, and geographical dimensions are lacking. The leading models are European-derived, too narrowly focussed, and limited in their relevance to Australian conditions. This research will support a decarbonised future that reduces regional disadvantage, by developing a novel, inclusive place-based approach that understands regions within national and global contexts, and connects economic geographical analysis to social and cultural insights. It will track where investments in renewables and clean manufacturing hit the ground, and with what effect. It will also uncover otherwise overlooked regional skills and initiatives, and First Nations perspectives, through this period of unprecedented change. Mapping technology will integrate findings, visualising trends for government, community, and industry stakeholders to plan for more inclusive transitions. Evidence will evolve in real time, as decarbonisation accelerates, and be disseminated via policy briefs, workshops, story-maps, and podcasts, to stimulate debate and support decisions that deliver more equitable outcomes for regional residents, stakeholders, and the environment.						
	University of Wollongong	1,361,750.00	1,383,880.00	1,399,676.00	1,412,875.00	1,363,136.00	6,921,317.00
	New South Wales	4,563,171.00	4,711,002.00	4,727,272.00	4,747,207.00	4,447,494.00	23,196,146.00

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Queensland							
Queensland University of Technology							
FL240100212	**Molecular engineering and doping for efficient and affordable solar cells**	606,360.00	616,250.00	618,750.00	616,250.00	566,250.00	3,023,860.00
Wang, Prof Hongxia	The new perovskite-based solar cells, produced by low-cost coating technologies, have remarkable power-conversion efficiencies. The aim of this project is to make them more durable and therefore economically viable, using molecular engineering and doping techniques to maintain good photoactivity in the perovskite (a metal halide), and to replace gold electrodes with superior low-cost carbon alternatives that have well-tuned and highly efficient electronic and surface properties. Expected outcomes include a new generation of affordable, high-quality, long-lasting solar cells that can be manufactured at scale, advancing Australia's position in a high-tech future-focused market likely to be worth billions of dollars to our economy by 2029.						
	National Interest Test Statement Affordable and environmentally sustainable solar electricity generation is an urgent global priority for the 21st century. Solar cells using carbon-based electrodes and a material called perovskite (a metal halide salt), to absorb the light energy – are an emerging technology with huge potential to generate cheap, sustainable, "green" electricity. But poor electrical and surface properties in carbon electrodes, and perovskite's chemical instability, have held back technical progress and slowed industrial and commercial adoption. This Fellowship will address significant scientific questions to make such solar cells highly efficient at energy conversion and more durable, maximising their cost-effectiveness and useful life. Such breakthroughs will first lift Australia's research standing in this cutting-edge field, then build manufacturing capability in a vital industry of the future. The project will help develop new research capabilities and a talented workforce equipped for the next stage: translating these advances for real-world application. Australia will be ideally positioned to capitalise on our well-known natural advantage in exploiting solar energy, and to create more skilled jobs and valuable export opportunities. Developing these innovative, efficient, affordable, and reliable technologies aligns with the two priority areas in Australian Government National Reconstruction Fund announced in 2022: "Renewables and Low Emission Technologies", and "Enabling Capabilities".						
	Queensland University of Technology	606,360.00	616,250.00	618,750.00	616,250.00	566,250.00	3,023,860.00
The University of Queensland							
FL240100130	**Unravelling immune signalling networks that protect vertebrates from attack**	712,306.00	706,060.00	710,296.00	710,643.00	576,244.00	3,415,549.00
Belz, Prof Gabrielle T	This Fellowship aims to understand how the linings of the gut and lungs, known as the epithelium, protect the body (e.g. against microbes or wounds) by triggering immune responses or repairing damage. The project will use innovative methods developed by the Fellow to generate new knowledge about the ways that cells function at the epithelial barrier to preserve life. Expected benefits include new workforce capabilities in cell-immune research and advancing Australia's international collaborations. By exploiting project discoveries to create novel platform technologies for drug and vaccine development and delivery, the outcomes of the project will translate for profound impact on Australian society, biomedical technology sectors and economy.						
	National Interest Test Statement The lining of the gut and lungs, known as the epithelium, protect the body by constantly responding to the environment, repairing wounds and defending against germs. It remains a mystery as to how this remarkable organ defends the body and this knowledge gap has blocked developing new ways of delivering medicines, vaccines and other drugs effectively into the body. This project aims to reveal, for the first time, how the cells of the epithelium translate and deliver cues to immune cells. This knowledge will enable the Australian biotechnology sector to develop a completely unique suite of biopharmaceuticals and platform technologies for nutrient and drug uptake and deliver novel vaccines. In doing so, it will build new sovereign capabilities in Australia, new workforce capabilities for advanced health and medical manufacturing and help reduce the burden of disease central to Australia's ambitious National Preventative Health Strategy.						

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	The University of Queensland	712,306.00	706,060.00	710,296.00	710,643.00	576,244.00	3,415,549.00
	Queensland	1,318,666.00	1,322,310.00	1,329,046.00	1,326,893.00	1,142,494.00	6,439,409.00

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South Australia							
The University of Adelaide							
FL240100114	**Plate Tectonics, Critical Metals and our Habitable Earth**	682,000.00	691,000.00	696,000.00	701,000.00	638,000.00	3,408,000.00
Collins, Prof Alan S	A grand science quest is to understand how our life-nurturing planet came to be. This Fellowship aims to use abundant geological information to build a tectonic, bathymetric and topographic digital twin of the Earth's surface through its middle age (1800–500 million years ago)—then apply this to investigate how deep earth processes including earthquakes, volcanos and plate tectonics endowed our planet with critical metals and built a habitable world. Outcomes include ground-breaking data-driven geology and actualistic deep-time full-earth modelling that have not been attempted before. Expected benefits include de-risking mineral exploration, therefore providing jobs, and honing our responses to challenges facing the modern-day biosphere.						
	National Interest Test Statement						
	This research program will build a dynamic map of the Earth's surface spanning nearly a third of our planet's existence (from 1800 to 500 million years ago). We will reconstruct ancient volcanic regions, deep ocean trenches and ancient mountain belts to generate a digital testable model for how Earth uniquely developed a breathable atmosphere, a benign climate and surface chemistry that nurtured complex life and deposited the critical metal resources that are essential for a low carbon economy. This paradigm-shifting combination of mapping, modelling, ground-truthing and testing of deep-time Earth systems has not been attempted before and is now possible through Australian-led innovation. The work is expected to transform fundamental knowledge of the function and evolution of our planet; findings that will be disseminated directly to the wider public and schools through promoted animations, videos and a targeted program of general science outreach. This new knowledge will also provide advanced solutions to benefit industry by mapping times and places in Australia to target critical metal discovery and exploration. For industry and government stakeholders, results will be translated and widely dispersed through industry networks, trade and popular publications, and freely available software.						
FL240100217	**Advancing the Frontiers of Detection: Ultrasensitive Terahertz Sensing**	730,482.00	759,797.00	759,797.00	759,797.00	729,917.00	3,739,790.00
Abbott, Prof Derek	This program aims to transform terahertz biosensing, creating next-generation sensors for rapid detection down to the sub-nanogram level. Terahertz radiation lies between microwaves and infrared - it can uniquely 'fingerprint' or identify substances. This ground-breaking program will investigate terahertz-matter interaction together with sensor design based on advanced materials, breaking current terahertz detection limits. This will enable rapid substance identification with exquisite precision at trace levels. This will revolutionise applications in security, healthcare, forensics, and space exploration. It will educate a new generation of research leaders in engineering and science, building sovereign capability in terahertz photonics.						
	National Interest Test Statement						
	Imagine a laser-based technology that, with a rapid scan, can accurately identify trace substances. Exciting possibilities include detection of viruses and pathogens in the environment, detection of trace amounts of water for space missions, identification of trace contaminants in industrial processes, and health monitoring by detection of biomarkers in a single exhaled breath. This Laureate program will build on our world-class terahertz laboratory at the University of Adelaide. Bridging current technology gaps will potentially generate significant intellectual property for Australia, and train a future workforce with cutting edge skills in photonics and biophotonics. Laser generated terahertz radiation is ideal for these applications, however, a quantum leap in the technology is required for rapid sensing at trace levels. We will implement technology and further research with the expected outcomes being breakthroughs in non-invasive sensing of biomolecules via research into advanced terahertz devices. Due to the widespread applications of this technology and possibilities for intellectual property spin-offs, research translation through a number of existing companies in our network will maximise the opportunity and share risk. This new enabling technology for a post-pandemic world, will provide fundamental advancements with impact on future applications including the forensics, biomedical, pharmaceutical, aerospace, and security industries.						
	The University of Adelaide	1,412,482.00	1,450,797.00	1,455,797.00	1,460,797.00	1,367,917.00	7,147,790.00
	South Australia	1,412,482.00	1,450,797.00	1,455,797.00	1,460,797.00	1,367,917.00	7,147,790.00

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Tasmania							
University of Tasmania							
FL240100141	**Precision Climate Tracking of the Earth's Response to Emission Reductions**	660,000.00	713,000.00	710,000.00	715,000.00	645,000.00	3,443,000.00
Bindoff, Prof Nathaniel L	The project addresses the urgent national and global challenge of tracking Earth's response to our efforts in the mitigation of climate change. The oceans are critical because they store more than 91% of the excess energy from human activity and are central to the Earth's water cycle. The project will develop near real-time indicators of the oceans response to our efforts to reduce emissions thus providing governments with the evidence that reductions in emissions are working. This will help Australia meet the Paris Agreement target of warming under 2 degrees. This proposal will also track annual contributions of the natural climate variations thus establishing the true underlying anthropogenic rate of change in the oceans and over land.						
	National Interest Test Statement The oceans play a critical role in climate change because they have absorbed more than 91% of the excess heat from human activity. They also provide a vast reservoir of moisture on Earth and have a central role in the Earth's water cycle. Our new understanding of the Earth system suggests we can much more accurately separate natural and human induced changes in the Earth system on short time-frames. These are the same time frames needed to track the evolving state of the climate system as it responds to emission reductions as part of the Paris Agreement. It is clear that stabilizing our climate is a critical societal problem and this proposal will produce the physical evidence needed to support society to get there. The research will also show the contributions from natural variations and the human forced contributions with greater precision. As part of our communications plan, we will release indicators of the warming of the oceans, the changing water cycle and their consequences on temperature, rainfall, winds and sea-level for Australia. We have a specific work package for engaging with stakeholders and will provide government departments and the public with updates on the health of the Earth system, particularly for the Australian region. For decision makers these updates provide the underlying evidence of the success of mitigation efforts and tools for assessing critical thresholds from human driven changes.						
	University of Tasmania	660,000.00	713,000.00	710,000.00	715,000.00	645,000.00	3,443,000.00
	Tasmania	660,000.00	713,000.00	710,000.00	715,000.00	645,000.00	3,443,000.00

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Victoria							
Monash University							
FL240100083	**A near-space surveillance capability for natural disasters**	718,000.00	692,000.00	694,000.00	696,000.00	618,000.00	3,418,000.00
Walker, Prof Jeffrey P	This project aims to address a gap in natural disaster surveillance by progressing the scientific basis of a near-space monitoring capability using passive microwave imagery. This project expects to advance new knowledge for providing the soil and fuel moisture data needed by fire, flood and landslide risk prediction models, and in producing real-time flood inundation and fire front maps. Expected outcomes of this project include an unprecedented surveillance capability for fires, floods and landslides by leveraging emerging capabilities in near-space sensing using high altitude drones. This will offer significant benefits in both natural disaster risk prediction and real time monitoring of natural disaster status, leading to saved lives.						
	National Interest Test Statement Australia is cursed with floods followed by droughts accompanied by fires. New technologies are urgently needed for risk prediction and monitoring of these regularly occurring natural disasters. Satellites suffer from an inability to see through smoke and cloud (optical), low spatial resolution (passive microwave) and infrequent temporal repeat (radar). However, the recent development of long endurance (3 to 12 months) high altitude (20 km) long wingspan (30+ m) drones provides an opportunity to develop a unique high spatial resolution passive microwave surveillance system with loiter capabilities over areas of interest. The intended benefit and impact of this capability would be real-time information on the likely development and progression of floods and fires, and the risk of landslides. Such information is vital for emergency services in terms of public and first responder safety, and in the efficient tasking of ground and/or air assets used in managing the emergency response. Accordingly, this project will help save Australian lives, improve community resilience, promote social stability and wellbeing, protect natural resources and reduce economic losses. This project will also build world class research capacity in this important cross-disciplinary area and train the next generation of young researchers and engineering leaders required for a safe and secure Australia. Moreover, outcomes will be promoted through social media and industry workshops.						
	Monash University	718,000.00	692,000.00	694,000.00	696,000.00	618,000.00	3,418,000.00
The University of Melbourne							
FL240100065	**Transforming international law for corporate climate accountability**	715,000.00	775,000.00	780,000.00	775,000.00	775,000.00	3,820,000.00
Peel, Prof Jacqueline	Since 2021, major companies' pledges to reduce greenhouse gas emissions have doubled, but policymakers and firms alike see globally consistent rules as urgently needed to stop greenwashing and support accountability. This program aims to transform international law's role in raising the ambition and ensuring delivery of companies' climate promises. By designing implementation tools with policymakers and business, and training future climate leaders in this innovative approach, the program seeks to accelerate policy and law reform for rapidly cutting corporate emissions to net zero. This will position Australia as a leader in global efforts to secure a safe climate future, vital for protecting our vulnerable environment, economy and region.						
	National Interest Test Statement Corporate greenhouse emissions are a key driver of climate change and costly weather disasters. Australian companies contribute substantially to this carbon footprint: our top 10 coal and gas producers generate more emissions than Canada while the big 4 banks loaned $13.1B in 2021-2 to the fossil fuel industry. Over the same period, net zero pledges of major companies (including many in the ASX200) increased over two-fold but studies indicate these targets and their implementation are of poor quality. Policymakers and business leaders diagnose the problem similarly: a lack of clear, consistent global rules governing company action to address climate change is impeding efforts to hold non-performing companies accountable and inhibiting the proactive change needed to keep global warming within safe limits. By bringing together separate research areas, across different jurisdictions, this program aims to generate new knowledge on how international law can incentivise ambitious action and improve companies' climate accountability. Working with policymakers and peak industry groups to co-design and apply international law tools will provide clear direction about the actions companies must take to align with global net zero goals. This program will place Australia at the forefront of action to accelerate effective corporate climate						

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2024 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)	Indicative Funding ($)				Total ($)
(Columns 1 and 2)	(Column 3)	2024-25 (Column 4)	2025-26* (Column 5)	2026-27* (Column 6)	2027-28* (Column 7)	2028-29* (Column 8)	(Column 9)
	responses, supporting government efforts to step up international mitigation of climate harms, which acutely impact our environment, economy and region.						
FL240100088 Kearney, Prof Michael R	**Predicting how Australia's pests will respond to climate change** Climate change is altering the distribution and abundance of species, including pests that threaten our food security and wildlife. We need reliable predictions of these changes if we are to adapt. This project will forge new collaborations between ecological and physical scientists to understand and predict how Australia's major mammal and insect pests will respond to climate change. It will transform our present knowledge of pest species' environmental limits from statistical correlation to biophysical mechanism. The new knowledge, and training of young interdisciplinary scientists, will equip the agricultural sector with better predictions of pest outbreaks and give conservation biologists new strategies for managing feral predators.	757,545.00	746,680.00	750,462.00	752,942.00	695,702.00	3,703,331.00
	National Interest Test Statement Climate change is generating new environmental extremes affecting our biodiversity, including changes to how pest species threaten food supplies and wildlife. Our present ability to predict such devastation and take targeted action to protect environmental assets and biosecurity is unreliable, since it is based on correlation rather than causation, leading to uncertainty and inaccuracy in future climates contexts. This project brings together a world-class interdisciplinary team of ecologists and environmental physicists to develop new predictions grounded in biophysical mechanisms of how species interact with each other and their environment, and likely responses to climate change. Economic benefits from more reliable predictions of pest outbreaks will save hundreds of millions of dollars each year through reduced crop loss and landscape damage. Environmental benefits include more targeted conservation planning to protect threatened species. Social benefits include strengthened public confidence from stronger scientific influence of plans such as the Federal Government's National Climate Resilience and Adaptation Strategy. Legacy will be achieved through integration with forecasting tools and policy development, and by training the next generation of STEM researchers in interdisciplinary methods to support improved climate impact services into the future. The highly translatable framework for predicting pest responses to climate change will ensure benefits beyond Australia.						
FL240100126 McCaw, Prof James	**New mathematics for infectious diseases: preparing for the next pandemic** This fellowship aims to transform Australia's infectious disease research capability, advancing a systems- and modelling-based approach. Major open questions – requiring breakthroughs in mathematics, computation and statistics – will be pursued. How can within-host infection dynamics be linked with epidemiological transmission data to gain new insight into the drivers of infection? How is that knowledge used to design surveillance systems to best support pandemic response? Solving these multi-faceted problems requires the generation and integration of knowledge in mathematics, biology, epidemiology and public health. Anticipated benefits include enhanced strategic planning and response capability for major societal events such as pandemics.	715,734.00	731,200.00	742,279.00	713,067.00	664,038.00	3,566,318.00
	National Interest Test Statement Infectious diseases pose a major and continuing threat to Australia's health and economic prosperity. In 2015-16 vaccine-preventable diseases cost the hospital sector over $600 million; COVID-19 caused the largest socioeconomic shock since WWII. Successful control is crucial. Infectious disease dynamics – combining mathematical modelling, computation, and statistics – is an emergent capability for expanding scientific knowledge of infectious disease transmission, impact and control. By enabling a richer understanding of how infectious diseases infect us, how they spread and how we might control them, the discipline of infectious disease dynamics has underpinned much of the public health advice on COVID-19. This fellowship aims to transform infectious disease dynamics from a proven, yet emergent, contributor into a foundational pillar in which a systems- and modelling-based approach is central to knowledge generation and impact. This requires both theoretical advances and system-wide engagement across disciplines from biology to public health. The anticipated outcome is multifaceted: an enhanced capability in the theoretical foundations of infectious disease dynamics, and an acceleration in infectious diseases biological and public health knowledge discovery. Working with a range of scientific and government partners will see these developments provide Australia with the modelling techniques, expertise and personnel to respond to future public health emergencies.						
	The University of Melbourne	2,188,279.00	2,252,880.00	2,272,741.00	2,241,009.00	2,134,740.00	11,089,649.00
	Victoria	2,906,279.00	2,944,880.00	2,966,741.00	2,937,009.00	2,752,740.00	14,507,649.00

* Note - Indicative funding for approved projects will be made available through a funding variation under section 54 of the ARC Act

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(Columns 1 and 2)	(Column 3)	2024-25 (Column 4)	2025-26* (Column 5)	2026-27* (Column 6)	2027-28* (Column 7)	2028-29* (Column 8)	(Column 9)
Western Australia							
The University of Western Australia							
FL240100015	**The Great Southern Reef: Surviving and Thriving in the Anthropocene**	759,000.00	729,084.00	738,167.00	753,256.00	628,996.00	3,608,503.00
Wernberg, Prof Thomas	I will integrate long-term ecological field data, seascape genomics and novel breeding and stress experiments to transform our understanding of the functions, challenges, opportunities and trajectories for Australia's Great Southern Reef (GSR) and its kelp forests. Catalysing the knowledge and human capital to ensure a thriving GSR into the future, my fellowship will help secure a global biodiversity hotspot and one of the largest, most unique and valuable marine ecosystems in Australia. This research will leave a strong legacy by generating new capacity to understand, predict and mitigate climate-driven changes in the world's kelp forests.						
	National Interest Test Statement This fellowship will generate unprecedented knowledge of the Great Southern Reef (GSR), an overlooked yet invaluable temperate marine ecosystem in Australia. Focused on climate change, marine heatwaves and kelp forests, the research aims to unravel how this biodiversity hotspot will adapt to future conditions. This new understanding will open opportunities for conservation and sustainable management, not only for the GSR but as a model for kelp forests worldwide. The project's significance is underscored by the GSRs economical, ecological and cultural importance: it contributes >$10 billion/yr to the economy, >70% of its species are found nowhere else on Earth, and it connects over 50 indigenous nations. It also consolidates extensive, long-term data sets covering over 1000 kilometers, a vital resource for future research. Mentoring and knowledge transfer will bolster human capital required to ensure a thriving marine environment for Australia's future. Moreover, by exploring nature-based solutions and future-proof restoration, the project contributes not only to safeguarding Australia's biodiversity but also to global climate resilience. Engaging with local to national policymakers through white papers and policy briefs, utilizing the platforms provided by the GSR Research Partnership and the GSR Foundation, will ensure wide dissemination and practical application of project outcomes and offer a blueprint for safeguarding the GSR and its productive kelp forests.						
	The University of Western Australia	759,000.00	729,084.00	738,167.00	753,256.00	628,996.00	3,608,503.00
	Western Australia	759,000.00	729,084.00	738,167.00	753,256.00	628,996.00	3,608,503.00
		11,619,598.00	**11,871,073.00**	**11,927,023.00**	**11,940,162.00**	**10,984,641.00**	**58,342,497.00**

* Note - Indicative funding for approved projects will be made available through a funding variation under section 54 of the ARC Act