Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
Australian Capital Territory							
The Australian National University							
FL230100021	**Cities as transformative agents for a climate-safe future**	577,172.00	639,212.00	648,212.00	642,212.00	634,212.00	3,141,020.00
Bai, Prof Xuemei	This project aims to address how cities can transform towards a climate-safe future- achieving net-zero emissions by 2050 while also enhancing resilience to climate impacts. By reconceptualising cities as transformative agents, this project aims to generate ground-breaking theoretical and empirical knowledge on how cities evolve and transform, how they can network to enhance resilience to climate impacts, and what governance innovations can set them onto accelerated pathways towards a climate-safe future. Aspired outcomes include advanced knowledge, new urban climate policy and practice, and a diverse pool of globally connected, next generation researchers, placing Australia at the forefront of integrative urban science and practice.						
	National Interest Test Statement Cities are responsible for 80% of consumption-based greenhouse gas emissions – the fastest growing of all sectors. Two-thirds of the world's population will be city dwellers by 2050. Australian cities, often ranked among the most liveable cities in the world, concerningly have some of the world's highest CO2 emissions per capita and are already facing risks from climate change via extreme weather, floods, droughts, and fires. This project will build knowledge and identify strategies to assist city managers to transform cities towards zero-carbon, resilient futures. By learning how cities currently deal with climate mitigation, it will explore innovative approaches (such as how to coordinate fragmented systems such as transport management, planning and construction and energy investment) and develop tools to enable cities to understand how they can transform their climate mitigation and adaptation practices (such as lowering emissions by lowering the need for motor vehicle travel, or construction of energy efficient buildings, or increasing tree planning and public parks). It will explore how innovations in mitigation and adaptation can be scaled across cities, identify mechanisms to network cities to enhance functional resilience and inform governance that can enable, maximise and accelerate transformation of cities to zero-carbon. By mapping viable pathways towards low carbon and resilient futures, this project will contribute in the longer term to environmentally safe and economically vibrant futures across Australian cities.						
	The Australian National University	577,172.00	639,212.00	648,212.00	642,212.00	634,212.00	3,141,020.00
	Australian Capital Territory	577,172.00	639,212.00	648,212.00	642,212.00	634,212.00	3,141,020.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
		2023-24	2024-25	2025-26*	2026-27*	2027-28*	
(Columns 1 and 2)	(Column 3)	(Column 4)	(Column 5)	(Column 6)	(Column 7)	(Column 8)	(Column 9)
New South Wales							
The University of New South Wales							
FL230100011	**Evacuations in International Law: Disasters, Conflict & Humanitarian Crises**	578,923.00	670,921.00	654,063.00	654,521.00	588,164.00	3,146,592.00
McAdam, Prof Jane	As contemporary crises intersect and compound, increasing numbers of people are seeking to escape the impacts of disasters, climate change, conflict and other emergencies. In such contexts, evacuations can be a life-saving tool to move people away from imminent harm. But they can also displace people, often for prolonged periods, and at great social, economic and personal cost. This timely and innovative program will transform how we conceive of, implement and evaluate evacuations as a form of rescue in international law and practice. This new field of scholarly inquiry will generate transformative legal and policy reform to safeguard the rights of evacuees, thereby enhancing the protection of millions of people worldwide.						
	National Interest Test Statement						
	Evacuations can be a lifesaving tool. But as recent global conflicts and Australia's floods and fires have shown, without careful planning and oversight, evacuations can also displace people – often for prolonged periods and at great social, economic and personal cost. The emergency nature of evacuations means that governments tend to focus on immediate assistance and may overlook longer-term needs, potentially leaving people without homes, livelihoods or support networks. Incorporating the perspectives of affected communities, this Laureate program will provide the first sustained, integrated analysis of evacuations across multiple countries and contexts. It will lead to the development of more protective legal and policy frameworks, providing law/policymakers with conceptual clarity and direction about whom to evacuate, when and for how long. This will yield socio-economic benefits for Australia by improving preparedness for crises, boosting community resilience, enhancing our region's stability and saving millions of dollars in post-disaster recovery and humanitarian assistance.						
FL230100088	**Breakthrough mathematics for dynamical systems and data**	452,996.00	541,866.00	511,866.00	541,866.00	482,996.00	2,531,590.00
Froyland, Prof Gary A	This fellowship aims to create a step change in the mathematics we use to learn actionable information from dynamical systems and dynamical data. Using a groundbreaking, operator-theoretic approach to analyse high dimensional systems and spatiotemporal data, this project expects to generate new knowledge in the modelling of complex systems and new pathways for unsupervised machine learning. Expected outcomes of this fellowship include a tranche of new mathematics and practical next-generation algorithms to discover hidden human-understandable patterns in complex dynamical systems and data. This should provide significant universal benefits to many areas of science, including elucidating mechanisms underlying climate and social dynamics.						
	National Interest Test Statement						
	Predicting climate and weather patterns, or even changes in public opinion is difficult because of the shear complexity of variables in the available data. While we have large data sets in many of these areas, we do not yet have the tools to easily process this information and reliably find meaningful macro-structures, such as climate oscillations, atmospheric blocking patterns responsible for heatwaves, and particular social groupings that drive rapid community consensus. These macro-structures enable a distilling of a complex system into simpler dominant components and will lead to improved predictive models in many areas of science. By developing new mathematical tools and practical algorithms this project will enable us to better discover hidden patterns in complex spatiotemporal data, providing social and economic benefits by improving the characterisation and prediction of key Australian climate drivers, which are connected to droughts, heatwaves, and bushfires and major flooding. This research will also shed new light on social processes such as opinion spreading and the formation of consensus.						
	The University of New South Wales	1,031,919.00	1,212,787.00	1,165,929.00	1,196,387.00	1,071,160.00	5,678,182.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
The University of Sydney							
FL230100075	**Mediated Trust: Ideas, Interests, Institutions, Futures**	630,000.00	643,755.00	624,909.00	606,464.00	601,999.00	3,107,127.00
Flew, Prof Terry	Declining trust in social and political institutions is linked to the rise of populism, misinformation and civic disengagement. Acknowledging the key role of digital media in enabling trust or promoting mistrust, this project explores mediated trust at societal, institutional and interpersonal levels. The research will leverage a novel framework of 'ideas, interests and institutions' applied to major case studies from news media, digital platforms, corporations and the WHO; and develops innovative methods for analysing the relationship between communications and trust. These will deliver world-first integrative approaches for Australian policymakers, industry and regulators to address both crises of trust and our digital futures.						
	National Interest Test Statement						
	Declining trust in social, political and economic institutions has been identified as a worldwide problem, linked to a crisis of trust in the media. This project will examine the role digital technologies and communications play in building or eroding societal trust, using case studies of news, digital platforms (such as social media), corporations and the World Health Organisation. The research will produce world's first integrated framework for evaluating the relationship of communications to trust in the age of digital platforms and define a new direction for communication and media studies. Through reports, briefings and major events for the media and digital industries this work will help Australian policy-makers, businesses and opinion leaders evaluate the effectiveness of regulation and governance in a digital age. Trust in applications of digital technologies is increasingly critical to trust in government itself, as seen negatively with the Robodebt scheme, or more positively with digital economy strategies, and this project will provide conceptual foundations for advancing a digital trust agenda.						
FL230100176	**Computational design of frontier materials for sustainable technologies**	505,000.00	650,000.00	650,000.00	650,000.00	465,000.00	2,920,000.00
Stampfl, Prof Catherine M	This Laureate will establish a new and powerful computational materials research platform that uses cutting-edge ab initio calculations and artificial intelligence, to understand and design tailored structures that possess the required new and improved functionalities for tomorrow's materials. In enabling the development of novel catalysts needed for the generation of green fuels and chemicals, and key quantum devices for quantum technologies, this Laureate promises timely support for Australia's commitment to renewable energies, low emissions and its nascent quantum future. New and existing collaboration with leading international groups underpin significant national benefits including new disciplinary capacity and world-class research.						
	National Interest Test Statement						
	Over the next decade our sustainable energy and quantum technology industries will require new materials with specific properties and functions and new manufacturing capabilities to produce them. This project will focus on new catalysts and advanced new materials that speed up carbon dioxide transformation and efficient ammonia production to produce sustainable fuels and chemicals, and enable new technologies such as for renewable energy. The research will develop a computational platform that uses powerful supercomputers, accurate simulations of atoms and artificial intelligence to overcome challenges in rapidly identifying and testing new materials. The breakthrough theoretical and computational methods we expect to deliver will advance Australia's renewable energy and emerging quantum technology industries and inform the development of sustainable manufacturing. This will ultimately enable industries to provide energy and products for the Australian population while reducing emissions that currently contribute to climate change.						

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
FL230100256	**Unlocking the secrets of modular representations**	654,728.00	670,637.00	688,179.00	690,503.00	655,622.00	3,359,669.00
Williamson, Prof Geordie	This Fellowship aims to greatly increase our understanding of the fundamental symmetries of discrete structures, like those present in computer science and cryptography. The research will generate transformative new knowledge in pure mathematics concerning the representations of finite groups, problems that have been unsolved for over a century. Expected outcomes of this fellowship include new algorithms to compute far beyond what is currently possible and a new understanding of the arithmetic difficulties present. Key benefits will be seen in the development of an emerging technology with significant implications for mathematics, and the training of Australian scientists in sophisticated theory and large-scale computation in concert.						
	National Interest Test Statement Modular representation theory is a field of mathematics that provides some of the building blocks for complex algorithms that can be used in software development, cryptography, stock market predictions, traffic models and patient care treatment. Over the last fifty years, computers have been used as a tool for computation in mathematics, but the lion's share of the work has still been done by researchers. Only recently have we seen increased use of computers to provide not only answers to the computation question, but also conceptual insight or analysis of hypothetical situations, or deep problems that have endured for decades and centuries. This project will combine expert knowledge and new concepts with large-scale computation to develop new knowledge that can address those deep problems that may in turn benefit our every day lives through faster processing and use of broader data sets to improve decision making in technology, such as medical equipment or cybersecurity. The research will also further develop our research and industry workforce and broaden our skills base in these techniques, along with the potential applicability to future challenges facing Australians. The project's scientific networks, which include artificial intelligence companies, can also provide a translation pathway, alongside our innovative online visualisation tools. Expected outcomes of this work include new algorithms to compute far beyond what is currently possible and a new understanding of the arithmetic difficulties present. Key benefits will be seen in the development of an emerging technology with significant implications for mathematics, and the training of Australian scientists in sophisticated theory and large-scale computation.						
	The University of Sydney	1,789,728.00	1,964,392.00	1,963,088.00	1,946,967.00	1,722,621.00	9,386,796.00
University of Wollongong							
FL230100033	**Secure Cloud Computing from Cryptography:The Rise of Pragmatic Cryptography**	551,898.00	624,067.00	630,202.00	640,419.00	587,785.00	3,034,371.00
Susilo, Prof Willy	This Fellowship aims to deliver a new research principle by developing cryptography solutions, namely pragmatic cryptography, for cloud security. Cryptography is critical in protecting data and computing for confidentiality and integrity. Current cryptography solutions are advanced but idealised and incompatible with existing cloud applications. The expected outcomes include design principles of pragmatic cryptography and concrete cryptography constructions to achieve secure cloud computing solutions, narrowing the gap between theory and practice. Achieving these outcomes will revolutionise cloud technology and position Australia as a global leader in innovative technologies that provide user assurance and trust in cloud security.						
	National Interest Test Statement Cloud computing users must be confident that their data is protected from unauthorised access. Cryptography solutions exist to guarantee cloud security, but they are idealised – meaning they are not easy to implement in practice. Cloud providers need to rewrite applications to use existing solutions, incurring high costs. This Laureate program proposes a paradigm shift from an idealised framework to establish a new pragmatic cryptography framework, allowing concrete cryptography solutions to be readily adopted in practice, reducing cloud vulnerability and safeguarding the data of individuals, businesses and government. Through collaboration with government bodies, the program will influence adoption of the new framework in international standards, contributing to widespread uptake of cloud computing across all sectors which will reduce reliance on local data storage and realise emissions reductions and business efficiencies. This program is a significant opportunity for Australia to lead this vital technology to protect critical infrastructure and systems as identified in Australia's Cyber Security Strategy.						
	University of Wollongong	551,898.00	624,067.00	630,202.00	640,419.00	587,785.00	3,034,371.00
	New South Wales	3,373,545.00	3,801,246.00	3,759,219.00	3,783,773.00	3,381,566.00	18,099,349.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
		2023-24	2024-25	2025-26*	2026-27*	2027-28*	
(Columns 1 and 2)	(Column 3)	(Column 4)	(Column 5)	(Column 6)	(Column 7)	(Column 8)	(Column 9)
Queensland							
Griffith University							
FL230100023	**Highly efficient microscale liquid handling and bio interfacing**	684,799.00	683,674.00	683,874.00	683,874.00	626,134.00	3,362,355.00
Nguyen, Prof Nam-Trung	The aim is to establish the exciting new field of micro elastofluidics, enabling the development of a highly competitive, sovereign capability in Australia, utilising flexibility and stretchability for efficient and precise handling of tiny volumes of liquid. The program will fill a critical gap in fundamental knowledge in fluid-structure interactions, leading to the development of wearable and implantable devices. The expected outcomes include innovative platform technologies for sample storage, handling and unique device-human interfaces with broad applications in health and defence. Expected benefits include enhanced capabilities in medical diagnostics, defence force protection and Australia's sovereign high-tech manufacturing.						
	National Interest Test Statement						
	Current wearable systems such as a smart watch are limited to tracking physical parameters such as heartbeat and movement. More complex analyses with body fluid such as sweat requires fluid handling. This project seeks to establish a ground-breaking research discipline that allows these devices to connect with the body chemically, either by accessing body fluids or by precise delivery of medicines. Currently there is no comprehensive solution for liquid handling in these devices such as utilising flexibility and stretchability for efficient and precise handling of tiny volumes of liquid. This project utilises bendiness and stretchiness to enable storage, transport, manipulation, and analysis of fluids in the microscale, ready for practical implementation. The outcomes will enable devices for continuous monitoring and intervention of an individual's health conditions, providing real-time feedback on health issues, and enhanced performance in sport and battlefield. Early detection and proactive measures to manage personal health will much reduce Australia's healthcare costs. Commercialisation of these developed technologies will follow with existing Australian industry able to access lucrative global wearable ($92B) and implantable device ($169B) markets. Expected benefits include enhanced capabilities in medical diagnostics, defence force protection and Australia's sovereign high-tech manufacturing. Commercialisation of the developed technologies will place Australian industry at the forefront of the lucrative market of wearable, implantable devices, supported by sovereign development and manufacturing capability.						
	Griffith University	684,799.00	683,674.00	683,874.00	683,874.00	626,134.00	3,362,355.00
James Cook University							
FL230100201	**Increasing the sustainability and resilience of coral reef fisheries**	650,000.00	720,000.00	710,000.00	700,000.00	620,000.00	3,400,000.00
Cinner, Prof Joshua E	This project aims to increase the sustainability and resilience of coral reef fisheries in Australia and overseas. This project expects to deliver solutions-oriented research that pioneers the first global assessment of coral reef fisheries sustainability, locates the most resilient reefs, and uses these as models to increase resilience in other locations. Expected outcomes include new knowledge, partnerships, and decision-support tools that provide benefits by: 1) leaving a global legacy of resilient coral reef fisheries, 2) generating national security benefits through increased engagement with and improved resource stewardship in neighbouring countries, and 3) enhancing Australia's research capacity by training 7 future research leaders.						
	National Interest Test Statement						
	This project will contribute to the national interest by developing novel solutions to address the coral reef crisis. Policy makers, scientists, and coastal communities are concerned about how ongoing coral reef degradation threatens the livelihoods of millions of people globally, including 64,000 jobs supported by Australia's Great Barrier Reef. Yet some reefs display exceptional resilience, which means they can better resist or recover from impacts and are consequently more capable of supporting livelihoods. This project aims to generate new knowledge and toolkits that will enable change-makers to build resilience in coral reefs both in Australia and overseas. The project will work directly with the United Nations, government agencies, and other stakeholders to: build an unprecedented network of global collaborators to share data on reef resilience across 68 different countries; locate the world's most resilient coral reefs; investigate what makes them especially resilient; and use investigation outcomes to develop decision-support tools such as web-based applications, policy briefs, and training sessions.						

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
	James Cook University	650,000.00	720,000.00	710,000.00	700,000.00	620,000.00	3,400,000.00
Queensland University of Technology							
FL230100159 Tyson, Prof Gene W	**From a descriptive to a predictive understanding of the human microbiome.** Microorganisms inhabit every imaginable environment on Earth. Despite advances in characterising microbial communities, our understanding is largely descriptive and a detailed appreciation of their complexity eludes us. This Laureate project aims to transform microbial ecology into a predictive science, through intensive investigation of the human gut microbiome as a model ecosystem. Major challenges in microbiology are expected to be overcome, with new knowledge for predicting how microorganisms influence, and are influenced by, their environment. Ultimately this knowledge can help us manipulate microbial communities in diverse ecosystems to our advantage – protecting the planet's natural assets, and improving agriculture and human health. **National Interest Test Statement** Microorganisms inhabit every imaginable environment on Earth and have a profound influence on biological, environmental, and industrial processes. Understanding the diversity and complex dynamics of microbial communities is a major challenge, limiting our ability to manipulate them to our advantage. For example, the human gut is inhabited by bacteria, archaea, protists, fungi, and viruses – all microorganisms. These affect most aspects of health, ranging from nutrient metabolism and cognitive function to development and regulation of the immune system. Disruptions in the microbiome are associated with systemic health challenges such as chronic inflammatory disorders, metabolic disease, and cancer. Leveraging the power of machine learning, this project will create a platform to facilitate detailed exploration of the human gut microbiome (a thriving community of bacteria and other organisms), discover and characterise many microorganisms new to science, then use this knowledge to simulate how microbial communities will respond to specific changes. With this new predictive capacity Australian scientists can move beyond current limitations, developing breakthrough strategies that guide commercial development of products to promote a healthy human microbiome. In collaboration with academic and industry stakeholders, this new knowledge will yield significant environmental, economic and societal benefits across a range of globally important microbial communities, such as agricultural and climate-critical ecosystems, and biotechnology.	700,000.00	700,000.00	700,000.00	620,000.00	610,000.00	3,330,000.00
	Queensland University of Technology	700,000.00	700,000.00	700,000.00	620,000.00	610,000.00	3,330,000.00
The University of Queensland							
FL230100022 Hornsey, Prof Matthew J	**Understanding and overcoming community roadblocks to achieving net-zero** In the last 15 years, humans emitted a quarter of the greenhouse gases ever emitted by our species. Reversing this trajectory will require extraordinary levels of community support in the face of painful transformations of our society. This project will understand the psychological factors underpinning climate (in)action, test strategies capable of catalysing action, and deliver a suite of impact tools for government, industry, and green innovators. The significant benefits that will emerge will assist in future-proofing the economy, increasing government flexibility to drive change, and reducing social conflict. The project will inform Australia's transition from a fossil fuel dependent economy to a leader in rapid decarbonisation. **National Interest Test Statement** In the last 15 years, humans emitted a quarter of the greenhouse gases ever emitted by our species. Reversing this trajectory will require extraordinary levels of community support in the face of painful transformations of our society and may be met with opposition. This project will involve research that will map community attitudes toward decarbonisation, understand psychological factors underpinning climate (in)action, test communication strategies for catalysing action at scale, and deliver impact tools for end-users. The primary benefit of this program is that it will provide early warning signals as to where and why resistance is brewing as we transition to a low-carbon society, and offer tools for smoothing that transition. The significant benefits that will emerge will assist in future-proofing the economy, increasing government flexibility to drive change, and reducing social conflict. The project will inform Australia's transition from a fossil fuel dependent economy to a leader in rapid decarbonisation. This research will help any sector responsible for the carbon transition, including all levels of government, NGOs, the energy sector, and green technology innovators.	645,888.00	649,758.00	609,213.00	593,213.00	548,343.00	3,046,415.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
FL230100095	**Materials Nanotectonics: Designing Conductive Inorganic Porous Materials**	554,866.00	665,736.00	665,736.00	650,736.00	557,996.00	3,095,070.00
Yamauchi, Prof Yusuke	This project aims to develop the next generation of conductive porous materials through an integrated approach which combines inorganic synthesis with informatics. Using this approach, transition metals can be combined with nonmetals creating mesoporous materials with precise control of their internal space allowing the correlations between structure, composition, properties, and performance to be revealed. This project is expected to generate new highly efficient electrocatalysts and energy conversion devices based on low-cost and earth-abundant transition metals. The project outcomes will position Australia at the forefront of research and development in advanced materials, smart catalysts, and renewable energy technologies.						
	National Interest Test Statement						
	A key vision of Australia's National Hydrogen Strategy is the production of hydrogen from renewable energy to reduce carbon emissions and support future energy needs. Water electrolysis, the process which splits water into hydrogen and oxygen using electrical energy, provides a sustainable method for producing clean hydrogen. However, the high cost of catalysts (materials that promote electrolysis) and their low energy conversion efficiency are challenges for wider adoption of this technology. This project aims to combine inorganic synthesis and machine learning to develop new conductive porous catalysts based on cheap and abundant non-precious metals. These catalysts will be used to develop energy conversion devices that are more efficient at producing hydrogen. It is expected that valuable intellectual property will arise from this project which will be licensed to industry partners for large-scale manufacturing of these devices. In doing so, this project will help support Australia's positioning as a global leader in hydrogen-based renewable energy technology and reduce its dependence on fossil fuels.						
FL230100100	**Forces in Nature: Tissue mechanics and cell sociology**	700,000.00	700,000.00	650,000.00	640,000.00	610,000.00	3,300,000.00
Yap, Prof Alpha S	Epithelial cells cover surfaces in the body, forming a shield to protect us from the environment. Despite their importance, we understand poorly how the cells communicate. This project aims to test the novel concept that epithelial cells communicate via transmission and detection of mechanical forces, using an innovative combination of cellular and biophysical experiments and physical theory. The expected outcomes are new knowledge, interdisciplinary training for young scientists, new national research capacity and growing international collaborations. Benefits include enhancing Australia's scientific linkages and research capacity and providing fundamental knowledge that could lead to future advances in bioengineering and drug discovery.						
	National Interest Test Statement						
	Epithelial cells form layers that cover most internal and external surfaces of the body including the skin and internal organs, creating shields to protect the body from environmental stressors. We do not fully understand how these important cells communicate with each other to provide this protective barrier. This project will study how epithelial cells use mechanical forces to communicate to keep their tissues in a state of stability while also adjusting to conditions that are best for their survival. This project applies the new science of mechanobiology to understand how these cells communicate with each other using mechanical forces to transmit signals that detect stress. Understanding how mechanical force within cells supports stress detection will ultimately enable us to develop new approaches for tissue engineering, and new ways to develop drugs to combat diseases in both animals and humans. These provide new opportunities for Australian biotechnology and industry, realized through a new workforce and new industrial processes that apply physical approaches to diagnose and manipulate biological processes.						
FL230100104	**Bringing Equality Home: A New Gender Agenda**	700,000.00	680,000.00	680,000.00	670,000.00	670,000.00	3,400,000.00
Baxter, Prof Janeen H	Compared to other countries, Australia has slipped backwards in achieving gender equality and is in danger of falling further behind. This jeopardises opportunities for all Australians and undermines social cohesion and economic progress. This project aims to provide the theoretical and empirical foundations to reverse this trend. The expected outcomes will be a new theory of gender inequality, a new approach that foregrounds the explanatory importance of caregiving and domestic work and new insights into the life course stages where gender inequality is most malleable. This will provide significant benefits including the impetus for new research, policy initiatives and capacity to build a more equal, stronger and prosperous Australia.						

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
		2023-24	2024-25	2025-26*	2026-27*	2027-28*	
(Columns 1 and 2)	(Column 3)	(Column 4)	(Column 5)	(Column 6)	(Column 7)	(Column 8)	(Column 9)
	National Interest Test Statement						
	Since the 1970s Australia has taken important steps to address gender inequality. But in the last 16 years our global ranking has fallen. Gender inequality limits women's and men's potential and undercuts social and economic development. At the current rate of change it is estimated that it will take over 100 years to achieve gender equality in Australia. This project aims to turn this around. It will provide a new approach that explains why changes to legislation are not enough and why we must turn our attention to caregiving and social relationships in the home to progress gender equality. The research will benefit Australia by showing how to reduce motherhood penalties in loss of employment and earnings and fatherhood penalties in loss of time with children. It will identify the life course stages where interventions will be most impactful. It will advance the potential of women and men by increasing knowledge, training, policy and practice for social cohesion and economic prosperity. The work is pivotal to improving gender equality and essential for ensuring Australia realises its potential to create better and fairer outcomes for all.						
	The University of Queensland	2,600,754.00	2,695,494.00	2,604,949.00	2,553,949.00	2,386,339.00	12,841,485.00
	Queensland	4,635,553.00	4,799,168.00	4,698,823.00	4,557,823.00	4,242,473.00	22,933,840.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
South Australia							
The University of Adelaide							
FL230100178	**Nonmetals for green catalysis**	584,866.00	704,555.00	703,983.00	704,010.00	646,327.00	3,343,741.00
Wang, Prof Shaobin	This proposal aims to develop nonmetal materials and technologies for frontier green catalysis that is targeted to contaminant degradation and chemical synthesis by catalytic oxidation processes. The project will systematically unveil the intrinsic nature of nonmetal elements in heterogeneous catalysis, develop rational design principles, and achieve scaling-up of intelligent nanomaterials and integrated green catalytic systems for high reactivity and selectivity. This cross-disciplinary research will deliver benefits to Australian industry in water treatment and fine chemical synthesis, foster Australian R&D in green technologies, synthesise catalysts from natural resources and industrial waste, and promote strong sustainability outcomes.						
	National Interest Test Statement						
	Catalysts are substances that speed up chemical reactions and are incredibly important for many industrial processes. But the problem is that catalysts often use toxic and/or rare metals. An emerging green alternative is a new type of non-metal catalyst that is derived from natural or waste resources so is not toxic and costs much less to produce. This project aims to pioneer the development of these natural non-metal catalysts for the purpose of: i) removing highly toxic micro pollutants in water purification processes, and ii) producing fine chemicals such as pharmaceuticals using environmentally-friendly green manufacturing processes. The project will deepen fundamental knowledge of chemical reactions, and then use this knowledge to provide advanced solutions to accelerate adoption of green technologies by Australia's manufacturing industry. It will also promote Australia's capability and position as a global leader in green catalysts and bring about a transition to a more sustainable and environmental friendly future by reducing hazardous waste.						
	The University of Adelaide	584,866.00	704,555.00	703,983.00	704,010.00	646,327.00	3,343,741.00
	South Australia	584,866.00	704,555.00	703,983.00	704,010.00	646,327.00	3,343,741.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
Victoria							
Monash University							
FL230100131	**The impact of human futures on Australia's digital and net zero transition**	581,216.00	620,966.00	634,406.00	633,006.00	604,996.00	3,074,590.00
Pink, Prof Sarah	Transition to an inclusive, trusted sustainable future depends on successfully aligning technological, climate and human futures. Yet our knowledge about human futures is inadequate, lacking the qualitative foresight crucial to Australia's transition to digital and automated technologies and net zero carbon emissions. This fellowship will innovate new ethnographic methods to investigate the role of future human values, practices and trust in developing a path towards technologically supported environmental sustainability. The research programme will deliver a sector-crossing base of knowledge about human futures and a framework for qualitative futures research with applications in planning for digital and net zero transitions.						
	National Interest Test Statement Australia aims to be a top ten digital economy and society by 2030 and plans to reach the net zero carbon emissions target by 2050. Achieving these ambitions is essential to guaranteeing a safe, inclusive and fair future society. But our futures are jeopardised by a knowledge gap regarding how humanity will navigate these transitions and how social systems will adapt. Bringing these plans to fruition must confront the complex challenge of aligning new technologies with human values and trust in decision making. This programme of research will solve this by increasing our understanding of the social factors involved in technological change, and allowing new foresight and planning to design inclusive, human futures. It will deliver unprecedented large-scale qualitative models of possible Australian futures and will combine this with quantitative forecasts to aid sustainable transitions in our economy (including in energy and automation). The outcomes will assist government departments, policymakers, industries and not-for-profits in planning and designing trusted, safe, and inclusive infrastructure, technology, services and training. Research findings will be directly available to these stakeholders through consultative reporting and varied and accessible dissemination forums, dialogues and publications.						
	Monash University	581,216.00	620,966.00	634,406.00	633,006.00	604,996.00	3,074,590.00
	Victoria	581,216.00	620,966.00	634,406.00	633,006.00	604,996.00	3,074,590.00

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

Minister's Approval for Australian Laureate Fellowships for Funding Commencing in 2023 Schedule

Approved Organisation, Leader of Approved Research Program	Approved Research Program	Estimated and Approved Expenditure ($)		Indicative Funding ($)			Total ($)
(Columns 1 and 2)	(Column 3)	2023-24 (Column 4)	2024-25 (Column 5)	2025-26* (Column 6)	2026-27* (Column 7)	2027-28* (Column 8)	(Column 9)
Western Australia							
The University of Western Australia							
FL230100030	**A walk on the wild side: understanding disease resistance across plants**	700,000.00	680,000.00	680,000.00	660,000.00	600,000.00	3,320,000.00
Batley, Prof Jacqueline	Plants are in constant battle with pests and pathogens. Wild species host genetic diversity, providing sources of disease resistance, while the narrow genetic base of crop varieties leads to an increasing reliance on the unsustainable application of chemical fungicides. Here I will apply the latest genomics approaches to characterise disease resistance gene diversity across the plant kingdom. Comparison of gene diversity within and between plant families will improve our understanding of resistance gene evolution in wild species and the impact of domestication and breeding on resistance gene diversity. Translation of this knowledge will support breeding for crop resilience, leading to durable resistance and more sustainable crop production						
	National Interest Test Statement						
	DNA sequencing is changing our understanding of biology and evolution, with opportunities for agriculture. Through DNA analysis of many individuals of a species we can find genes that are the same or different within and between species. Globally, pests and pathogens lead to huge yield loss in food production and cultivated species contain little diversity of genes conferring resistance to these diseases. This project will identify and characterise disease resistance genes across the entire plant kingdom and study their evolution and how they affect disease resistance. This information will be used to design and breed disease resistant plants and increase crop yields. The results will be translated for industry through the identification of new resistance genes for major Brassica diseases. The ultimate goal is to ensure that there is enough food to feed the growing population and have an armoury of resistance genes that can be deployed as new diseases emerge. This project will accelerate crop breeding, ensuring food security and supporting rural economies.						
	The University of Western Australia	700,000.00	680,000.00	680,000.00	660,000.00	600,000.00	3,320,000.00
	Western Australia	700,000.00	680,000.00	680,000.00	660,000.00	600,000.00	3,320,000.00
		10,452,352.00	**11,245,147.00**	**11,124,643.00**	**10,980,824.00**	**10,109,574.00**	**53,912,540.00**

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