

RMIT Vice-Chancellor's Research Fellowships

2026 Strategic Research Priority Areas & High-Priority Topics

We live in a world that is undergoing great change and uncertainty. Over the next decade, we will live and work through complex challenges in climate, sustainability, health, technological revolutions, and emerging social movements. RMIT University is committed to working with partners and communities to find new solutions and apply transdisciplinary approaches that help society, the environment, and the economy navigate these challenges.

The 2026 Vice-Chancellor's Research Fellowship campaign is strategically focused on three high-level research priority areas: Regenerative and Sustainable Futures, MedTech Innovation, and Digital Innovation. This year, the addition of Sustainability to Regenerative Futures reflects our deepening commitment to planetary health and social equity.

We invite researchers from all backgrounds to flourish at RMIT, making a positive real-world impact. If you value building connections across disciplines, seek to make a genuine difference to Australia and the world, and can demonstrate creativity and imagination in your approaches, we encourage you to apply.

Applications are open at academic levels A through D, with specific high-priority topics under each area guiding your application. Appointments will be made on merit, with strong alignment to the strategic priority areas and capability for impact.

Join us in advancing regenerative and sustainable futures, innovating in medical technology, and shaping the digital landscape for a prosperous, secure, and ethical world.

THEME 1: REGENEATIVE AND SUSTAINABLE FUTURES

Regenerative and Sustainable Futures advances knowledge and practice beyond traditional sustainability, accelerating efforts to restore, renew, and revitalise human, ecological, and material systems for inhabitable planetary futures. At RMIT, researchers are building visionary, interdisciplinary approaches across technology, design, enterprise, and society, with a strong orientation towards inclusion and justice, and deep engagement with First Nations knowledge.

In 2026, this theme foregrounds sustainability as a core principle with the topics listed below collectively driving RMIT's commitment to planetary health, social equity, and sustainable transformation, supporting Australia's transition to a regenerative and sustainable future.

R1. Regenerative Agriculture and Food Innovation Technologies: Sustainable Production from Soil to System

This area focuses on applying physical sciences and engineering principles to revolutionise food production and sustainability. Research may include precision fermentation, smart farming technologies, soil health sensors, and sustainable nutrient cycling systems. With an emphasis on materials science, biophysics, and environmental science, projects investigate scalable food production technologies that reduce environmental degradation, promote climate resilience, and support closed-loop nutrient and energy flows. The goal is to build food systems that are technologically advanced, ecologically harmonious, and resilient in the face of global change.

R2. Generative AI for Net-Zero Design and Construction

This topic focuses on developing construction-specific foundation models that automate high-performance building design. Research investigates how AI can integrate embodied carbon reduction, structural integrity, and regulatory compliance into early-stage Building Information Model (BIM) workflows. By combining generative AI with real-time sustainability analytics and digital twins, projects aim to minimise waste and carbon footprints, optimise intervention timing, and enable future-ready, sustainable construction.

R3. Clean Energy Materials and Devices: Engineering the Transition to Net-Zero

This area supports research into next-generation energy materials and device architectures for renewable generation, storage, transmission and conversion. Research may focus on thin-film photovoltaics, solid-state batteries, hydrogen production via electrolysis, or thermoelectric systems, or smart/micro grids, or renewable energy integration. With foundations in materials/electrical engineering, nanotechnology, and applied physics, the goal is to accelerate the energy transition through scalable, efficient, and circular energy solutions that regenerate planetary systems.

R4. Critical Mineral Processing – Rare Earth Elements

This topic advances sustainable approaches to the recovery, separation, and processing of rare earth elements (REEs). Australia has an abundance of rare earth deposits but limited midstream and downstream processing capability. Research spans sustainable, low-temperature, and efficient methods to extract and separate REEs from sources such as ionic clay deposits, electronic waste, and mining or industrial wastes. Key research aims to reduce reliance on hazardous chemical processes, enhance separation of mixed concentrates, and improve economic viability for lower-grade deposits.

R5. Novel Solutions and Natural Capital Systems for Regenerative Futures in Water and the Environment

This topic covers nature systems and environmental decision science, including ecosystem restoration, nature-based climate solutions, natural capital accounting, environmental monitoring, and policy/economic frameworks to scale regenerative approaches.

R6. Regenerative urban futures - Renewable and Carbon+ Precincts

This research topic examines and addresses decarbonisation, productivity, and sustainability challenges facing Australia's built environment, focusing on low-carbon construction processes, integrated design tools, and regenerative systems approaches. Fellows will be based in the Post-Carbon Research Centre, designing and testing material, digital, and integration dimensions of renewable and carbon-positive precincts. Successful applicants will have active industry partnerships and a strong foundation in regenerative and systems design, with the ability to apply automation, offsite, and digital technologies to construction challenges for sustainable outcomes. Transdisciplinary collaboration across RMIT's Design and Social Context-, Business-, and STEM Colleges will be essential.

R7. Creative Practice

This topic requires practice-based research dedicated to socially engaged regenerative futures. Successful candidates will bring strong networks and contribute to ambitious projects, thought leadership, and impactful transdisciplinary arts research, contributing to RMIT's Contemporary Art and Social Transformation (CAST) research group. Thematic areas include Indigenous and First Nations communities, climate justice, community-engaged arts, arts in public space, arts and health, arts and science, and emerging technologies in creative industries.

R8. Social equity policy and governance

This research contributes to innovative projects addressing social and structural determinants of wellbeing and health. Successful candidates will possess a strong foundation in social justice, co-design, and mixed-methods skills. Collaboration across the social sector is essential, as is a commitment to equity-focused research. Based in RMIT's Social Equity Research Centre (SERC), Fellows will specialise in mixed-methods modelling, large-linked dataset analysis, systems modelling, and policy translation. Strong sector partnerships and grant/tender experience are required.

R9. Architectural design and advanced/emerging digital technologies

This research requires practice-based architectural designers and researchers dedicated to exploring advanced and emerging digital technologies for new

architectural design processes and innovative applied solutions for regenerative futures. Thematic areas include generative AI for architectural design, computational design, robotic fabrication, and virtual worlds. Based in the School of Architecture & Urban Design, Fellows will contribute to ambitious cross-disciplinary projects and impactful transdisciplinary design-practice research for Australia's built environment.

R10. Media Futures

This research contributes to the design, governance, and implementation of new technologies and infrastructures across the media and communications sector. Building on the ARC Centre of Excellence in Automated Decision-Making and Society, researchers will have expertise in audience/user studies, media and communication infrastructures, information integrity, digital inclusion, and media policy/governance.

R11. Digital Economies, Sustainable Consumption and Behaviour Change

This topic examines how digital transformation can drive inclusive economic participation and reshape consumption and behavioural patterns toward sustainable outcomes. Research brings together digital platforms, finance, behavioural economics, marketing science, and public policy to understand how incentives, norms, data, and technology influence decision-making. The focus is on designing and evaluating interventions that reduce inequality, accelerate sustainable consumption, and support circular and regenerative economic models.

THEME 2: MEDTECH INNOVATION

MedTech Innovation at RMIT is revolutionising health outcomes and expectations through advances in medical technology, smart materials, bioinformatics, and digital health.

This strategic research priority area is committed to interdisciplinary collaboration, translational impact, and addressing health challenges across the lifespan and diverse communities. RMIT's partnerships with leading medical institutions and investment in cutting-edge infrastructure underpin our drive for practical, real-world health solutions. For 2026, our focus will be on the following three priority topics:

M1. Technologies for Healthy Aging

This topic focuses on developing and applying innovative technologies that support longevity, improve quality of life, and promote healthier ageing across the lifespan. Research may involve assistive technologies, remote monitoring systems, smart devices, data-driven health interventions, and tools enabling older adults to maintain independence, safety, and social connection in home and community settings.

M2. Bioinformatics for Cancer

This high-priority topic focuses on translating medical technology discoveries into clinical practice for people with, or at risk of, developing malignant disease. Successful Fellows are experts in big data (biostatistics and bioinformatics) who also understand 'wet-lab' and clinical translation.

M3. Bioinstrumentation for Infection Detection and Immune Monitoring

This topic focuses on engineering platforms for rapid, point-of-care detection of infectious agents and immune system biomarkers. Research includes microfluidic systems, optical / optoelectronic / electrochemical biosensors, smart sensors, and deployable diagnostics for clinical, remote, or emergency settings. Neuromorphics for low-energy autonomous sensing is emphasised.

THEME 3: DIGITAL INNOVATION

Digital Innovation is pivotal to shaping the future of the digital economy, society, and individual wellbeing.

RMIT's commitment is to world-leading, multidisciplinary digital innovation research, driving prosperity, security, and ethical outcomes for all. Our work addresses the opportunities and challenges of digital transformation, from quantum technologies to the ethical deployment of AI in society and business. For 2026, our focus will be on the following six priority topics:

D1. Quantum Digital Innovation

This high-priority topic is focused on research at the intersection of quantum science and digital technologies. Fellows will lead projects advancing quantum information processing, computing algorithms, software stacks, quantum/post-quantum cryptography, and precision manufacturing of quantum devices. Research delivers quantum sensing solutions for health, mining, and telecommunications.

D2. AI-Driven Solutions for Advanced Manufacturing and Industry 5.0

This topic focuses on AI-enabled innovation in digital and advanced manufacturing, including automation, process optimisation, additive manufacturing, and AI-driven discovery of bespoke materials. Research may explore integration of AI and IoT systems for intelligent, adaptive production environments, enhancing productivity, quality assurance, and predictive maintenance. Focus is on 3D printing.

D3. AI for Health Equity and Digital Care Innovation

Research into applied AI and digital technologies that improve healthcare delivery, equity, and patient engagement. Includes clinical natural language processing, predictive analytics for population health, AI in digital triage and telehealth, and

responsible automation in health settings. Emphasis is on privacy-preserving methods, fairness across diverse populations, and interdisciplinary collaboration with public health, social work, and design.

D4. Digital Innovation Creative Practice

This topic focuses on advancing new models of transdisciplinary digital practice through collaboration with cultural institutions, studios, industry partners, and independent creatives. Researchers will develop proposals and projects within practice-led environments, co-creating digital works across interactive media, games, immersive experiences, and experimental platforms. The focus is on fostering equitable, resilient creative communities and enhancing digital ecosystems. Fellows will be based in RMIT's Centre of Digital Ecosystems (CODE).

D5. AI, Big Data Decision Intelligence in Business and Policy

This topic examines how artificial intelligence and large-scale data analytics are transforming decision-making in corporate strategy, financial markets, and public policy. Research focuses on predictive modelling, algorithmic governance, and responsible deployment of AI-driven tools, with attention to transparency, fairness, and accountability.

D6. Marketing Technology and Consumer Behaviour

This topic explores advances in marketing technology, including AI-driven personalisation, programmatic advertising, and consumer data analytics, reshaping brand engagement and purchasing decisions. Research investigates ethical deployment of consumer data, effectiveness of digital marketing strategies, and psychological and behavioural dynamics underlying online consumption.

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