

Strategic Research Plan

2014 - 2018





Tasmanians deserve a world-class university, in which education programs that prepare graduates for global participation are informed by an intellectual environment that places high value on the creation and dissemination of knowledge. It is research, a creative pursuit, that distinguishes universities able to make this claim, and we reassert our ambition to be a leading national and international research university, acknowledging the boost in research performance this will require.

– Open to Talent

Welcome



The University of Tasmania has embarked on a bold institutional strategy – Open to Talent – which identifies our three priorities as research, students and community.

A central component of Open to Talent is the assertion that Tasmanians deserve a world-class university, in which education programs that prepare graduates for global participation are informed by an intellectual environment that places high value on the creation and dissemination of knowledge.

Our research endeavours are essential to maintaining our world-class University and ensuring that the University continues to grow its national and global standing.

Our research endeavours are essential to maintaining our world-class University

This strategic plan provides the context that will guide and inform every aspect of the next stages of our University's research development.

It affirms our commitment to, and support for, individual and discipline excellence. It also consciously identifies our unique Tasmanian setting through five areas of focus that reflect our geography, society and economy. This context allows us to address problems of both local and global significance in an integrated manner open to very few universities globally. The thematic focus

will have impact across our research, our students, and our community.

The plan is a result of a broad and engaged debate across the whole university community and, as such, I am confident that it provides a compelling foundation for the University of Tasmania to achieve its research ambitions.

I am excited by the University of Tasmania's future and look forward to seeing this strategic plan come to life.

Professor Paddy Nixon
Deputy Vice-Chancellor (Research)

Contents



1.	3 Welcome	19	Our Infrastructure
	5 Introduction	19	Central Facilities
	7 Our Research	20	A Multi-Campus University
	11 Environment, Resources and Sustainability	20	Infrastructure Planning and Precincts
	11 Creativity, Culture and Society	20	Core Strategic Objectives
	11 Better Health	21	Our Systems
	12 Marine, Antarctic and Maritime	21	Research Operations and Support
	12 Data, Knowledge and Decisions	21	Business Development and Technology Transfer
	13 Our Institutes and Centres	21	Communication
	13 Core Strategies	21	Research Governance
2.	15 Our People	22	A Budget Model to Promote Research
	15 Building Our Research Community	23	Core Strategic Objectives
	15 Partnerships and Benefits	25	Concluding Statement
	17 Being Globally Engaged		
	17 Student Experience: Research-Teaching Nexus		
	18 Core Strategic Objectives		

Introduction

Open to Talent, the University of Tasmania’s strategic plan, sets out an ambitious vision that states:

The University of Tasmania will be ranked among the top echelon of research-led universities in Australia. The University will be a world leader in its specialist, thematic areas and will be recognised for its contribution to state, national and international development.

To realise this vision the University of Tasmania asserts its commitment to individual, disciplinary and multi-disciplinary thematic research excellence and sets itself the target of becoming a top 250 ranked global university and consistently a top 10 Australian research university. The University of Tasmania also commits to a balance of basic research set alongside applied research that serves our state and nation; research generating real long-term benefit to our community.

This strategic research plan (2014-2018) is structured around four elements of the framework designed to achieve this vision (Figure 1):

The University of Tasmania will be ranked among the top echelon of research-led universities in Australia

- The character and focus of **our research** endeavour is elaborated through distinctive research themes (Figure 3), built on the uniqueness of our island state.
- The strategy recognises that our research is manifest through **our people** and sets out how we attract, retain and develop our research community. It also recognises the central importance of the distinctive research ecology of the community of researchers and partners – both within and beyond the state, that extend the capabilities and qualities of our research.
- Our research endeavour is supported by **our infrastructure** (whether it is specialist equipment, laboratories, facilities, or supporting services, such as libraries and computing infrastructure)

that matches our aspirations to provide the best possible environment for our researchers. This research infrastructure will reflect the need to focus our research endeavours around geographical or virtual precincts that concentrate our researchers, facilities and services.

• **Our systems** of research governance and operation must also develop to provide the clear and simple models of accountability, oversight and support with innovative policies.

In the following sections we describe these four elements and how they interact to provide the research environment characteristic of the world-class research university that Tasmania deserves.

Figure 1:

Structure of the research strategy

Our Research	Our People	Our Infrastructure	Our Systems
<ul style="list-style-type: none"> • Individual academic endeavour is our foundation 	<ul style="list-style-type: none"> • Attracting, retaining and supporting the best staff 	<ul style="list-style-type: none"> • Resource focused on targeted world-class facilities 	<ul style="list-style-type: none"> • Collegial and open research governance
<ul style="list-style-type: none"> • Disciplines to provide the best and most supportive research culture 	<ul style="list-style-type: none"> • Enhancing the Higher Degree student experience 	<ul style="list-style-type: none"> • Concentrating specialist facilities in natural precincts 	<ul style="list-style-type: none"> • Resourcing and incentivising research activity through strategic investment
<ul style="list-style-type: none"> • Thematic focus to recognise, or establish, beacons of excellence 	<ul style="list-style-type: none"> • Internationally engaged through thematically aligned networks 	<ul style="list-style-type: none"> • Recognising and supporting specific campus and regional needs 	<ul style="list-style-type: none"> • Professional, responsive and targeted operational support
<ul style="list-style-type: none"> • Social and economic impact balancing basic and applied research 	<ul style="list-style-type: none"> • Extending our capability and capacity through partnerships 	<ul style="list-style-type: none"> • Linking physical space, library and other planning to support research 	



Puma project: University of Tasmania ecologist Dr Scott Carver will contribute his research expertise to a new project based in Colorado that aims to increase understanding of disease spread and prevention by studying wild populations of pumas in the US.

1. Our Research

The University of Tasmania occupies a unique position in Australia’s higher education sector. It is consistently in the top 10 Australian universities based on its research income and has a rapidly increasing publication profile.

Our research has been rated by the Federal Government’s 2012 Excellence in Research for Australia (ERA) initiative as above world standard in 16 broad fields or 71 per cent of its submitted disciplines. The University has more than 400 industry partners and it collaborates with more than 117 nations in the world.

As a result of our ability to engage industry, the University has confirmed industry partnership funding from 2010-2020 of more than \$400 million in agriculture, forestry, chemistry, mining, marine, aquaculture and maritime research. The University continues to improve its position in world rankings, being ranked 308 in the 2014 Academic Ranking of World Universities (ARWU).

Open to Talent recognises the essential contribution of research to the University. The pursuit and communication of research is inherent in our mission, and embodied in the ambition of our people. Research that produces cutting-edge knowledge creates the foundation for outstanding student experience. Our research anticipates and responds to the challenges that face our state and nation: its excellence and impact recognised as contributing to the global community.

Our University research strategy recognises that our people with their individual academic excellence are the

foundation upon which our vision is built. It further recognises that academic disciplines and interdisciplinary studies provide the richest and most compelling environment to support and develop individual excellence.

However, the most pressing challenges facing our society today, whether at the local or global level, are deeply complex and demand input from diverse

People with their individual academic excellence are the foundation upon which our vision is built

disciplines, expertise and interdisciplinary collaboration to resolve. It is the multi-disciplinary nature of these challenges that motivates the establishment of University wide research themes (Figure 2).

These themes provide the opportunity for our academic community to bring their individual and disciplinary expertise to bear collectively on problems of global significance and in doing so build a deeper and more connected academic community across our campuses and necessitate strong collaboration with

other partner universities and institutions. In addition, strong collaborations within Tasmania with state and federal government agencies, the private sectors and community organisations generate and sustain powerful research ecosystems.

Because the University is the sole provider in Tasmania in what appears as a self-contained system, it has created a unique capacity to create a system-wide response to health, environment, marine, maritime, ICT and cultural research challenges.

As the only University in the state, the University of Tasmania is uniquely positioned to take account of, and exploit, our island locale to inspire this thematic research. Tasmania provides a unique socio-ecological system in which to observe and understand some of the most significant challenges facing Australia and the world. In the domains of environment, culture, economics, education and health, to name a few, Tasmania provides an ideal and largely contained system in which to understand the multi-faceted nature of complex modern challenges, to propose and implement solutions with our partners, and to assess the real impact of these solutions. Three key factors drive this assertion: *Continued page 6*

Figure 2:

Themes are founded on motivated and talented individuals and discipline excellence



Figure 3:
Themes and their primary disciplinary connections

FACULTY	RESEARCH				
	Environment, Resources & Sustainability	Creativity, Culture & Society	Better Health (for our populations)	Marine, Antarctic & Maritime	Data, Knowledge & Decisions
Arts		●	●	●	●
Australian Maritime College	●			●	●
Education	●	●	●		●
Health	●	●	●		●
Institute for Marine & Antarctic Studies	●	●		●	●
Law	●	●	●	●	●
Menzies Institute for Medical Research	●		●		●
Science, Engineering & Technology	●	●	●	●	●
Tasmanian School of Business & Economics	●	●	●	●	●

Tasmania provides a unique socio-ecological system in which to observe and understand some of the most significant challenges facing Australia and the world

1 LOCALITY

Four of the five research themes have been specifically established in acknowledgement of the unique, concentrated and well-recognised characteristics of the Tasmanian experience. In some cases, the location and geography place us next to, or in unique proximity to, our object of study (Antarctica, temperate and Southern Ocean fisheries, geological and topographic features) or provide an unusually diverse physical environment.

Location, environment and isolation also explain much of our Indigenous, convict and socio-economic heritage.

Distinctive social processes have also given Tasmania specific and sometimes unique public policy, educational and health challenges. Our research themes reflect on these Tasmanian challenges and investigate how they are connected to or reflective of broader national and

international research agendas. It is this 'situated' nature of our research, its embeddedness in the physical and cultural landscape of Tasmania and its connection to wider global research agendas that motivates our thematic selection and focus.

2 INTERDISCIPLINARY RESEARCH AND SOLUTIONS

The questions, problems and challenges in the five themes cannot be addressed within the conventional boundaries that disciplines or fields of research necessarily create. Each of these themes partly map onto existing research excellence and core academic disciplines. For example, it is obvious that without high-level computing, competency in the physical sciences and mathematical modelling, environmental science, so crucial to two of the themes, would be limited if not impossible. By the same

token, the health theme is built on existing strengths of medical and health science but strengthens with growing relationships with law, economics and public policy, while the creativity theme connects the diverse areas of creative arts, humanities, the social sciences and beyond. Indeed, our themes bring interdisciplinary teams together, as well as facilitating novel and unexpected connections between them. The themes we have identified already demonstrate that interdisciplinary collaboration is woven into the fabric of the University and that such collaborations must expand and deepen.

3 IMPACT AND POLICY FOCUS

Research, while an end in itself, is also a foundation of practical economic and social benefits for the supporting community. Each of the research themes strives to balance the need to deepen fundamental research while emphasising real impact through application to societal problems. This in turn creates some apparent tension between national and global ranking systems, which place emphasis on the absolute quality of our research, and our obligations to

address policy challenges, which have direct impact on our community. But this tension is more apparent than real; effective policy matters are dependent on the highest quality research and it is their connectedness that we emphasise.

The problems our themes tackle are essentially practical: they have policy outcomes, they indicate returns to the Tasmanian community, and they show that these returns are magnified when guided by advanced natural and human science, when internationally tested and when underpinned by the most advanced research methods theories and techniques.

Our themes bring the world's most advanced thinking and techniques to bear on problems that affect the local community. We connect the global research effort to local concerns, and show that many local concerns reflect global dependencies.

Our research themes provide a setting for individuals, disciplines, established concentrations and our partners to come together to address some of the most pressing questions facing our communities. The themes provide an integrated way of linking school, faculty and University plans and consequently ensuring the resources we employ to deliver these plans are used to the best effect.

Our thematic focus also provides a voice for the University to communicate the breadth and impact of its research globally, to inform and enhance our undergraduate and graduate programs, and to provide a stimulus for new scholarly conversations across the University.

The University has existing concentrations that reflect leadership in historically distinct disciplinary areas. Examples include Menzies Institute for Medical Research, ARC Centre of Excellence in Ore Deposits, Australian Centre for Research On Separation Science, Tasmanian Institute of Agriculture, Colonialism and Its Aftermath, the Housing and Community Research Unit and, most recently, the Institute for Marine and Antarctic Studies. Their success has added markedly to the

reputation of the University as a research-led institution. A research-intensive university also looks to the future to develop new areas of research. In recent times, we have established, or are committed to establishing, new centres of research excellence in areas such as the study of social change, future landscapes and ecosystems, computational sciences, and creative industries.

Through a broad academic discussion, the research community has identified five overarching research themes that reflect

our particular current and developing strengths, build on existing multi-disciplinary teams and address important challenges for our researchers.

These reflect areas where our collective endeavour has the potential to answer questions of global relevance.

The five determined themes are (Figure 3): Environment, Resources and Sustainability; Creativity, Culture and Society; Better Health; Marine, Antarctic and Maritime; and Data, Knowledge and Decisions.

Our research themes provide a setting for individuals, disciplines, established concentrations and our partners to come together to address some of the most pressing questions facing our communities



Mammal expert: Professor Chris Johnson.



Looking to the past: Associate Professor Hamish Maxwell-Stewart is a historian and Associate Dean of Research for the School of Humanities.

Our Research Themes

ENVIRONMENT, RESOURCES AND SUSTAINABILITY

Environmental research in Tasmania is exceptionally well-placed to address the problems of how to maintain biodiversity and ecological function in the face of two pressing global challenges: the need to expand food production and other extractive industries through intensification of land and resource use; and, how to mitigate the impacts of climate change on environmental functioning.

Tasmania is an extraordinary laboratory for environmental and place-based social research because of topographic and climatic diversity and the variety of primary production systems in agriculture, fisheries, forestry and mining. With bounded temporal, evolutionary and geological histories, and well-documented ecological communities, it has some of the world's best high-resolution projections of future climate. With a history of environmental awareness and 50 per cent of its land mass in protected areas, Tasmania is an ideal living laboratory for analysing the social, economic and institutional dimensions of our environment.

The questions that guide this theme are:

I. How can we promote the social, economic, political, cultural, psychological and educational adaptations required to support the ideas, institutions and

practices necessary for a sustainable future?

II. How can we develop new approaches to the management of landscapes and natural resources, based on scientific and social inquiry that will support resilient ecosystems, primary production systems and communities?

III. How does environmental change influence biological diversity, ecosystem processes, services, and human society?

CREATIVITY, CULTURE AND SOCIETY

The University has a strong research tradition in the creative arts and the industries they nurture; in heritage and historical interpretation; and in developing and implementing innovative public policy. This tradition has embraced sophisticated theories, multiple collaborations and a strong focus on community enhancement and the 'public good'. The core concern is with democratising and deepening cultural and heritage production and its appreciation, to empower citizenship and encourage active engagement and participation in developing public policy. The core question is how to create and sustain a creative and active cultural and historical sensibility?

Tasmania is a tightly knit, culturally-engaged community with a robust civil society. It has a well-integrated political and cultural elite, that despite party political differences and religious,

locational and cultural variation, share broad social assumptions. The result is a highly productive and culturally appreciative population, unusually self-aware of its historical experience and heritage and committed to active citizenship. The University is a decisive node in these forms of community engagement: the challenge is to widen its reach to bring the young, the marginal, the remote, the unrepresented and the disadvantaged into a more diverse civil and cultural mix. This theme is not so much about increasing the wealth of the population (though it does that as well), but mobilising its potential capacity to further investments and enhance its already strong 'cultural capital'.

The theme addresses questions of:

I. How do we use new techniques and audiences to excite greater cultural engagement?

II. How do we understand, protect, compare, interpret and connect to our unique cultural heritage?

III. How can public policy widen and deepen applied citizenship?

IV. How do we build stronger communities?

BETTER HEALTH

Globally, we are facing a crisis in health care. An ageing population needs to be serviced by increasing care that consumes a growing proportion of Gross Domestic Product. *Continued page 12*



Where the art is: Left, an installation piece by Professor Dorita Hannah, of Interdisciplinary Architecture, Art and Design; above, seaweed PhD candidate Daniela Farias.



Our existing research has local impact as well as national and international reach

We need a new approach to health: predictive, personalised, preventative and participatory. New technologies bring the promise of affordable diagnostics, personalised health data and the deciphering of billions of data points. We need approaches to health and models of working that deliver convenient and affordable health services, coherent value networks and regulatory standards that empower individuals and thereby facilitate system change.

The University of Tasmania has significant research advantages: the unique Tasmanian population and environment; and opportunities to work closely with communities, health service providers, and policy makers. Our existing research has local impact as well as national and international reach. Tasmania's rich genealogical resources have made possible the identification of genetic causes of blood, prostate and endocrine organ cancers, eye diseases and multiple sclerosis. The higher-than average incidence of Sudden Infant Death Syndrome in Tasmania led to research confirming the link with babies' sleeping position and a decline in Sudden Infant Death Syndrome.

Tasmanians are generally in poorer health and older than other Australians. We require a multi-disciplinary partnership-based research approach that focuses on prevention, treatments, policy and systems. In many respects, Tasmania is at the forefront in facing the challenges of an ageing population with multiple chronic medical conditions in an environment of relative socio-demographic disadvantage. It is an ideal environment for developing and evaluating innovations to improve health and the health system.

Key questions to be addressed include:

- I.** How do we better understand and promote wellbeing within our population?
- II.** How can we better deliver affordable, accessible, equitable, quality and person-centric health systems?

MARINE, ANTARCTIC AND MARITIME

Australia is a marine nation – an island continent with the world's third largest ocean territory. This marine estate is much larger than the terrestrial land mass and more than 70 per cent of our sovereign territory lies beneath the ocean. Australia extracts substantial economic benefit from its marine territory, estimated at \$44 billion a year and growing.

We have a variable climate that is strongly influenced by the surrounding oceans. Our population is concentrated in temperate coastal regions, with almost 90 per cent of inhabitants living in major coastal cities and surrounding inner-regional areas. We are the custodians of marine biodiversity assets with globally significant conservation value, which unlike any other country, range from the high tropics to Antarctica.

Tasmania is the island state of this marine nation. We have made a strong contribution in creating and training participants in a long seafaring tradition. A place of outstanding natural beauty, it has a small population and a regional economy that is challenged by the impacts of globalisation. Tasmania is an ideal laboratory in which to study the oceans' climates and climate variability, marine biodiversity and ecosystems, sustainable marine industries, and maritime transport – all of which have

local, national and global significance. Added to this, Tasmania is Australia's gateway to Antarctica and aspires to become a major hub for growing international interest in the Antarctic continent. It has a unique role in marine and maritime research, training and technology. As the southern skies have provided Australian astronomers with a natural advantage that attracts tremendous international collaboration, the Southern Ocean provides this for our marine, maritime and Antarctic scientists into the future.

Our University is uniquely placed to answer fundamental questions such as:

- I.** How do we sustainably use the ocean while protecting the marine environment and its ecosystems?
- II.** How can we understand, predict and adapt to oceanic and cryospheric change?
- III.** How can we contribute to the creation of a transformational ocean future?

DATA, KNOWLEDGE AND DECISIONS

From particle physics, through digital humanities, environmental monitoring, biosciences and health, to business and finance, the extraction and interpretation of information from unparalleled quantities of data is now a fundamental part of all enquiry. To date, this problem has been separated from the science it enables and the policy it informs, yet it is at this intersection of disciplines that many new discoveries are most likely to happen. To continuously improve the reputation of the University, as a world-leading research institution, we need to develop powerful expertise in a core group of fundamental subjects, including analytical science, mathematics, statistics, computer and information science and a suite of related



Lay of the land: Dr James Hills, from the Tasmanian Institute of Agriculture (TIA), is using sensor technology to improve agricultural outcomes.

frontier technologies such as chemical and environmental sensing, large-scale sensor networks, data management and data science.

This theme will also need to develop complementary research capability in methods across the social and economic sciences, as well as the humanities and creative arts that can connect these data and analytical models to drive evidence based policy development while reshaping cultural research. Research in the Data, Knowledge and Decisions theme area will be targeted to unlock pathways to new discoveries across the University and, in particular, the theme areas; to stimulate the development of new technologies, methods and tools; and to establish Tasmania as a reference source of globally unique, high-quality, longitudinal, integrated data sets covering our social, economic, environmental and health systems.

Fundamental questions in this theme are:

I. What are the fundamental technologies,

tools and methods needed to collect, synthesise, and interpret complex real-world information?

II. How is such data integrated into evidence-based policy development and analysis, and how does that stimulate the development of new models and methods in the social, economic and human sciences?

OUR INSTITUTES AND CENTRES

We welcome individual and team excellence, disciplinary and interdisciplinary capacity, leading theoreticians and applied researchers, but we privilege collaboration, co-operation, and research outcomes with an impact that produces new knowledge with both intellectual and social impact. It is the mission of our research themes, largely organised around institutes and centres, to provide leadership in realising these ambitions.

Our specialist University Research Institutes, the Menzies Institute for Medical Research (MIMR) and the Institute for Marine and Antarctic Studies (IMAS), are a conscious investment by

the University in two of our identified thematic areas. Through MIMR and IMAS we have made a commitment to achieving both national and international research leadership and, by virtue of the scale and focus of this commitment, we support them to build a global reputation for their research excellence.

These institutes bring powerful interdisciplinary research teams, with strong national and international profiles, together and provide them with powerful research infrastructure. In their partnerships, we are building research ecosystems that rival international competitors. These partnerships and the support that they attract from public and private investors are building research precincts, gateways and clusters.

As we evolve the themes we now place emphasis on multi-disciplinary collaboration and, in so doing, give preference to virtual, or distributed, models of research concentrations to build the necessary scale to address complex problems. This ensures the existing fabric of the disciplines, schools and faculties are maintained and enhanced and provides the University with the opportunity to extend this thematic focus to the entire University.

CORE STRATEGIC OBJECTIVES

OBJECTIVE	DESCRIPTION
1.1 Develop a culture of individual research excellence	Recognise, encourage and develop our researchers through appropriate support systems and clearly defined expectations.
1.2 Cement the University of Tasmania's reputation as a distinctive world-class research-intensive University	Through systems of research concentrations (groups, centres and institutes) at school, faculty and university level ensure the best and most supportive research environment.
1.3 Establish and embed thematic research programs	Place research themes at the centre of the University of Tasmania's research and communicate these research concentrations nationally and internationally as a defining characteristic of the University of Tasmania.
1.4 Maintain and enhance national leadership in specialist areas	Maximise research effort in new, major, externally funded research centres at the University of Tasmania through innovative research and consolidate the thematic alignment of existing centres.
1.5 Realise the social and economic benefit of our research	Through partnerships with industry and our community we both source our research questions and demonstrate tangible impact. A key to this is knowledge and technology transfer.



2. Our People

The University of Tasmania aspires to deliver world-class research programs and postgraduate supervision. To achieve this we need world-class researchers working with ambitious honours and postgraduate students supported by dedicated, well-trained professional staff.

Our researchers will be innovative and dynamic, and address pressing research problems that impact society in order that our research will contribute to individual and social betterment.

Through partnerships – locally, nationally, and internationally – we will extend the capabilities and capacity of our research community. Partnerships will also provide us with real-world challenges that allow us to innovate, inform policy and demonstrate real social and economic impact.

BUILDING OUR RESEARCH COMMUNITY

We aim to achieve a balanced research workforce, with innovative advanced undergraduate and doctoral programs mixing students, candidates, postdoctoral fellows and early career researchers, nationally eminent mid-career researchers and globally acknowledged and cited research leaders. Recruitment, probation and promotion processes will be guided by internationally benchmarked standards. In accordance with our values, the University is striving to recruit and sustain a diverse research workforce with a disciplinary, gender, ethnic and cultural mix. This research workforce will share strong commitments to the highest research standards, ethical practices, and a collegial and collaborative outlook. We will develop and inculcate these values by example.

Our systems will provide clear support for early career researchers and encourage the development of research fellowships. We will seek to attract world-class researchers at all levels and recognise those world-class researchers who are already part of

our community. Academic staff will be supported and given opportunities for research development to achieve the clear academic performance expectation we so strongly advocate.

Our research community will be enriched through a program of research visitors on short and medium-term visits, supported through a structured and well-supported program. We will also build a global community of researchers through the establishment of summer schools, linked to our research themes, which will bring the best and brightest to Tasmania. We need to measure and evaluate the capacities and qualities of our researchers and set appropriate and periodic evaluation of their performance. These performance targets include individual Research Performance Expectations and Discipline Evaluation, as well as applications and successes in competitive research grants and international ranking systems. We expect research only and teaching/ research academics to sustain a level of performance appropriate to a research

intensive highly ranked university. These comparative national and international performance targets will be especially important for researchers involved with the five themes.

PARTNERSHIPS AND BENEFITS

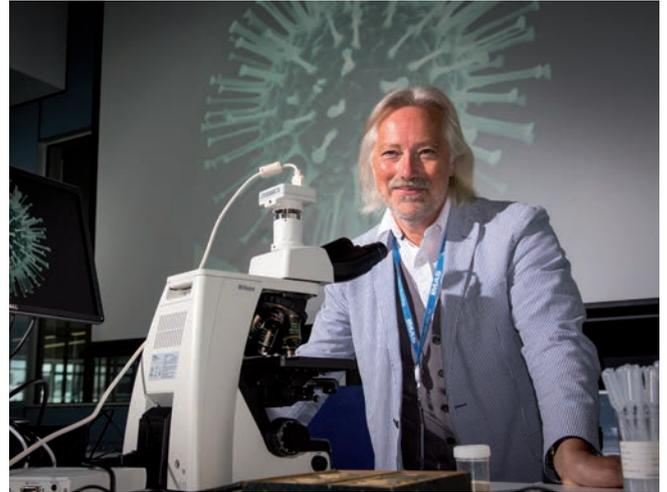
Our unique island context also affords us privileged partnerships. We have a mature relationship with our state government; together this partnership has been central to research successes, such as in agriculture and aquaculture, which are widely recognised as exemplars of research collaboration. The challenges that face the state, such as low educational attainment, health system reform, or the need to grow new knowledge-based industries, provide opportunities for us to extend this partnership and for the University to play a central role in the social development of Tasmania. Moreover, research in each of our themes will play a critical role in the economic future of our regions.

Continued page 16

Through partnerships – locally, nationally and internationally – we will extend the capabilities and capacity of our research community



World-class: Opposite page, Philip Boyd, Professor of Marine Science at the Institute for Marine and Antarctic Studies; right, Dr Jess Melbourne-Thomas; far right, Dr Jay Kocharunchitt.



The application of our basic research to community problems is an essential part of maintaining local businesses that are able to compete in national and international markets. Focused and high-quality research activity also acts as an attractor for inward investment, often led by our research students who are the next generation of community and business leaders. Through these research endeavours, we are playing a central role in the

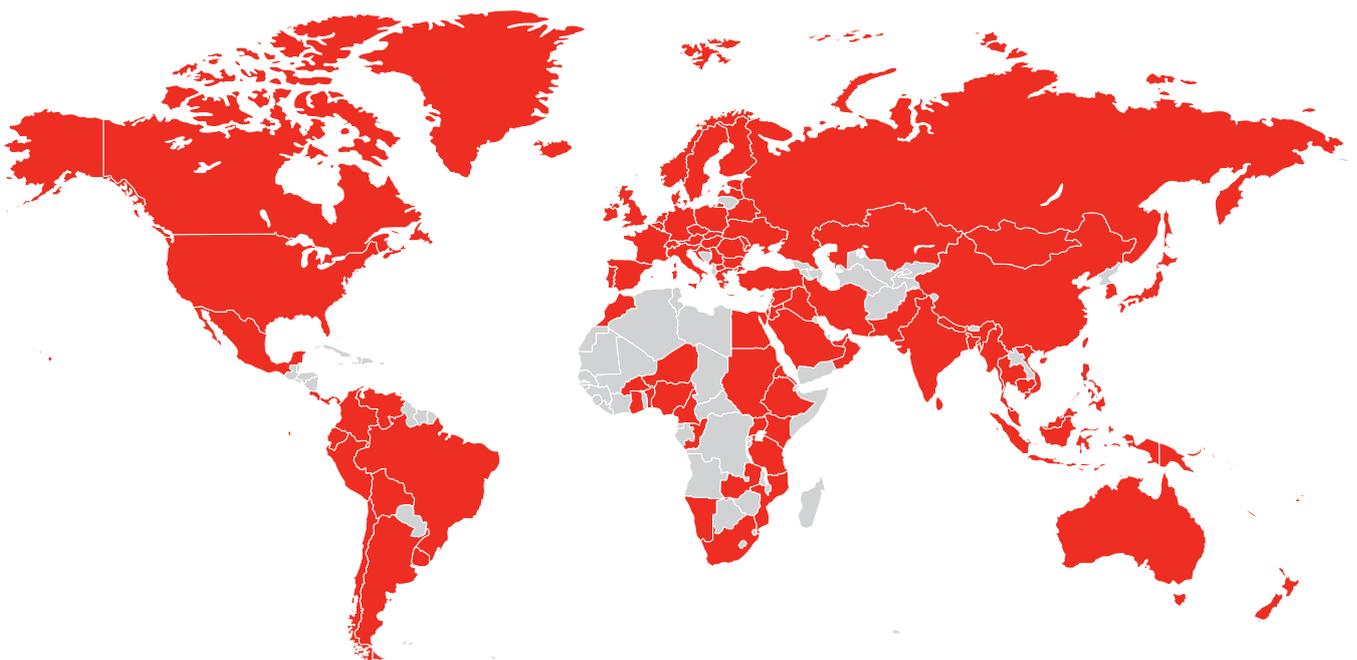
economic and workforce development for Tasmania's regions. Partnerships with national agencies, such as CSIRO, Australian Antarctic Division, Defence Science and Technology Organisation and National ICT Australia (NICTA) for example, provide our researchers with a rich intellectual environment and access to specialist facilities, extending our research capabilities. These partnerships enable us to build research collaborations and teams of significant

New ground: Partnerships with national agencies have led to University of Tasmania researchers pioneering in places never traversed before.

scale that would otherwise be beyond our reach. The University, through its research excellence, seeks to attract new partnerships to Tasmania to expand both the intellectual and economic capital of the state. Our research excellence and character should be the magnet that attracts new partnerships to Tasmania.

Nationally and internationally we need to build partnerships to provide balance and which are complementary to our research specialisations. We will

Global reach: Today, the University of Tasmania collaborates with 117 countries across the globe



All corners of the globe: The University of Tasmania's international engagement encompasses more than 117 countries around the world.

■ University of Tasmania's global connections
 ■ Other countries

Learning from the best: Student Melanie Bottrill and Dr Peter McQuillan. Our mission is to match the best-prepared and motivated candidates with high-quality supervisors organised into supportive teams.

build small and genuine networks with universities that help us consolidate our research leadership, in areas such as marine, population health, climate adaptation, ecology, agriculture, or that enable us to build an international reputation in areas of growth: data science, bioinformatics, economics, creative industries, social sciences and education to name a few.

BEING GLOBALLY ENGAGED

A strong research University is characterised by extensive international engagement. Such engagement includes the range, number and quality of collaborations in research publications, grant applications and staff exchanges. Based on our thematic strengths, the University will increase its involvement in international research partnerships and networks with selected high-quality research centres, institutes and universities. Such partnerships will enhance the connectivity between our researchers and themes with other leading international research programs.

We will place high value on nurturing the collaborative networks, particularly international networks, of our researchers. The University is investing significantly in global engagement and our activities will be closely co-ordinated with its strategies pursued through the initiatives of the Office of the Pro Vice-Chancellor (Global Engagement).

Our agenda will be shaped by strategies that address the issues of the Asian Century, our evolving research themes, and the importance of international reputation associated with building strong strategic research themes with selected global partners. Similar concerns will influence our strategies to build the number of international postgraduate (HDR) students (increasingly with cotutelle and conjoint arrangements), postdoctoral fellows and the recruitment of leading international researchers linked to targeted disciplines, institutes, universities and countries. Benchmarks and targets to evaluate the effectiveness of strategies to enhance global engagement are being developed.

Our objective is to progressively



Our research excellence and character should be the magnet that attracts new partnerships

increase the number of researchers and research groupings that perform at world-class levels, as measured by international performance benchmarks, and to integrate our research themes with core global players. The outcome will be strong, focused and strategic international research partnerships. This strategy reinforces our view that partnerships and collaboration with global leaders will enhance our thematic strengths thereby improving our global rankings and, simultaneously, addressing practical, social and economic challenges.

STUDENT EXPERIENCE: RESEARCH-TEACHING NEXUS

Sustaining and maintaining research excellence is what distinguishes universities from institutions that concentrate on teaching and technical training. Universities teach their undergraduate students the findings of past and current research, while preparing the 'best and brightest' for future research careers, with its teaching led and informed by active researchers. Universities closely align teaching, the undergraduate and

postgraduate experiences, with strong research performance: this is what is meant by 'maintaining the teaching/research nexus'. Universities are active in the process of recruiting, training, inspiring and graduating the next generation of researchers through its honours programs, higher degree research programs, providing additional research training and exceptional supervision. Consequently, the leading research-intensive universities place great emphasis on recruiting academics distinguished by their research and scholarly credentials, and then working to cultivate and motivate their developing research careers.

Universities aspire to maintain a wide range of teaching and supervisor capabilities and therefore a breadth of active research across many disciplinary and interdisciplinary fields. Research-intensive universities, like the University of Tasmania, also concentrate their global research strengths in greater depth into selected themes. Over the next two years, we anticipate the development of a graduate school model that concentrates a strong focus of

Continued page 18

Rock solid: Dr Jo Whittaker's research interests are in the field of plate tectonics, geophysics and geology specifically looking at the formation and evolution of continental margins and oceanic crust.



higher degree research aligned with our thematic strengths.

Research students are one of the most critical components of a vibrant research-intensive university. To attract the best students to this community of researchers we need to provide an experience that is high quality in every facet, supportive and collegial, and which both trains the next generation of researchers and prepares them for their future careers.

Our mission is to match the best-prepared and motivated candidates with high-quality supervisors organised into supportive teams. We have three sources of postgraduates: University of Tasmania graduates, national applicants and international candidates. The University of Tasmania undergraduates who reach first-class honours or equivalent should have expectations of moving into appropriate research training with adequate support. From the national pool of well-trained and competitive students we seek to attract a similarly talented cohort of postgraduates. We also aim to attract the best international

postgraduate students from leading universities. The provision of excellent and innovative supervisory teams, enhanced candidate management support and focused research skills development will improve the quality of our programs and result in competitive completion times and the generation of highly competitive and sought after postgraduates.

The majority of research students take up careers outside of academia and as such we must consider how best to reconceptualise the research training we provide. Alongside the critical debate

about the structure, form and nature of the research degree, and the implicit need to reinvigorate the honours and masters pathways, we must consider the research student experience. We need to provide both the highest quality and most relevant academic experience and build a cohesive community of research students.

With that in mind, we will look to develop a graduate student experience that, perhaps linked to specialist graduate accommodation, provides a natural community for our students, independent of discipline.

CORE STRATEGIC OBJECTIVES

OBJECTIVE	DESCRIPTION
2.1 Develop and support individual excellence	Support individual disciplinary excellence through systems of staff development, mentoring and performance standards and by access to research support schemes on a competitive basis.
2.2 Development of our international profile and partnerships	Build international networks of universities and research organisations linked specifically to our themes including shared research student training.
2.3 A distinctive research student experience from honours to postdoctoral	Deliver a distinctive research student experience considering the needs of honours students, PhD students and post-doctoral years. Development of both the academic and social environment needed to support a diverse student population.
2.4 Attract, support and retain research leaders	Invest in world-class researchers and research leaders, with targeted investment in areas of identified and thematic importance.
2.5 Attract, develop and support early career researchers	Increase fellowships supported by competitive grants from industry, governments and the community. Build a network of research fellows, using attraction and retention packages and enhancing career opportunities.
2.6 Extend our reach and capacity through partnerships	Partnerships with research providers to extend the range or depth of our research capacity to address problems of scale.
2.7 Recognise and develop the professional research support staff	Provision of professional and leadership development for research support staff.

3. Our Infrastructure

Our research infrastructure provides the necessary tools and facilities to enable our researchers to address fundamental questions.

This infrastructure naturally includes specialist equipment but extends beyond that to encompass the physical environment, laboratory and office space, and the necessary computational and information (both digital and physical) resources, all of which must be supported by skilled technical and professional staff who understand the processes of research.

Not only is the provision of a quality research environment and infrastructure essential to the delivery of the highest quality outcomes, it is also increasingly a significant factor in attracting and retaining the best researchers and research students. Additionally, as a diverse multi-campus university, we must carefully structure our physical and digital infrastructure in a manner that is both sustainable and relevant, into the future and aligned with the needs of our research community in each of our geographic locations.

CENTRAL FACILITIES

Through the Central Science Laboratory, the University has demonstrated the cost-effectiveness and benefit of co-ordinating some of its major research infrastructure to bring together specialist equipment and technical staff to provide infrastructure no single school or faculty could contemplate. Similar benefits have been realised through co-ordinating biological research facilities centrally. In both cases, the equipment and the trained professional and academic staff provide a level of support to our researchers that fundamentally enables their research. Such centralised and linked infrastructure facilities are viewed as the best way to support the University research community in a cost-effective way through a strategic research investment plan linked to the University's capital investment plans. Key to this research strategy is the



Welcoming: A quality environment and infrastructure are key factors in attracting and retaining the best researchers and research students.

co-ordination and establishment of thematic research integrated, where possible, around geographical precincts that concentrate both the core staff and the essential infrastructure needed to deliver their research programs. We will look to the refinement and extension of the centralised infrastructure model to support this focusing of our research endeavour.

The library remains a central resource for the active researcher. The library master planning is deeply linked to and is

a key part of the infrastructure planning of the University. The physical assets now need to be enhanced by digital repositories and infrastructures that let us access a global information resource but also allow us to collect, catalogue and analyse a vast array of research data.

We are identifying the infrastructure needs of our researchers, in particular the requirements required to support our research themes (and the considerable array of supporting disciplines). As a consequence we are rebalancing the delivery of central and distributed resources, investigating better ways to generate sustainable costing and investment strategies, and undertaking this in a transparent policy and committee environment.

We must carefully structure our physical and digital infrastructure in a manner that is both sustainable and relevant



Specialist areas: The University recognises that it must provide concentrations of specialist equipment at its four primary locations – Hobart, Launceston, Burnie and Sydney.

A MULTI-CAMPUS UNIVERSITY

The University of Tasmania is situated in four primary locations (Hobart, Launceston, Burnie and Sydney). Each campus has distinct capacities and capabilities. We need to support and develop research endeavours across the entire University in a sustainable and responsible way. Each region has established or emerging research concentrations. Campus infrastructure plans for the southern, northern and Sydney campuses will provide for the development of both research capacities at these campuses as well as developing clear research

identities in each case. The fundamental emphasis will be on developing critical mass for research in these locations, without unnecessary duplication of facilities and researchers, and consolidating their contribution to the University’s central research mission. These concentrations of research may underpin centres and initiatives in areas such as allied health, creative industries, IT and food security.

INFRASTRUCTURE PLANNING AND PRECINCTS

The University recognises that it must provide concentrations of specialist

equipment and the necessary skills to best support its student and staff in the delivery of its teaching mission. The University is considering coalescing around concentrations of activity on its campuses. Aligning this process, and the associated institutional capital and space planning, to develop research precincts that capture not only the teaching mission but also provide the specialist facilities and support staff to enable world-class disciplinary and thematic research, is central to this research infrastructure investment strategy.

CORE STRATEGIC OBJECTIVES

OBJECTIVE	DESCRIPTION
3.1 Integrated University capital and research infrastructure planning	Closer alignment of University capital and campus planning with researcher and research infrastructure needs.
3.2 Establishment of identified research precincts across campuses that concentrate infrastructure and capability	The establishment of thematically aligned research precincts linked with regional, campus based, planning that parallels the university precincts across all our campuses.
3.3 Comprehensive provisioning of, and access to, physical and digital repositories	In parallel to the development of our library master plan, and recognising the increasing centrality of digital and computing resources, develop a comprehensive digital and computing resources infrastructure and plan.

4. Our Systems

The systems and structures the University provides must support and enable its researchers.

Such structures include the administrative and operational support for the research community, the provision of appropriate governance and accountability, budgetary frameworks, and reporting and communications. When implemented well, such structures free researchers from administration so they can focus on the research endeavour. Our simple aspiration is to provide the most professional, responsive and collegial support environment possible to our research community across our campuses.

RESEARCH OPERATIONS AND SUPPORT

It is essential that our colleagues be afforded the most knowledgeable, timely, and professional support possible. This support needs to extend across the entire research endeavour including the recruiting management and graduation of research students, the application for and subsequent management and reporting associated with research grants, and all the associated ethics, integrity, financial and administrative processes that support research.

The Office of Research Services seeks to provide high-level administrative and strategic research support in the most professional, efficient and effective manner possible. And particularly to work in partnership with academic and professional staff to ensure that the support provided facilitates and recognises research excellence. Through the establishment of the hub model the University has geographically located core services, including research provision, within the academic community. These research services are co-ordinated and monitored by the the Office of Research Services. With this first stage successfully completed, research services will now focus on the places we can reduce administrative overhead and where we can enhance the capacity of researchers to undertake their research.

BUSINESS DEVELOPMENT AND TECHNOLOGY TRANSFER

Recognising that the University (as part of its mission to create impacts at local,

national and international levels) will increasingly be creating and growing external partnerships, it has brought the Business Development and Technology Transfer function in-house. This unit now provides the advice the research community and central university requires to manage and optimise its interests in the uptake of our intellectual property. The same function will also be responsible for providing the academic and HDR community with on-going professional development to augment their understanding of technology transfer and commercialisation processes. Business Development and Technology Transfer will implement systems and processes that will enable the University to effectively manage its pipeline of opportunities and the commercial relationships that emerge from them.

COMMUNICATION

Effective communications, both internal and external, are essential if we are to support our researchers and encourage the sorts of multidisciplinary collaborations we require for our themes. Internally, the Research Division will be providing a much wider array of data, information and analysis to researchers, schools, faculties and institutes. Some of this work has already happened in 2013,

but much more is still to be gained in the collection, dissemination and analysis of the information that informs research planning. Additionally, an improved communications strategy, both within and outside the University, is essential. Our objective is to inform, educate and engage better with our stakeholders and the University community about our research plans, our successes, performances and impressive achievements.

RESEARCH GOVERNANCE

Academic leadership, debate and oversight are at the core of ensuring the excellence of our research and in providing the best context for allocation of resources. The establishment of appropriate academic structures, both in faculties/institutes and across the University more broadly, is central to our strategy (Figure 4).

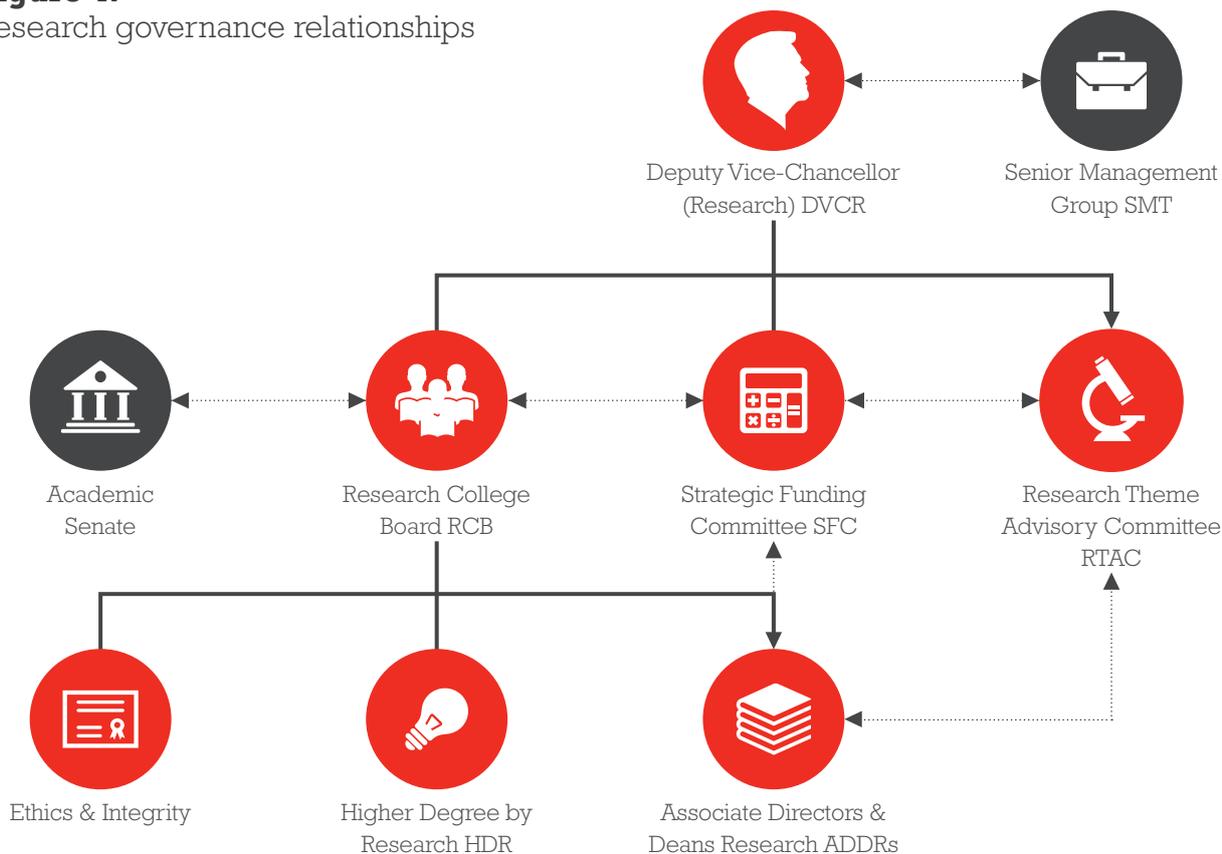
The faculties and institutes hold the primary responsibility for their research performance. Through the provision of detailed planning and performance data, they are now able to understand and articulate their strategic directions and supporting plans.

The governance structures set out here are developed to enable and support the realisation of the faculty and institute plans. *Continued page 22*



Eye on the sky: Dr Andrew Cole at the Greenhill Observatory at Bisdee Tier, Spring Hill in the Southern Midlands.

Figure 4:
Research governance relationships



Academic leadership, debate and oversight are at the core of ensuring the excellence of our research and in providing the best context for allocation of resources

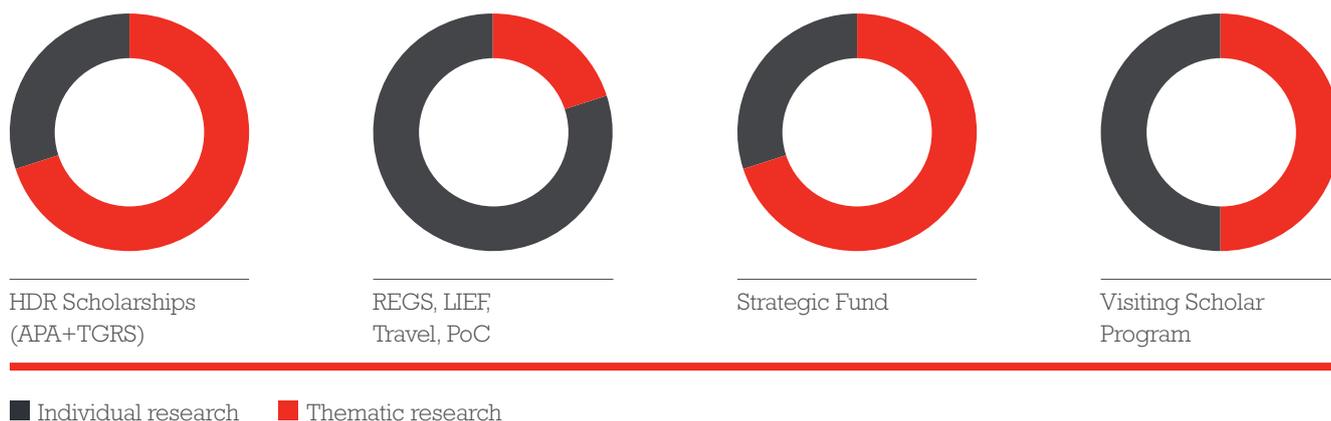
Through the Associate Deans and Directors of Research Committee, Research College Board and Academic Senate, we will provide the necessary fora to guide the academic character and direction of the research plan. Through the Strategic Funding Committee, with Senate and Dean/Director membership, we are providing transparent processes for the allocation of strategic funds and the monitoring of their impact. Through

the establishment of an appropriate advisory committee, the research themes will be driven by, and embedded in, the academic community of the University.

A BUDGET MODEL TO PROMOTE RESEARCH

Reflecting our commitment to both individual and thematic research, the strategic research funding of the University will be used in a balanced

Figure 5:
Strategic funding distribution



Food focus: Associate Professor Meixue Zhou. The University's Tasmanian Institute of Agriculture is engaged with international partners to support sustainable food supply in the future.

manner to support individual, discipline and regional research and to drive the rapid evolution of the five multi-disciplinary themes. These funds will be competitively allocated and reviewed annually to complement and enhance the research investments of our faculties and institutes as set out in their annual research plans. Figure 5 provides an indicative allocation of these strategic funds to demonstrate this intent; the precise split will be reported on an annual basis.

The University of Tasmania's budget model has undergone recent changes to increase transparency and to more closely align income, cost attribution, contribution margins and expenditure responsibilities.

The magnitude of the changes to the budget concepts and the consequent changes to transparency (and its twin – accountability) are hard to overestimate. Core areas of research support, such as infrastructure, scholarships and various initiatives will be captured in an explicit manner within the budget and disbursed in line with university and faculty/institute plans.

The new funding model simultaneously recognises that research needs adequate time: the 40 per cent research time nominally



We aim to bring the researchers, infrastructure and support together to advance the overall research performance

available for all academic researchers should be 'protected', used productively and thereby generate appropriate and benchmarked output. A research-intensive university with a strong teaching-research nexus requires productive, high quality and internationally recognised research across the spectrum of its selected activities. We aim to bring the researchers, infrastructure and support together to advance the overall research

performance. And our research themes will require evidence of advanced research performance and international standing.

An added but necessary advantage of the new budget model is greater transparency and accountability in the investment the University makes in its research centres and institutes and, in the future, into its research themes providing the foundation for us to build a sustainable research endeavour.

CORE STRATEGIC OBJECTIVES

OBJECTIVE	DESCRIPTION
4.1 Open, communicative and responsive research governance	Improved research governance and accountability with explicit relationships to the faculties, institutes, SMT and Academic Senate.
4.2 Provide exemplary professional support services	Through the establishment of the hubs and the restructuring of research services and the Research Division the University has repositioned from research administration to research support. Continued focus on effective mechanisms to support research excellence across the University.
4.3 Appropriate budget model that encourages and supports research	Development and refinement of levy model for strategic research funding, alongside faculty and institute research funding plans, to drive research activity.
4.4 Communicate our research plans, achievements and performance	Through an integrated communications plan ensure the University community is kept informed and that the wider stakeholder groups have the necessary information to further our research ambitions. This includes a specific focus on a significantly improved digital presence for our researchers and their research.



Caring nature: Carey Mather from the School of Nursing and Midwifery is researching emerging technologies in nursing.

Concluding Statement

The University of Tasmania has a long and distinguished history of research innovation and excellence.

The University of Tasmania has a long and distinguished history of research innovation and excellence. Our research strengths reflect University-wide characteristics: global in scope, with distinct Tasmanian specialisations.

Over the next five years (2014-18), the University will be further strengthening its local, national and international research presence. This will be achieved through the development of a vibrant research community founded in our individual and disciplinary excellence and a strong emphasis on five multi-disciplinary

thematic programs. Our community will be supported by world-class research infrastructure and the development of a research student experience that is supportive and stimulating.

We are building an innovative, research-intensive university that benefits Tasmania, while addressing pressing global research challenges.

This strategic research plan for the University of Tasmania indicates how these broad research imperatives are being realised in our unique environment and how we see general

research principles being applied to specific challenges and purposes. The University's overall strategic priorities for the next decade have been identified in *Open to Talent*. This strategic research plan builds on the research priorities introduced there and provides greater detail about their character. It will be supported by an implementation framework that will be reviewed and updated annually. This research plan's aim is to strengthen and give credence to our stated aim of being a world-class research university.

Into the blue: Dr Jemina Stuart-Smith explores the ocean for the Reef Life Survey program – a project linking volunteer divers, scientists and managers in marine research and conservation.



How you can get involved.

Research Collaboration and Business Development Opportunities

The University of Tasmania is committed to world-class research that addresses global challenges. We have outstanding links with universities, research institutes and industry across the world. We are open to collaboration and welcome your inquiry to discuss opportunities.

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