



University of Otago

Te Whare Wānanga o Otāgo

A research-led university with an international reputation for excellence

TEC Investment Plan 2013-2015

Approved by the University Council, 9 October 2012

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1.0 Introduction

This Investment Plan for 2013 to 2015 has been prepared by the University of Otago in accordance with the requirements of the Tertiary Education Commission (TEC). Its primary purposes are to:

- present a summary of the University's planning context, including its contribution to the outcomes sought by Government for tertiary education, as set out in the *Tertiary Education Strategy 2010-2015* and elsewhere;
- outline the activities the University will undertake and services it will provide to contribute to these outcomes;
- indicate how the University will measure its contribution to these outcomes.

This Investment Plan is structured in accordance with the requirements of the gazette notice Education (Proposed Investment Plans: Requirements, Content, Submission and Assessment) Notice, and the provisions of the TEC's Plan Guidance.

It is important to note that the development of this Investment Plan has occurred in parallel with a review of the University's overall strategic direction. This review will see the University's current strategic direction document – *Strategic Direction to 2012* – replaced by *Strategic Direction to 2020*. While the implications of this change are covered in more detail below, it should be stressed at the outset that *Strategic Direction to 2020* will be an evolution of the current direction, that changes made will mainly give greater emphasis to particular aspects of the current strategy, and that these changes will strengthen rather than diminish the alignment between the University's strategic direction and the outcomes Government is seeking from the tertiary sector.

2.0 Plan Context

2.1 The University of Otago: Special Character, Mission and Role in the Sector

A tradition of innovation and excellence in research and research-led teaching across a range of traditional, professional and applied programmes define New Zealand's first university, the University of Otago. While judging itself in an international context, Otago embraces a national role and regional responsibilities that build on the following dimensions of the University:

- a research-led culture which, in turn, underpins excellence in teaching and professional training;
- a broad curriculum that encompasses traditional scholarship and new knowledge;
- a unique concentration of special professional schools, with particular concentrations of strength relative to other New Zealand universities in the sciences, health sciences and the humanities;
- an outstanding campus learning environment in Dunedin, health sciences campuses in Wellington and Christchurch, and specialist facilities in Auckland and Invercargill;
- a very high proportion of students who come from outside the University's traditional home area of Otago and Southland;
- the unique transformative effect that living and studying at an overwhelmingly residential University has on Otago's students as they progress through study and emerge as well-rounded, confident and independent work-ready graduates.

Otago's standing as a leading research university continues to be confirmed by its ongoing success in competitive research funding rounds¹ and by independent assessments which have judged it to be New Zealand's most research-intensive university², and the country's top-ranked university for research quality³. We have already shown a tangible commitment to increasing our focus on the application of knowledge, with the value and extent of our activities in this developing area gaining increasing recognition⁴.

The Tertiary Education Commission's annual Educational Performance Indicators confirm the quality of Otago's teaching outcomes, consistently ranking Otago as first or second amongst universities for qualification and course completion, and first for student retention. Similarly high levels of performance in respect of Māori students are a particular source of pride for Otago as we seek to contribute ever more effectively to national imperatives in this area.

Internationally, Otago is consistently rated as one of the world's top universities in the major independent rankings. Within those rankings it is clearly established as one of New Zealand's two best universities overall⁵.

The vision, mission, and core values of the University are outlined in Attachment A and the scope and breadth of its activities are highlighted in Attachment B.

¹ Otago has been the top-performing institution in the annual Marsden research funding round for each of the past seven years. Otago has also ranked first in the Health Research Council funding rounds for each of the past three years. Otago was also the top-performing university in the Ministry of Business, Innovation & Employment's 2012 Science Investment Round.

² Ministry of Research, Science and Technology. Research and Development in New Zealand. (Wellington, 2006).

³ Tertiary Education Commission. PBRF Quality Evaluation 2006. (Wellington, 2007).

⁴ For example, Otago was reported to be "well engaged with business", with external subcontracting [deploying our science expertise for commercial purposes] "well above the mean" for New Zealand universities. Ministry of Science and Innovation, University of Otago 2010/11 Summary (Wellington, May 2012).

⁵ Otago consistently places as one of only two New Zealand universities inside the top 150 in the annual QS international rankings and inside the top 300 in the Shanghai Jiao Tong rankings and Times Higher rankings.

2.2 The Changing Environment

A number of assumptions, many of which relate to Government priorities as outlined in the *Tertiary Education Strategy 2010-2015*, shape the University's strategic thinking and its outlook. These may be summarised as follows:

Area	Assumptions
Government	<ul style="list-style-type: none"> • Government will continue to support the distinctive national and international role of New Zealand's leading universities. • There will be a strong focus on deploying university teaching and research to support the Government's development and transformation priorities. • Significant changes in the tertiary sector will occur over the period of this Plan in the areas of funding and differentiation, both between the universities, and between universities as a group and other types of tertiary institution.
Funding	<ul style="list-style-type: none"> • A focus on fiscal constraint will continue, limiting the overall level of Government funding for tertiary education, and generating intense competition for that funding. • Enrolments will continue to determine the largest single source of funding, but moves to allocate a greater proportion of Government funding on the basis of the quality of provision, outcomes and outputs may occur, or be signalled. • Challenges will continue to arise as a result of the limited national provision of contestable research grants and other forms of external research funding. • Universities will be expected to further diversify their funding streams, with a particular focus on generating additional revenue through increasing international student enrolments and applying research and expertise for commercial gain. • Constraints on Government funding of the health sector, and especially the District Health Boards, will continue to impact on the medical and health sciences education provided by Otago.
Responsiveness to Key Stakeholders and Partners	<ul style="list-style-type: none"> • The priority student stakeholders from a Government perspective will continue to be under-25 year olds, and Māori and Pacific peoples in degree-level study. • Government, business and industry stakeholders will be seeking graduates who have acquired skills and attributes that can support economic development and address the environmental and social challenges facing the nation. • Enhanced linkages among universities, business and industry will be a key point of focus both as part of the drive to make university research and innovation more directly connected to economic transformation, and to ensure that graduates are equipped with the skills and attributes required by employers.
Efficiency and Competitiveness	<ul style="list-style-type: none"> • Universities operate in a global marketplace and must be internationally engaged, competitive and excellent. • Universities will face continual pressure to ensure their international competitiveness in academic staff remuneration, as well as competitive remuneration for general staff. • Pressure will remain on universities to increase both teaching and research performance and to pursue efficiency gains in the provision of services.
Demographics, Participation and Achievement	<ul style="list-style-type: none"> • Labour market effects and demographics will influence softer enrolment demand for tertiary study. • Because reputation will be a key to maintaining market share in this environment, high-quality institutions will continue to become more selective in their recruitment, and more focused on student achievement as a means of differentiation. • Due to the low proportions of Māori and Pacific students leaving school with high levels of attainment, there will be particular challenges associated with seeking to increase Māori and Pacific student recruitment and achievement. • The new University Entrance standard which comes into effect for 2014 has the potential to reduce the number of school leavers who meet the requirements to

	<p>proceed to university study, but institutions that are already selective in their recruitment will be relatively unaffected by this.</p> <ul style="list-style-type: none"> • The Government's Better Public Service targets around boosting skills and employment may challenge current policy settings around student participation and achievement.
Global Connectivity	<ul style="list-style-type: none"> • New Zealand universities that wish to maintain international standing will need to sustain fruitful alliances and strategic relationships with overseas partners and be internationally competitive in research. • Key stakeholders, including students, will demand learning experiences that incorporate international perspectives and offer opportunities for international interchange. • International economic uncertainty and increased competition from universities around the world facing tight financial circumstances will make it challenging to recruit increased numbers of international students. • Offshore providers will become increasingly active in offering education to New Zealand students (including online).

2.3 University of Otago Strategic Direction

Otago has a clear strategic focus which follows from its vision as **a research-led University with an international reputation for excellence**, and a mission which is anchored in its core institutional values.

Since 2006 this focus has been articulated in its high-level strategic document *Strategic Direction to 2012*. Over the past seven years, *Strategic Direction to 2012* has provided a framework for Otago's continued development as a research-intensive and predominantly campus-based university with enhanced national and international linkages and a focus on high-quality research and teaching outcomes. This direction has been well aligned with the Government's strategic priorities for universities.

The previous Investment Plan signalled an expectation of a high level of continuity between the direction outlined in *Strategic Direction to 2012* and the direction that will be articulated in its successor. This expectation has been confirmed by the strategic review and consultation undertaken as the initial steps of the development of *Strategic Direction to 2020*. Within this evolutionary approach there will, though, be some new and updated points of emphasis.

On this basis it is expected that:

- the vision for Otago will remain unchanged;
- the mission will be subject to a very minor alteration to highlight the University's commitment to the application of its knowledge and expertise;
- the core values will be extended to allow a more comprehensive articulation of the University's commitment to Treaty partnership, and to describe in more detail its commitment to collaboration and partnership in a non-Treaty context⁶.
- the ways in which Otago will advance this vision will be outlined in strategic imperatives, each of which addresses an area that is vital to the future of the University.
- these strategic imperatives (currently six) will remain fundamentally the same, except that one imperative will be split into two to allow a greater focus on particular areas the University wishes to give additional attention to over the coming years.

⁶ Including collaboration and partnership with compatible research, education, health and commercial organisations, relevant Government agencies and local bodies, and with the community more generally.

The most important of the areas that will receive a greater emphasis in Otago's updated strategic direction are as follows:

- a greater focus on applying our research for social and environmental well-being and for commercial and economic benefit to New Zealand and the rest of the world;
- supporting not only the academic but the social and cultural development of our students so that they become outstanding national and international citizens as well as the scholars of the future;
- further work on developing effective transition pathways for Māori and Pacific students into tertiary study; and
- enhanced emphasis on sustainability (encompassing both what we do in this regard as a university, and using our research expertise to help solve national and international challenges in this area).

The following table presents the seven imperatives around which *Strategic Direction to 2020* is currently being organised, and summarises the University's approach in responding to them.

Imperatives	Response
Research Excellence	Otago continues to take decisive steps to enhance its research culture and capacity, building on existing strengths. A particular focus will be increasing the application of that research, for economic/commercial benefit and to enhance social and environmental well-being and the health of New Zealanders. A further (and related) focus will be securing funding from international and non-Governmental New Zealand sources to support research.
Excellence in Teaching	Otago will further its standing as a national leader in research-led teaching. While Otago does not wish to increase its overall roll at anything but a moderate rate ⁷ , it will continue to seek increased proportions of particular types of student (notably postgraduates, high-calibre undergraduates, Māori and Pacific peoples, international students). The University has raised its international cap from 12% to 15% as part of a drive to increase international enrolments, but a balanced approach to internationalisation will be maintained.
Outstanding Campus Environments	Investment decisions will ensure that facilities at all campus sites are world-class, and are appropriate to a changing student mix and research needs. A rolling Priority Development Plan (PDP) guides these investments within the long-term vision and framework of the <i>University of Otago Campus Master Plan</i> . Substantial provision has been made in the PDP for seismic upgrades, and careful attention will be paid to maintaining the quality and character of heritage buildings and enhancing the overall aesthetic of each campus site.
Outstanding Student Experiences	Living and studying at New Zealand's only true residential university supports individual personal growth and development to an unrivalled extent; indeed, employers consistently observe that a defining characteristic of Otago graduates is their high level of personal maturity and independence. Otago is seeking to further that experience through bold initiatives that will, amongst other things, promote healthy lifestyles and harness student altruism in such a way that they will graduate ready and willing to make their mark as community-minded citizens as well as work-ready graduates.
Commitment as a Local, National and Global Citizen	Otago's wish to inculcate a greater spirit of citizenship in its students stems from its own commitment to contributing to the local, national and international good. Key points of focus for this will be: extending its flourishing partnerships with Māori to make a meaningful difference for Māori; further developing its expanding links with Pacific communities here and overseas for like purpose; leading the way in its own activities and deploying its expertise to undertake and support socially and environmentally responsible activity. Collaborative arrangements with local national and international partners will play a vital role in this, especially when they are deployed to encourage research connections that support national and international development.

⁷ The University's long-term planning forecasts are predicated on an average annual roll growth rate of 1.5%. Limiting growth to this level has proved challenging in the current economic and labour market environment, and a number of steps have been taken to achieve greater control of enrolments.

Strong External Engagement	Otago continues to place an emphasis on engaging effectively with national bodies, on building relationships with employers and industry, and on having vibrant partnerships with compatible research and teaching organisations around the world. Increasingly meaningful engagements with the communities in which Otago operates will also be sought, as well as mutually beneficial long-term relationships with alumni, all of whom have the status of lifelong members of the University.
Sustaining Capability	The need for Otago to deploy its resources – financial, physical, technological and staff – effectively to achieve its goals and maintain long-term viability are particularly important in the current fiscally constrained environment. Along with careful scrutiny of internal processes and structures, attention must be directed at the cost of external obligations. Similarly, while the further development of entrepreneurial and enterprise-based activities will assist the University in diversifying its funding base, adequate levels of Government funding and fee revenue remain both a requirement and an issue of future concern ⁸ .

As was the case with *Strategic Direction to 2012*, *Strategic Direction to 2020* will provide a focus and structure for other key strategic documents, including key whole-of-University documents such as the *Māori Strategic Framework* and the forthcoming *Pacific Strategic Framework*.

Through focusing on strategic leadership rather than highly detailed and prescriptive strategic planning, Otago will also continue to deploy its strategic imperatives as an effective framework for planning and decision-making within its constituent departments, schools and divisions. This approach, which gives different areas of the organisation considerable freedom in determining how to respond to the challenges posed by the imperatives, supports dynamic change while respecting the University’s core values of intellectual and academic freedom.

2.4 Established Alignment to Government Priorities

There has been a long-standing synergy between Government priorities for universities and the institution-specific priorities of Otago. This has been apparent throughout the current regime of Investment Plans which, coincidentally, commenced at the same time as Otago was formulating its *Strategic Direction to 2012* plan.

This synergy has enabled Otago to respond to the Tertiary Education Commission’s goals, objectives and priorities for the sector in a manner which anchors that response in the University’s own strategy. This, in turn, ensures a response that is both distinctive and strong in terms of the results it delivers and the foundation it establishes going forward.

Evidence that this approach delivers excellent results can be seen in the University’s achievements against the 17 specific performance commitments it made in the previous Investment Plan; measured against these, Otago achieved or exceeded the target for 14 of the 17 measures, including all measures relating to financial performance, and 10 of the 11 measures relating to student performance. In most cases targets were exceeded by a clear margin.

This performance against plan commitments is consistent with Otago’s strong performance against the TEC’s Educational Performance Indicators. These have Otago as the top-ranked New Zealand university for student retention in both 2010 and 2011, and first or second in both

⁸ As well as Government funding, Otago has concerns about its lack of freedom to charge appropriate domestic student fees: at present, the University has fees in some subject areas that are well below those charged elsewhere; and rather than allowing the University to close this differential, the current annual fee movement limit actually operates in a manner that increases the gap in dollar terms.

years for qualification and course completion.

The TEC should also gain confidence from the solid financial performance that has been a notable feature of the University over many years. This has seen the University consistently rated as low risk against the TEC's Financial Monitoring Framework.

These observations are relevant to the future, both because a track-record of responsiveness and responsible operation in the past is an important indicator of what to expect from Otago in the future, and because the priorities outlined for the 2013-2015 plan period represent an evolution of those of previous plan periods.

As can be seen in general terms above, and in more detailed form in section 2.5 below, the way in which the University's strategic direction is evolving for 2013 and beyond will, if anything, strengthen this alignment between institutional purpose and the Government's priorities.

2.5 Addressing Specific Plan Priorities

The Plan Guidance and associated gazetted requirements signal eight priority areas where shifts are expected over the period of this Investment Plan. Additionally, and overlapping to an extent, there are three areas identified where the TEC expects universities to focus particularly. Otago's intentions in respect of these are outlined in this section of the Plan, with the three areas of priority covered first, and in greater depth than the other areas.

2.5.1 Excellence and Distinctiveness of Institutional Mission

Government's Priorities

Excellence and distinctiveness have been identified as a high priority for universities, and expressed as a desire to see each university differentiate itself through describing, clearly and convincingly, why it should be the preferred choice of prospective students, potential donors, employees of the calibre it needs, or partner organisations.

Otago's Current Position

Excellence is at the core of Otago's vision. The key elements around which our excellence and distinctiveness are formed have been clearly articulated in our *University Charter* since 2003, and our current *Strategic Direction to 2012* since 2006. They are summarised in sections 2.1 and 2.3 above, and an updated version of the Statement of Special Character from the Charter is included as Attachment C.

A particular point to note is that Otago judges excellence in an international context. This is consistent with our position as one of the world's top universities in the major independent rankings, and within those rankings as one of New Zealand's two top universities overall.

It is pertinent to note that in the components of those international rankings that measure quality independent of size, Otago typically places first amongst New Zealand's universities and that it is the international norm for the world's best universities to be residential in nature, and often based in smaller cities rather than in a country's major metropolitan centre⁹.

⁹ A number of the top ten universities in the latest Shanghai world university rankings are located in urban areas with populations of less than 250,000. These include Stanford (in Palo Alto, population 65,000), Princeton (in Princeton, population 30,000), Cambridge (Cambridge, UK, population 123,000) and Oxford (Oxford, UK, population 165,000). Only one of the top ten (Columbia University, New York) is located in the largest city in its home country.

Otago's Focus for the Next Three Years

As explained above, Otago is currently refreshing its strategic direction, and will confirm a new lead strategic document, *Strategic Direction to 2020*, after approval of this Investment Plan. The Statement of Special Character as attached remains appropriate for the future, and the areas that will receive greater emphasis in *Strategic Direction to 2020* will increase the distinctiveness of Otago.

In particular Otago will:

- leverage the distinctive opportunities afforded by its nationally unique (and internationally rare) status as a predominantly residential 'destination university' to produce graduates who are well-rounded citizens as well as academically strong. A range of specific initiatives will support this;
- develop a stronger reputation for leadership, applying our research for the wider economic, social and environmental good. A range of specific initiatives will support this, including those outlined in section 2.5.2 below;
- become better recognised for our ability to deliver successful academic outcomes for Māori and, increasingly, Pacific students (see section 2.5.2 below) and for undertaking and applying our research expertise in support of Māori and Pacific development;
- ensure that while being responsive to Government's goal of more international students, Otago maintains an approach to internationalisation that is distinctive, and which brings benefits to all students at the University;
- include within that approach to internationalisation an ongoing focus on student exchange, on enhancing research relationships with other institutions and on supporting international progress;
- continue to work closely with professional bodies and industry/employer groups to ensure that our provision – especially in respect of professional programmes – meets their needs. Engagement with Health Workforce New Zealand and other health sector agencies and groups is particularly important due to Otago's special role in meeting national health workforce needs¹⁰.

2.5.2 Better Outcomes for Māori and Pacific Learners

Government's Priorities

This has been identified as a priority area for all tertiary institutions, with a need for innovative new approaches if the desired magnitude of change is to be achieved. Otago notes that the following key dimensions are embedded in Government's thinking:

- increasing the participation and achievement of Māori and Pacific students to be at least on a par with other students;
- engaging with whānau and iwi to support these aims in respect of Māori, and with schools and community groups to achieve these aims for both Māori and Pacific students;
- supporting teachers in the school system to deliver more effective results for Māori and Pacific students;

¹⁰ As well as Health Workforce New Zealand, Otago works particularly closely with relevant Ministry of Health directorates, iwi-based Māori health groups and a number of District Health Boards (DHBs). Our relationships with the Southern DHB (Otago-Southland), Canterbury DHB (Christchurch) and Capital and Coast DHB (Wellington) are especially important as their main hospitals operate as core teaching hospitals in conjunction with our health-sciences programmes, and many clinical staff are joint appointments between the DHB and the University.

- contributing to research around what works for Māori and Pacific learners, and supporting the dissemination of that research and the sharing of best practice.

Otago's Current Position

Otago endorses the Government's view that it is vitally important to achieve better outcomes for Māori and Pacific students. The University's own experience in this area indicates that innovative approaches, often involving partnership and/or collaboration, are a key to future success, as is careful attention to working with the school system and undertaking and disseminating research related to Māori and Pacific student performance.

Some key points based on Otago's experience in this area are as follows:

- issues with Māori and Pacific student performance at higher levels in the school system are such that increasing participation and achievement to levels on a par with other learners will take a concentrated effort over a period far longer than this Investment Plan cycle;
- attempts to increase both participation and achievement simultaneously for large numbers of students are particularly fraught¹¹;
- while the symptoms of Pacific under-representation and under-achievement may appear similar to those for Māori, the underlying drivers are quite different.

In respect of Māori, Otago works from a position of strength that has as its cornerstone a well-established Treaty partnership with Ngāi Tahu, and formal agreements with other iwi and iwi groups. Otago leads the way amongst New Zealand universities in the outcome-focus of these agreements¹². Our Māori Strategic Framework supports and coordinates developments that flow from these agreements, and from our more general commitment to advancement in this area.

Otago has grown its Māori student roll steadily over recent years, so that by 2011 Māori comprised 8.4% of our domestic students. This exceeds our performance commitment in this area. The fact that it is only slightly lower than the New Zealand university sector average is especially pleasing given the relatively low proportion of Māori in some of our key enrolment catchments.

We are especially proud of the academic success of our Māori student cohort, which is not only well above university sector average but on balance the best of any New Zealand university. High levels of Māori student achievement have been secured with careful attention to tailored student support, including a number of innovative new measures such as early intervention for those who are struggling to perform to a satisfactory level.

A particular focus of the past three years has been the piloting of a small number of new initiatives designed to enhance Māori student transition to successful university study. These are discussed in more detail below. An overview of Otago's key initiatives to support Māori appears as Attachment D. This attachment includes a summary of the mechanisms in place to support Māori student success once at Otago, including those that support progression to postgraduate study.

The number of Māori completing postgraduate qualifications at Otago has increased by 16.5%

¹¹ In particular, our experience in this area has taught us to be cautious about seeking to lift participation until achievement of those Māori and Pacific students we already have is satisfactory.

¹² Many of these agreements are very specifically focused. For example, agreements with a number of Māori health organisations provide for senior Otago dental students to provide dental care in local communities. This results in outstanding learning opportunities for the students, while meeting a pressing community need for dental care.

in the past three years, which exceeds the 10.5% increase achieved by the University overall. This success has been facilitated by a Māori Postgraduate Support Adviser, whose brief includes organising regular workshops, monthly research hui and research seminars for Otago's Māori postgraduate community¹³.

For Pacific students, a high-level Pacific Peoples Reference Group (the PPRG) advises the Vice-Chancellor on matters relating to Pacific students and Pacific issues more generally. Established in 2006, the PPRG includes prominent Otago Pacific alumni from South Auckland, Wellington, Christchurch and Dunedin. A Pacific Strategic Framework is currently in the final stages of development. The dimensions of support for Pacific peoples at Otago, including those mechanisms that support progression to postgraduate study, are outlined in Attachment E.

In respect of participation, Pacific student numbers at Otago have increased over nine of the past ten years and we have exceeded our performance commitments in this area, with Pacific students comprising 3.3% of the domestic roll in 2011.

However, we have found it significantly more difficult to lift the academic achievement of our domestic Pacific student cohort to what we would regard as satisfactory levels; though that performance is actually well above university sector averages, and Pacific achievement at the postgraduate level in particular has increased¹⁴, improving Pacific achievement further is a priority for the future.

Otago's Focus for the Next Three Years

The pilot projects undertaken by Otago in the past three years have focused very clearly on effective transition for Māori and Pacific students into successful university study. The projects themselves, the way in which they have operated (involving partnerships with iwi, community groups and other agencies), and systematic research embedded in them, is consistent with Government's thinking about how best to advance in this area.

The consolidation of these pilots as ongoing elements of University activity will, therefore, be a priority over the next three years. Otago will seek to extend or expand these projects as far as possible, while recognising that their success is due in no small part to their relatively small scale and accompanying focus and close partnership. Projects that support successful transition into sciences and health sciences study will remain a particular priority, both because these are areas in which Otago is especially strong, and because these are areas in which Māori and Pacific peoples are particularly under-represented.

Developments in respect of Māori will recognise that Otago is already supporting its Māori students to achieve completion rates very close to those of the general student population, and that the measures it has put in place in the past few years provide the key ingredient for further success.

This current level of performance gives us confidence to pursue an approach that targets modest growth as well as higher levels of achievement from our Māori student cohort. Specific areas for attention in the next three years will include:

- further increasing Māori as a proportion of domestic student enrolments¹⁵;
- further increasing Māori course completion and retention¹⁶;

¹³ The monthly research hui – MAI ki Otago – are part of the nationwide Mai te Kupenga programme that has been established to encourage the development of excellent scholars, researchers and future leaders.

¹⁴ Rising by 21.6% over the past three years, compared to a general rate of increase for the University of 10.5%.

¹⁵ To reach at least nine per cent by 2015.

¹⁶ The University has intentionally chosen a stretch target, which is to have the course completion rate for its Māori

- further increasing progression to postgraduate study and the number of Māori achieving postgraduate qualifications¹⁷;
- embedding existing programmes, including the community wānanga and Tū Kahika transition programmes, as part of an integrated programme to facilitate successful Māori transitions to university study¹⁸;
- consider adopting the Tū Kahika model for piloting in an area other than the sciences or health sciences;
- operating an enhanced admission pathway for Māori as part of the University's enrolment limitation system and continuing existing enhanced admission systems for Māori students seeking entry to professional programmes in the health sciences;
- extending further our relationships with iwi and other Māori partners;
- embedding targeted mentoring and early-intervention measures to support Māori students early in their studies;
- continuing to undertake research into these initiatives, sharing that research nationally and internationally, and learning from other research in this area¹⁹.

Developments in respect of Pacific students will indicate that while it is important to continue the momentum provided by steady growth in Pacific enrolments, priority should be given to narrowing the gap between Pacific student achievement and that of the general student population. Specific areas for attention in the next three years will include:

- increasing Pacific student course and programme completion, retention and progression to postgraduate study;
- adopting a Pacific Strategic Framework and an associated Pacific leadership role to support and coordinate developments in respect of Pasifika activities at Otago;
- providing additional facilities to enable the development of the University Pacific Islands Centre as the hub for Pacific support services and student groups;
- supporting the ongoing development of a comprehensive programme to enhance the achievement of Pacific students in the health sciences and using the experience gained through this to inform developments in other areas of the University;
- applying more widely the experience gained through an early intervention pilot programme in the humanities to identify and support Pacific students who are not achieving up to their potential;
- consolidating the Pasifika equivalent to the Tū Kahika transition programme as embedded activity for the University²⁰;
- operating an enhanced admission pathway for Pacific students as part of the University's new enrolment limitation system and continuing existing enhanced

student cohort equal that of its overall domestic student cohort by 2015.

¹⁷ The provision of transition, conference and publishing grants for Māori postgraduates, designated postgraduate scholarships for Māori and the University's Māori postgraduate support programme will continue to play vital roles in respect of this.

¹⁸ These initiatives are currently being deployed to support increased Māori student enrolment and success in the sciences and health sciences. The community wānanga programme aims to increase the number of Māori leaving school with the necessary academic background to study in the sciences and health sciences. It was piloted in partnership with Ngāti Porou and schools in the Tolaga Bay area in 2008, and has since been extended to operate in partnership with Ngāi Tahu rūnanga in Murihiku (Southland) and, in 2012, in Karitane (Otago) and Waikawa (Marlborough). As well as the recurring wānanga with established partners, further strands of this initiative are planned for the period of this Investment Plan, one in the upper South Island, and two in the North Island. Tū Kahika prepares Māori who have left school without the necessary academic background to study in the sciences and health sciences. It ran for the first time in 2010, and has been hugely successful, underpinning a 60% increase in the number of Māori who have gained entry to the university's health sciences professional programmes. Both programmes were piloted with funding from the TEC (via Priorities for Focus) and Ministry of Health.

¹⁹ Ongoing work in association with Ako Aotearoa will play an important role in this.

²⁰ This programme commenced in pilot form in 2012 with funding support from the Ministry of Health. Further funding has been secured for 2013, and negotiations are currently underway to secure longer term support.

admission systems for Pacific students seeking entry to professional programmes in the health sciences;

- continuing to develop a range of targeted awards, scholarships and grants that recognise and support the achievements of high-calibre Pacific students;
- considering a pilot of a Pasifika equivalent to the community wānanga programme.

These points of focus should be viewed in the strategic context of Otago being a university with an overall high-performance focus, special strengths in specific discipline areas in which Māori and Pacific students are most poorly represented at both school and tertiary level, and a main campus located away from major concentrations of Māori and Pacific population.

It follows from this that Otago should not seek to make a high volume contribution to solving the overall volume-deficit of Māori and Pacific students in the national university cohort²¹; rather, it should contribute through supporting excellent outcomes for students from these groups, and through making a nationally important difference for participation in specific discipline areas such as the sciences and health sciences, these being areas where it is strong and where Māori and Pacific students are most poorly represented at tertiary level.

Otago has proposed performance commitment targets appropriate to these points of focus identified in this section. Our ability to meet these targets is contingent on the provision of adequate funding and – especially in respect of qualification completion and retention – may also be influenced by changes in economic and labour market conditions²².

2.5.3 A Bigger and Clearer Economic Contribution to Society

Government's Priorities

Within this overall priority area for the tertiary education sector, Government has asked universities to focus particularly on being active and successful in linkages with industry and knowledge transfer from research activities. A particular understanding is also sought of universities' long-term research strategies, including approaches to:

- ensuring fundamental research is supported;
- increasing the effectiveness of knowledge exchange and commercialisation activities;
- building scale and focus through effective collaborative relationships;
- contributing to national and international research on indigenous development, and understanding and communicating its application to the Māori economy;
- recruiting and developing new researchers;
- the place of research-intensive postgraduate programmes within their portfolio of provision;
- benchmarking research productivity against international standards.

Otago's Current Position

Otago's success in the Ministry of Business, Innovation and Employment's 2012 Science Investment Round provides evidence of a university increasingly engaged in applied, industry-facing research. Having historically ranked in the middle-of-the pack amongst New Zealand universities in funding rounds of this type, Otago has progressively improved over recent years to the point at which it claimed a decisive first place amongst universities for the 2012 Science

²¹ This is, quite properly, a core task for institutions close to major Māori and Pacific population bases.

²² Student retention has, for example, strengthened in recent years due to a scarcity of job opportunities. Past experience suggests that an economic and labour market recovery would tend to have the opposite effect.

Investment Round, both in terms of the number of projects funded and the value of that funding²³.

This result is but the latest of a number of measures or indicators that show how Otago in recent years has lifted its game in research that makes an economic difference. The University has, for example, been the lead provider in the Government's current technology transfer voucher initiative (accounting for over 25% of this programme) and has been independently rated as "well engaged with business", with external subcontracting [deploying our science expertise for commercial purposes] "well above the mean" for New Zealand universities for 2010/2011²⁴.

Otago's work in this area involves a number of key research partnerships, such as those with NIWA, AgResearch and other Crown Research Institutes, to generate synergies with research organisations that will lead to economically important outcomes²⁵.

The University's burgeoning presence in commercially-relevant research builds very directly on its long-established strength in fundamental research. This underpinning research strength is such that Otago is well established as New Zealand's most research intensive university according to a wide range of national and international assessments²⁶. It also explains the University's long-standing dominance of the country's premier contestable pool for fundamental research (the Marsden Fund), and – with a particular focus on its health sciences strength – its ongoing success in Health Research Council (HRC) funding rounds.

A key point not always understood is that applied research is almost always grounded in fundamental research. Indeed, it is usually fundamental research that generates step change innovation, often in fields of application that could not have been anticipated. In many instances those that bring the strongest commercial focus to their research are also (or have been) leading fundamental researchers²⁷.

Appropriate incentives and structures are vital to encourage research that is relevant, innovative and connected. The incentives in place at Otago include the provision of seed funding to encourage externally-connected research involving other research organisations and industry²⁸, and an intellectual property policy that allows for a sharing of the proceeds of commercialisation between those who produce the underpinning intellectual property, their academic department and the University²⁹.

The key elements in respect of structure are: the Research and Enterprise Office as a conduit through which to develop research links with commercial entities; the University's wholly owned subsidiary, Otago Innovation Limited, as a vehicle for the commercialisation of intellectual property; its Centre for Innovation as a commercialisation hub. Otago is also a

²³ Otago secured funding for nine projects totalling \$27.6 million, almost \$10 million more than the second-best university in this funding round.

²⁴ Ministry of Science and Innovation, University of Otago 2010/11 Summary (Wellington, May 2012).

²⁵ We work collaboratively with every CRI in the country, and are co-located with and/or have joint appointments with a number of CRIs.

²⁶ These assessments included the 2006 PBRF assessment, and the research and citations components of the annual Academic Ranking of World Universities (ARWU) and the QS World University Rankings.

²⁷ In areas of particular relevance to the New Zealand economy of late, Otago fundamental science researchers determined the origins of the PSA kiwifruit disease from China using NZ Genomics Ltd capability, and have also been at the forefront of work on the currently troubled honey and bee products industry.

²⁸ Using both our own Strategic Otago University Research Grants scheme, and the Priming Partnerships scheme that was funded by the TEC over the period of the last Investment Plan. Several initiatives seed-funded through these schemes developed into projects that have now secured long-term funding in Ministry of Business, Innovation and Employment's 2012 Science Investment Round.

²⁹ The sharing arrangement at Otago operates on a one-third/one-third/one-third basis, with the proceeds that flow back to the department being used to support further research.

partner in the Upstart business development incubator³⁰. Furthermore, the University also has business-focused academic strength in entrepreneurship, and a globally-linked MBA programme.

The following are illustrative of our current scope of activity in these areas:

- Otago has over 400 external/business relationships, a third of which are with international partners;
- Otago has partnered in approximately 100 research contracts and 90 technical consultancies with businesses in high value manufacturing in the past three years;
- Otago also works closely with companies in the food, sheep and beef, dairy, wine, general manufacturing, infrastructure and media sectors³¹;
- Otago has formed a number of spin-off companies to commercialise specific research discoveries, and is currently pursuing exciting commercialisation opportunities in fields including novel gene therapies, drug delivery systems, software, measurement devices and vaccines.

Following the appointment of the current Vice-Chancellor, and a new Deputy Vice-Chancellor (Research and Enterprise), the University has initiated a number of changes to the manner in which it organises its research support services. These changes include within their aims the provision of smoother pathways for the application of research.

In respect of the other points of focus identified by Government within its priorities for research, the following points are most relevant:

- the University's ongoing success in Marsden and HRC funding rounds, and its success in PBRF, have provided a solid base of funding to support our fundamental research;
- we are using collaborative relationships to build scale and focus. Recent high-profile examples of this include the joint Otago/NIWA team that won the Prime Minister's Science Prize for their research into climate change, and the deployment of NZ Genomics Ltd capability to determine the origins of the PSA kiwifruit disease;
- Otago is a leader in research on indigenous development. While Te Tumu, the University's School of Māori and Indigenous Studies, is a centre for activity in this area, research relevant to Māori development is undertaken throughout the University. In 2011 the University undertook over 630 research projects in association with Māori, and showcased some of its most exciting work in this area in a special publication – *He Kitenga Māori* – that was presented at Parliament in early 2012³²;
- the University is demonstrating an increasing capacity to take a leadership role in major collaborative projects involving both other institutions and private sector groups³³;
- as a research-led university, Otago has a particular focus on research-intensive postgraduate programmes. Enrolments for postgraduate research degrees have increased at four times the rate of general university roll increases over the past five

³⁰ The other main partners are the Dunedin City Council, Otago Polytechnic, NZ Trade and Enterprise and Incubators New Zealand.

³¹ Including Fonterra, Synlait Milk, Dairy NZ, Goodman Fielder; Cadbury, Zespri, Rakon, Sirtrack, Seeka, WasteSolutions, ADInstruments, Scott Technology, F&P, Tetrapak, Air New Zealand, Delta and Natural History New Zealand (NHNZ).

³² The projects highlighted included several relating to seafood industries, Māori entrepreneurship, tourism, and export business success based on kaupapa Māori approaches.

³³ For example, in 2012 Otago Zoology professor Hamish Spencer has been appointed Director of a National Centre of Research Excellence (the Allan Wilson Centre for Molecular Ecology and Evolution), Otago Marine Science Professor Gary Wilson has been appointed inaugural director of the New Zealand Antarctic Research Institute (NZARI).

years, with increased interest in innovative new programmes (e.g. clinical doctorates) a feature of recent years³⁴;

- Otago plays close attention to research productivity, and there is clear evidence that the University has increased its research productivity over time, and also that we lead the way in research productivity amongst New Zealand universities³⁵;
- Otago has increasingly harnessed traditional medical and health science expertise and applied this expertise to the primary industries — for example, in the areas of animal remedies, bee genetics and wool protein extraction;
- Otago has steadily increased the funding it receives from overseas sources to support research over the past three years, also increasing the number of sources of that funding over the same period³⁶;
- Otago research teams are now more engaged in ‘research/technology-pull’ rather than ‘research/technology-push’ as evidenced by increasing success in securing support from non-traditional partnered funding pools³⁷.

The University also has mechanisms in place to connect its academic community more effectively with industry and business, and has developed much stronger linkages to inform decision-making by Government and its agencies. A range of advisory boards comprising business, industry and community leaders are in place to work with specific areas of the University³⁸, and focused connections are formed in areas where there are special synergies³⁹.

A final important point in respect of economic development is that one of the main contributions a university can make comes through producing graduates equipped to make a strong economic contribution.

Otago produces in excess of 5,000 graduates per annum⁴⁰. Our strength in the health sciences means that Otago plays a special role in producing graduates for the health professions and in providing further advanced study options that support specialisation within these professions⁴¹. A particular Government focus in recent years has been on increasing the number of medical graduates, and Otago has responded by significantly increasing the domestic student intake into its undergraduate medical degree programme.

³⁴ Postgraduate research enrolments increased by 20% between 2007 and 2011, and are up again in 2012. Such enrolments comprised 10.6% of enrolments in 2011.

³⁵ From 2007 to 2011, Otago’s research output (as measured by publications) increased by 23.5%, while academic staff numbers rose by just 6.7%. A reliable annual indicator of research productivity relative to other universities is provided by the Per Capita Performance (PCP) component of the Shanghai (ARWU) University Rankings. For 2012 this showed that Otago had easily the highest rating of any New Zealand university, with a per capita performance in the top 70 worldwide, first in New Zealand, and fourth in Australasia.

³⁶ Funding increased from \$2.6 million (with 73 overseas funders) in 2009 to \$3.8 million (with 79 funders) in 2011. The range of funders involved is illustrated by the following list of selected overseas funders for 2012: the Bill and Melinda Gates Foundation; GlaxoSmithKline; Massachusetts General Hospital; the National Geographic Society; the World Health Organization; Pepsico; the Korea Institute of Energy Research; Southern Implants South Africa; the Tokyo Institute of Technology.

³⁷ Including TechNZ, AGMARDT, and Sustainable Farming Fund support, as well as support through MBIE targeted research funding.

³⁸ For example, providing advice to the University’s School of Business and its Applied Sciences programme, through deploying the expertise of the University to support Māori business development in the South Island, and in advising on developments in fields such as bee genetics, and making better use of wine industry by-products.

³⁹ For example, the University’s internationally acclaimed Science Communication programme in natural history filmmaking is a joint initiative with Natural History New Zealand (NHNZ), one of the world’s largest documentary filmmaking organisations.

⁴⁰ Otago’s 2011 graduating cohort comprised 53.4% of graduates in the sciences and health sciences, 28.6% in the humanities (including law and teacher education), 15.0% in business, and 3.0% in interdisciplinary programmes.

⁴¹ Otago is home to the larger of New Zealand’s two medical schools, which is physically based across its Dunedin, Christchurch and Wellington campuses. It is also home to the country’s only School of Dentistry, and is one of two national providers for pharmacy and physiotherapy.

Otago also provides large numbers of graduates for non-health professions, and is closely linked to employer and industry needs in these areas as well⁴².

In addition to knowledge and attributes related to their specific area of study, Otago seeks to develop a clearly defined set of attributes in all of its graduates. These attributes are defined in the University's Graduate Profile, which appears as Attachment F. The attributes are reviewed periodically, and currently comprise nine attributes specifically sought by employers and four over-arching attributes. The extent to which these attributes have been developed during study and applied following graduation is tested annually through the University's Graduate Opinion Survey and reported against in the University's Annual Report.

The University also monitors its graduate outcomes against a target of at least 90% progression to employment or further study following completion⁴³. Employers value the fact that as well as having strong academic credentials, Otago graduates tend to be personally mature.

It is important to appreciate that while Otago's main campus is in Dunedin, the majority of our students come from outside Dunedin, and disperse again following graduation to meet industry and employer needs nationally as well as overseas. At present, 20.8% of Otago's alumni population (including international students) live overseas⁴⁴, while the balance is spread across New Zealand as follows:

Spread of NZ Resident Alumni (2012)

	Number	Percentage
Auckland	14,318	21.1%
Wellington	10,320	15.2%
Other North Island	6,391	9.4%
Canterbury	10,035	14.8%
Otago	19,418	28.6%
Southland	4,677	6.9%
Other South Island	2,746	4.0%
Total	67,905	

Otago's Focus for the Next Three Years

The University aims to build on the momentum achieved by recent developments and successes in this area and make an ever stronger economic contribution going forward.

Otago proposes signalling this commitment at a very high level by making explicit mention of the application of knowledge in its revised mission statement. This will anchor a greater commitment to the application of research, including for economic return, at the highest level of University thinking, and be supported by imperatives within *Strategic Direction to 2020*.

Key personnel with international experience in enterprise activities are already being put in place to drive this forward. A recent restructuring was undertaken with the explicit aim of better connecting the research and enterprise arms of the University's operations.

⁴² Including teaching, surveying, social work, law and accountancy.

⁴³ The most recent level of achievement against this target was 94.7% (2011), and according to a recent national survey, 89% of Otago graduates who had not proceeded to further study were in permanent employment within six months of graduating.

⁴⁴ The geographical dispersion of Otago's 17,868 overseas alumni is as follows: 25.3% North America, 24.7% Asia, 23.4% Australia, 21.1% Europe, 5.5% elsewhere (including 2.5% in the Pacific region, 1.2% in Central or South America, 1.1% in the Middle East, and 0.7% in Africa).

These developments will legitimise, and allow Otago to better harness, the entrepreneurial spirit that is a characteristic of so many of our emerging generation of academic high-performers. There are, already, dozens of great ideas with strong commercial potential emerging from our academic schools and departments.

To strengthen our economic contribution over the period of this Investment Plan, additional points of focus will include:

- the further development in scale and focus of our collaborative relationships with Crown Research Institutes, the Cawthron Institute, national Centres of Research Excellence and other organisations focused on developments relevant to New Zealand's primary industries⁴⁵;
- the development of a particularly close relationship with IRL/ATI, especially around high value manufacturing and Māori science entrepreneurship;
- partnering with the Dunedin City Council and other key groups to deliver on the city's new ten-year Economic Development Strategy (focusing initially on projects to improve the innovation structure for the city, to retain a proportion of graduates in the city, to link better with graduates who have left the city, and to increase export education)⁴⁶;
- an increased use of student internships in business and industry, and a growing programme that deploys our academic expertise to solve real-world business and industry problems;
- innovative initiatives that support student ideas and their progression to market;
- seeking a greater proportion of research funding from offshore sources (including philanthropic, overseas Governmental and commercial sources) and, where appropriate, partnering with overseas institutions to make this possible;
- the continued development of initiatives outlined in the statement of current position above.

While placing a greater emphasis on the application of research, Otago will continue to nurture fundamental research, both because this too is part of the legitimate business of a university, and because fundamental research underpins future applied research⁴⁷.

The University will also continue to benchmark its research productivity against international standards. This will occur both at an institution-wide level (through, for example, monitoring those components of international rankings that assess productivity) and in a more focused way through supporting specific schools and departments to engage with and benchmark against comparable groupings overseas.

A further key challenge Otago will pay attention to is the internationally recognised situation of an aging academic workforce.

The development of the next generation of academic leaders will be facilitated by a range of initiatives. These will include supporting high-achieving early and mid-career researchers as a formally recognised group – the O-Zone Group – at Otago, and involving these and other

⁴⁵ Otago is making a strategic investment of \$2 million over five years in projects that develop closer relationships with these partners.

⁴⁶ Approved in September 2012, Dunedin's new Economic Development Strategy has broken fresh ground for New Zealand by being developed as a partnership between the City, the University, Otago Polytechnic, the local Chamber of Commerce and Employers Association, and local runanga.

⁴⁷ The world's leading applied research universities are, typically, world renowned in fundamental research too.

dynamic younger staff in projects that relate to the strategic development of the institution⁴⁸. Over the longer term, the University's ongoing commitment to growing its postgraduate programmes, including research degree programmes, will also provide a basis for responding to academic workforce needs⁴⁹.

2.5.4 More Learners Engaged in Study Towards STEM Qualifications

Government's Priorities

Increasing the number of science, technology, engineering and mathematics (STEM) graduates is a Government priority. Institutions that seek to contribute to this priority will be expected to do so in ways that extend beyond conventional tertiary-level sciences teaching to include schools and community outreach on the one hand, and connections with employers and industry on the other.

Otago's Current Position

Otago is New Zealand's most science-focused university, and both the volume and concentration of our teaching delivery in the sciences has increased markedly in recent years⁵⁰.

The University places additional importance on the core sciences as they provide a platform of knowledge that is a prerequisite to studying in areas such as health sciences and surveying, where we have national leadership. While we do not provide engineering programmes of the conventional kind, Otago has become increasingly active through its applied sciences programmes in producing graduates who work in engineering fields.

We are all too familiar with the difficulties the school system has in producing students who are both interested and strong in the STEM subjects. We have observed that these difficulties are particularly apparent amongst the Māori and Pacific school-leaving cohorts, and amongst students from schools that exhibit one or more of the following characteristics: small, low decile and rural/provincial⁵¹.

Otago has pursued sciences outreach into schools for more than 20 years, and a focus of the past five years has been the introduction of pilot programmes tailored to the specific needs of Māori and Pacific students, and to schools that have traditionally struggled to produce high-calibre science students. Development for teachers as well as students has been embedded in these programmes.

At the same time, we have developed new approaches around transition programmes, in part to provide further 'polishing' for those progressing from science outreach, and in part to meet the needs of those who may not have had such opportunities. These new approaches have involved a substantial re-orientation of the domestic component of Otago's foundation programmes to concentrate specifically on science transition for Māori and Pacific students.

Consistent with Otago's standing as a national university, and with our special expertise in the

⁴⁸ The O-Zone group comprises early to mid-career researchers who have been recognised by the University of Otago for significant contributions to their fields. It undertakes activities to promote interdisciplinary thinking and collaborations, and seeks to present a positive, clear, innovative and independent voice for research.

⁴⁹ The University's specific targets in this area are set out in the *Statement of Objectives* which accompanies this Investment Plan.

⁵⁰ The TEC's 2010 *Tertiary Education Performance Report* found that 23.6% of Otago's teaching delivery was in the natural and physical sciences. Only one other university, Lincoln, came close to having even 20% of delivery in the sciences, and the majority are below 15% or even 10%.

⁵¹ Such schools are much more likely to lack the key resources – most obviously, teachers with expertise in specific sciences subjects – needed to deliver a high standard of science teaching.

sciences, the majority of these outreach and transition programmes have national reach. Most are highly focused and intentionally small in scale, as we have found that small group dynamics (groups of 20-50) deliver the best results. The core elements are as follows:

Key Science Outreach Activities

- Otago University Advanced School Sciences Academy (OUASSA): Commenced in 2011 as a two-year pilot for approximately 50 students a year, OUASSA complements the Year 13 science teaching at partner small, low decile and rural/provincial schools. It involves two curriculum-linked week-long residential components and a virtual science academy between. Outcomes from the initial academy have been excellent⁵².
- Hands on Science: Otago's long-standing science flagship, offering up to 200 science-interested students – typically at the end of Year 12 – a week-long residential research science camp experience in their summer break.
- Otago Science Wānanga: Commenced in 2007 in Tolaga Bay (at the invitation of Ngāti Porou), and now also in Southland, Otago and Marlborough. The wānanga are annual three day marae-based, curriculum-linked science camps for approximately 40 secondary school students per wānanga. The first wānanga 'graduates' are now moving into university study, and the relationships built with Māori communities are also generating a number of mutually beneficial research opportunities.
- Tapuitema Science camp: Commenced as a pilot programme in 2011, this two-day science camp for Year 9/10 Pacific Island students from Dunedin schools aims to address the poor participation and performance of Pacific students in school science.
- Other Outreach Activities: These include long-standing Marine Studies schools and gifted and talented programmes, targeted outreach in Chemistry and Physics, and support programmes for local secondary school students studying scholarship sciences. Otago is also the host and partner for the biennial New Zealand International Science Festival⁵³.

Key Science Transition Activities

- The Tū Kahika Transition Programme (TK): Commenced in 2010 as a pilot, this highly intensive year-long foundation science programme is aimed at Māori (initially those intending to pursue health sciences study). It has a current intake of 20-25 students, and has been highly successful⁵⁴.
- Pacific Foundation Programme (PFP): Commenced in 2012, with a pilot cohort of 10 students, this is the Pacific version of Tū Kahika. Early results are most encouraging.
- Jump Start Physics/Bridging Chemistry: Long-standing intensive courses to give students who do not have strong school backgrounds in the skills and knowledge needed to complete 100-level Biological Physics and Chemistry at University⁵⁵.

Connections with industry and employers are a vital component of science at Otago. While many of the strongest links are embedded at the discipline level, they are also formalised at a

⁵² 91% of the cohort proceeded to University in 2012, almost all studying sciences, and a further 6% intend to do so in 2013. 94% reported OASSA had given them confidence to pursue sciences study at University. Just over 75% felt participation had enhanced their Year 13 academic performance, and in almost all cases their teachers agreed.

⁵³ SciFest exists to celebrate, promote and raise awareness of science, technology and the environment. It involves many different people and groups – including international guests and local leaders in science. Over 12,000 people attended events at the latest (2012) festival.

⁵⁴ With the first Tū Kahika cohort seeking entry to health sciences professional programmes, we have seen a massive upswing in the number of Māori students gaining entry (45 Māori gained entry to such programmes in 2012, up from the previous norm of 20-25 per annum).

⁵⁵ These subjects provide foundation knowledge essential for many sciences at Otago, and are particularly hard to 'pick up' without adequate subject-specific preparation.

higher level where appropriate. For example, Otago's applied sciences programmes operate under the overall guidance of an industry-focused advisory board that includes representation from several of the programme's industry partners⁵⁶. Industry and/or employer representation is also embedded in the University's review programme for all academic departments and qualifications⁵⁷.

Otago's Focus for the Next Three Years

The work we have undertaken in the past three to five years sees Otago very well positioned to make an ongoing and extended contribution to increasing student participation in the STEM subjects over the period of this Investment Plan.

There will be a primary focus on embedding, and where feasible extending, the new strands of science outreach and transition activity that have been successfully piloted in recent years. This, in turn, will flow through into increased numbers of students progressing to sciences study at the undergraduate level over the period of this Investment Plan, and to higher levels of sciences study in the future.

There will be secondary focus on further developing the University's applied sciences programmes in ways that increase overall enrolments in these programmes, and that lift the University's contribution to producing graduates who support the engineering and technology workforce goals of Government⁵⁸.

Because science outreach falls outside of the bounds of SAC funding, securing alternative funding will be a key challenge for this strand of activity. We will address this by bringing the various components of outreach activity under a clearer programme umbrella, and seeking funding support for this using a private/public/community partnership model. Explicit funding support from the TEC would assist greatly in this development which, contingent on sufficient funding being secured, would enable Otago to:

- confirm OUASSA as an annual academy, perhaps with a slightly larger annual intake, or with two parallel intakes, and with a fully integrated teacher development component;
- extend the science wānanga programme to include, ideally, at least one urban area, and a pilot version of the programme tailored for Pacific students⁵⁹.

Science transition is, in part, directly supportable via SAC funding, though the rate of funding available falls well short of that needed to meet the costs of the intensive support required to maximise successful outcomes. Otago has been able to bridge this gap for now with generous support from a number of non-education agencies, but, as is the case in respect of outreach, we suggest that it would be appropriate for some of this funding to come from the TEC in the future.

Our key developments around STEM subject transition over the period of this Investment Plan

⁵⁶ These include Transpower, NHNZ (Natural History New Zealand), Pacific Aerospace, ADInstruments, AbacusBio Ltd, Escea, Fronde Systems Group Ltd, and Silkbody Natural Silk Clothing.

⁵⁷ These reviews are undertaken on a rolling 5-7 year cycle, and the panel for each review includes an industry, employer or professional body representative.

⁵⁸ These two points of focus are interlinked, as the Government's workforce goals in respect of engineering and technology (as prompted by the National Engineering Education Plan project of the Institution of Professional Engineers New Zealand (IPENZ)) can only be fully met if more science-ready and science-interested students enter the tertiary sector from our schools.

⁵⁹ This would enable the number of students engaged in the wānanga programme to increase by approximately 50% per annum, from 160 to 240 participants.

are expected to comprise:

- embedding both Tū Kahika and the Pacific Foundation Programme as ongoing programmes for the University, with a modest increase in the annual intake;
- piloting additional components of science-focused transition within the University's overall foundation programme⁶⁰;
- re-designing our science bridging and jump-start programmes so that they are for-credit rather than not-for-credit courses.

In the applied sciences, we expect to continue to grow enrolments and explore possibilities including:

- a closer relationship with Otago Polytechnic, built around synergies between its Bachelor of Engineering Technology and our applied sciences programmes;
- formal IPENZ recognition for majors within our applied sciences programmes that produce interdisciplinary technologists with a clear engineering focus⁶¹;
- the addition of one or more applied science majors of the kind described above;
- the reconfiguration of the applied science masters' to better meet the needs of industry.

The impact of these developments as they flow through to undergraduate enrolments in STEM subject areas are allowed for in the mix of provision components of this Investment Plan.

2.5.5 International Education

Government's Priorities

Within the context of an overall goal to double the annual economic value of New Zealand's international education services over the next 15 years, Government is seeking growth in international revenue at the institutional level. It is expected that this growth will be pursued in ways that support each institution's core business, generates educational benefits for domestic as well as international students, and generates wider benefits for New Zealand.

Otago's Current Position

In 2011, Otago achieved the highest international roll in its history, attracting 2,798 overseas students. That record roll took Otago to the point at which its international roll had doubled over the course of a decade, and crowned three years of strong international growth, during which the number of overseas students at Otago increased by more than six per cent per annum.

2012, though, has seen a decline in international enrolments of just over six per cent. This has been due to a combination of factors. The most important of these have been the conclusion of a major teacher education contract with the Malaysian Government, the high value of the New Zealand dollar, and the fact that the Canterbury earthquakes have had an adverse impact on the attractiveness of the South Island as a destination for single semester Study Abroad students from North America⁶².

Otago's current position should be viewed in the context of a sometimes misunderstood approach of capping its international student roll, and the proportion of such students that it

⁶⁰ These may include a strand for those seeking to advance in general and/or applied sciences study, and a strand to support those wishing to proceed to the teaching profession with a particular strength in sciences.

⁶¹ Otago is of the view that seven of its current 15 applied science majors would merit consideration on this basis.

⁶² The global economic situation has also impacted adversely on international recruitment, due to factors including the relatively high value of the NZ dollar, and the fact that the international recruitment market has become more competitive as major universities around the world seek to supplement static or decreasing government funding with international student fees.

seeks from any one country⁶³. Important perspectives in respect of this approach are as follows:

- in practice, the overall cap operates as much as a target as a cap, and can be adjusted at Council's discretion. In recent years the University has been seeking to grow our international roll towards the cap, not managing numbers down to it;
- the existence of a cap protects the attractiveness of Otago as a destination for top-calibre international students⁶⁴, ensuring that international students are recruited to enrich both their experience and that of the New Zealand students with whom they live and study, and protects the University from over-exposure in any one international market.
- having a cap in place (15% from 2013, 12% from 2005 to 2012 and 10% prior to 2005) has not prevented Otago from doubling its international roll over the course of a decade.

A key consequence of this approach is that Otago's international student cohort is unusually diverse, with students from over 100 countries represented in 2011. The United States has been the largest single source of international students for Otago in recent years, followed in 2011 by Malaysia, China, Canada, Germany and India⁶⁵.

Reciprocity is an important element of any meaningful relationship, which is why Otago leads the way nationally in having student exchange as a crucial dimension of internationalisation⁶⁶. Staff networks also play a vital role, and in this context it is relevant to note that over 60% of Otago's academic staff hold qualifications from overseas universities.

The underlying international linkages of the University comprise a myriad of connections between individual academic staff with colleagues at hundreds of other universities and research institutions around the world. The possibilities afforded by these range from the general exchange of ideas through to jointly-conducted research, reciprocal opportunities to visit and present at conferences and other institutions, and opportunities for students (especially at the postgraduate level). Otago is uniquely placed in respect of these linkages due to its very high proportion of staff holding qualifications from overseas⁶⁷.

International connections based around areas of common research endeavours are especially important for smaller economies like New Zealand's, as they enable us to draw on the much larger research infrastructures in place in other parts of the world. Otago is also committed to deploying its own infrastructure and expertise to support developing nations, especially in the Pacific region⁶⁸.

Otago maintains formal agreements or contracts with over 100 partner institutions around the world. A key international strategic development for Otago has been the formation, in 2010, of the Matariki Network of Universities. The University of Otago is a founding member of this group of seven outstanding international universities, all of which are among the oldest and

⁶³ Along with an overall cap on international enrolments, Otago requires that no more than 25% of international students should come from any one country.

⁶⁴ Such students take the cap as evidence of selectivity.

⁶⁵ Amongst the countries represented in Otago's 2009 international student cohort, no fewer than 22 supplied 20 or more students.

⁶⁶ Otago has the highest percentage of students on exchange of any New Zealand university.

⁶⁷ Some two thirds of Otago's academic staff are either from overseas, or are New Zealanders whose highest academic qualification (typically a doctorate) has been awarded by an overseas university.

⁶⁸ Examples of Otago's involvement in this area include a special relationship with the National University of Samoa, an active Centre for International Health, and our involvement with Volunteer Service Abroad's UniVol programme.

foremost places of learning in their respective countries⁶⁹. The network, which operates under the theme of *partnering for a better world*, was founded to support a range of activities, including enhanced student exchange, development of joint postgraduate programmes, social responsibility projects, research collaboration, visiting fellowships, staff exchange and secondments, benchmarking and sharing of best practice, and cultural and sporting activities.

Otago's Focus for the Next Three Years

Key characteristics of the University's current approach to international education remain appropriate to its future strategic direction.

However, having come close to reaching its 12% international EFTS cap in 2011, the University has increased its cap to 15% from 2013. This provides scope for a 20% increase in international enrolments over-and-above the maximum under the current cap, and close to 25% above current actual enrolments⁷⁰. Given the current complex global and national situation for international enrolments, this, if anything, will represent a significant stretch target over a three-to-five-year time frame.

The University has no desire to achieve this growth through developing a campus presence offshore, however it does see opportunities for achieving international growth through further partnering with appropriate educational institutions and agencies overseas. Otago will also investigate opportunities to extend its provision of distance/online programmes offshore in areas where it has particular international expertise⁷¹.

Consistent with its overall strategic direction and market preference, Otago sees a particular opportunity for international growth at the postgraduate level. Proposed changes to the national rules around taught masters' degrees are vital to this: they will allow New Zealand universities to offer one-year taught masters' degrees of the kind that are particularly attractive to international students studying in other countries; Otago, with its strong overseas reputation and internationally recognised scholars, is especially well placed amongst New Zealand universities to take advantage of this opportunity.

The University's developments in this area will take place in the context of export education being a significant point of focus for Dunedin under the city's new Economic Development Strategy.

Otago will also consider ongoing opportunities to attract Australian students, noting that while Australians are not considered international students for most purposes, their presence adds further richness and diversity to the University's student population. Furthermore Australian citizens educated in New Zealand can promote understanding of New Zealand's culture and provide economic benefits for New Zealand when they return to live and work in Australia.

2.5.6 Information for Learners

Government's Priorities

The Tertiary Education Commission has signalled a desire for the provision of more information for students on a range of topics relating to their study, including information on

⁶⁹ The MNU members are Dartmouth College (USA), Durham University (UK), Queen's University (Canada), University of Otago (New Zealand), University of Tübingen (Germany), University of Western Australia and Uppsala University (Sweden).

⁷⁰ This equates to provision within the cap for more than 550 additional international EFTS.

⁷¹ This currently occurs in the highly specialised field of aviation medicine, with delivery into Australia as well as within New Zealand.

student satisfaction, retention and completion, post-study outcomes (especially employment outcomes), and the full cost of study (including Government tuition subsidies as well as tuition fees).

Otago's Current Position

Otago already has a range of mechanisms in place for gathering and disseminating much of the information referred to above. These include comprehensive annual student and graduate opinion surveys undertaken by the University since the mid-1990s. These track student and graduate satisfaction across both academic study and support services and – in the case of graduates – provide information on employment outcomes, and on the extent to which the attributes developed during study are proving relevant post-study⁷².

The University is also a biennial participant in the *Australian Survey of Student Engagement* (AUSSE) and a partner (and, indeed, the host institution for) the new *Graduate Longitudinal Study New Zealand* (GLSNZ).

Our student and graduate opinion surveys, which have been in operation since the mid-1990s, are fully integrated into the University's quality advancement processes. Findings are provided to departments and service units annually, with any areas of concern highlighted for attention. They are also provided to the independent panels that review specific areas of the University on a rolling cycle. There are numerous examples of changing levels of student satisfaction leading to action to address particular issues that arise.

The graduate and student opinion surveys are also the single most important source of data for the key performance indicators within Otago's annual *Statement of Objectives* and *Statement of Service Performance* (see below). The University also sets targets for, and reports on, academic performance and post-study outcomes within the *Statement of Objectives* and *Statement of Service Performance*.

Otago's Focus for the Next Three Years

The University looks forward to working with the relevant agencies in this area over the period of this Investment Plan.

Proposed developments around the disclosure of the full cost of tertiary education are of particular interest to Otago; a point this University has been emphasising recently in the context of students' obligations as citizens is that they are still, to a large extent, taxpayer funded.

Our commitment to building a more sophisticated, long-term understanding of graduate outcomes is anchored in the new Graduate Longitudinal Study New Zealand (GLSNZ). As well as contributing directly to the funding of this project, Otago is delighted to be hosting it within the research team that already has a track record for running one of the world's most successful longitudinal population studies.

2.5.7 Managing for Performance

Government's Priorities

Government has indicated that in an environment that will be characterised by limited levels of public funding going forward, institutions will be expected to scrutinise their own performance regularly and manage and improve that performance. While Government will give particular

⁷² Otago surveys its graduates 18 months after completion to enable graduates to provide reflective comment on the extent to which the skills and attributes they have developed at University have been applied post-graduation.

attention to performance in respect of its key objectives for the tertiary system (as embodied in the performance commitments agreed with each institution), there is an expectation that institutions themselves will also pay attention to operating efficiently, and being flexible and innovative in all aspects of their operations.

Elements that Government sees as being particularly important in respect of this include: institutions being specialised rather than trying to cover all bases; making business decisions (including to close as well as open, or grow, programmes) based on sound information; paying attention to the teaching and assessment practices of staff; collaborating and coordinating with other institutions to ensure that adequate provision exists across regions and industry areas.

Otago's Current Position

Managing for performance, in the broadest sense, is what this Investment Plan in its entirety is about. Much of what is outlined elsewhere in this document is, therefore, relevant to this section.

The University has a track record for being focused in what it does, and for sound performance, whether measured in terms of teaching, research and service outputs, or in terms of financial and organisational stability.

From the perspective of the Government's monitoring of performance:

- Otago has been consistently ranked as 'low risk' according to Tertiary Education Commission assessments of its long-run financial performance;
- Otago has virtually no 'low performing provision';⁷³
- as detailed above, Otago has met or exceeded almost all of its performance commitments agreed with the TEC for the most recent investment plan period, and has consistently been a top performer in respect of the TEC's teaching-focused tertiary education performance indicators;
- as outlined above, Otago is also recognised as the country's most research-intensive university and has increased its research productivity markedly in recent years.

Otago monitors its own performance closely through mechanisms ranging from a comprehensive annual *Statement of Service Performance* (which is directly aligned to its strategic direction, and includes output-type performance indicators) through to the benchmarking and review mechanisms described in section 2.6.2 below. Closely scrutinised budgeting and regular financial reporting is embedded throughout all areas of operation.

Where circumstances have demanded it, the University has shown a willingness to make decisions in the interests of maintaining focus and increasing efficiency. These have, in the past three years, included closing, downsizing or restructuring a number of academic and administrative units, exiting from particular areas of teaching provision (achieved through closing qualifications), introducing a comprehensive quality-focused enrolment limitation system and tightening academic progress policies.

There has also been a more general drive for efficiency across all areas of operations, and the University has welcomed the opportunity to become involved in developments such as whole-of-Government purchasing that support this. An ongoing commitment to the sharing of services has also been evident, with two of the major infrastructural projects of the past three years – the re-development of The Robertson Library and the building of a new student gym and exercise centre – providing facilities that are used by Otago Polytechnic as well as the University.

⁷³ As defined by the Tertiary Education Commission for the purposes of monitoring institutional performance.

Otago's Focus for the Next Three Years

Otago expects that, like every other tertiary institution in the country, it will face pressures over the next three years, and will have to work hard to maintain its performance.

As a University that already demonstrates strong performance in teaching, research and service, and has a strong sense of strategic purpose, Otago is less concerned about its inherent ability to maintain performance in respect of its outputs, than about the potential impact of financial pressure.

It will be vital, yet challenging, to secure diversified funding for core activities. For research, such funding will need to come from a range of non-traditional sources (including from offshore, and through commercial and applied research activity). Given that Government controls tuition subsidies and fees for domestic students, the only significant opportunity for increased teaching revenues will come from having an increased proportion of international students. Otago's response in these areas is outlined elsewhere in this document.

With regard to expenditure, particular care will be required as significant cost pressures exist for a number of expenditure areas (e.g. insurance and energy) that are largely beyond the University's control. The University does have greater control over staff and staff-related costs, which together account for over 60% of the University's expenditure; encouragingly, constructive engagement with the relevant unions has led to a prudent salary settlement. Unusually for Otago, to provide some future certainty, this settlement – negotiated in mid-2012 – covers two years.

A general focus on efficiency will also be apparent. A Financial Performance Improvement Working Party has been working throughout 2012 to identify areas where gains can be made. The University has joined a trans-Tasman benchmarking initiative, UniForum, that will allow it to compare how its deployment of non-academic functions differs in quantum and structure from that of comparable high-calibre research-led universities in both New Zealand and Australia.

In respect of academic efficiency, the University will continue to scrutinise the viability of its programmes. Plans to complete the phasing out of sub-degree provision are included in section 3.2.5 below. The University has also placed the Southland-based component of its secondary teacher education component on hold for 2013 due to a low level of enrolment demand.

The University will also pay ongoing attention to academic outcomes, using performance indicators in its Statement of Objectives that complement those associated with its TEC Performance Commitments.

2.5.8 *Literacy, Language and Numeracy*

This point of focus is not directly applicable to Otago, as it is targeted at lower levels of tertiary education within which we, as a University, are not involved. That said, the University does make a contribution in this area through research into teaching, learning and student performance. In particular Otago's Educational Assessment Research Unit is involved in a range of projects, many under contract to the Ministry of Education, which inform the development of the school system and lay a foundation for improved outcomes at these lower tertiary levels.

2.5.9 Pathways and Transitions

Again, this point of focus is aimed mainly at institutions other than universities. However, we will continue to make a contribution in a general sense through the initiatives outlined in sections 2.5.2 and 2.5.4, and through admission criteria that take appropriate account of qualifications and/or experience gained outside the school system⁷⁴.

2.6 Other Major Initiatives, Changes and Challenges

2.6.1 The Canterbury Earthquakes

Background

Otago has been significantly affected by the Canterbury earthquakes.

The greatest and most direct impact has been on the University's Christchurch campus. Located in facilities adjoining and adjacent to the main Christchurch hospital, it is a specialist campus for teaching and research in the health sciences. Prior to the February 2011 earthquake, it was the base for nearly 225 FTE staff, and 966 individual students, generating 524 EFTS⁷⁵.

Along with the devastating human cost⁷⁶, the earthquakes forced the closure of the majority of our Christchurch faculties, including our main campus building. The University, which had already (in the September earthquake) lost one leased building in which it had invested in significant leasehold improvements, sustained further immediate losses, and faced the prospect of long-term delays before other facilities were fit for re-occupation. Enrolments, which had been expected to increase by some six per cent at Christchurch in 2011, instead declined by seven per cent⁷⁷.

As well as direct effects, Otago was faced with a range of indirect effects. These include issues that remain ongoing around insurance premiums and earthquake strengthening.

Current Position

Otago remains significantly disrupted in its Christchurch operations in 2012. In particular:

- the majority of our Christchurch teaching and research activity continues to take place in temporary premises;
- our main building has been closed throughout the 2012 academic year as repairs are undertaken. A number of other buildings (all leased) have been demolished or are not able to be occupied;

⁷⁴ For example, students may gain entry to Otago on the basis of appropriate levels of achievement at polytechnic and/or wānanga and, in some instances, may have elements of that study credited to their Otago qualification. The University's admission regulations also provide a pathway by which those who lack any substantive formal qualification can have their suitability for university study assessed.

⁷⁵ These students comprise a mix of full-time undergraduate medical students and a larger group enrolled in postgraduate taught or postgraduate research programmes.

⁷⁶ While no University staff or Christchurch campus students lost their lives, University staff and Christchurch-based students lost close family members in the earthquake. Additionally, two of our Dunedin-based international postgraduate students were killed in the collapse of the CTV building.

⁷⁷ While it in no way made up for the impacts at Christchurch, Otago did experience a small increase in enrolments at its Dunedin campus following the earthquake. The majority of this increase was generated by single semester North American Study Abroad students relocating to Dunedin from Canterbury University. This relocation was undertaken jointly by Canterbury and Otago universities, in accordance with the preferences of our Study Abroad partners.

- a site the University purchased in mid-2012 for replacement facilities has since been caught up in compulsory Government land acquisition for the health precinct;
- many of our Christchurch-based staff and students face disruption in their home lives at least equal to that in their work lives;
- while enrolments through the Christchurch campus have recovered quickly to their pre-earthquake levels, they are still tracking below expectations pre-earthquake.

The wider effect of the Canterbury earthquakes has been mixed. In respect of enrolments, Otago has seen a modest upswing in domestic student recruitment from Canterbury and elsewhere in the upper South Island, though due to the limited number of places available in our residential colleges, this has in part come at the expense of recruitment from other areas. On the other hand, as noted above, the Canterbury earthquakes have had an adverse impact on the attractiveness of the South Island as a destination for international Study Abroad students.

Focus Going Forward

With the University's Christchurch campus located close to the heart of the city, as part of the health precinct that will undergo substantial change, full re-development will take place over a timeframe that the University does not control, and which will extend beyond the life of this Investment Plan.

The main points of focus over the next three years will be:

- reducing the current reliance on short-term facilities that are far from ideal either in their size, nature or degree of dispersion. The re-commissioning of the University's main Christchurch building following almost two years of repair and strengthening work will be an important first step⁷⁸;
- engagement in planning for the future Christchurch Health Precinct. This engagement, which commenced formally in the latter half of 2012, involves close liaison with the Canterbury DHB and collaboration with both Canterbury University and CPIT;
- investigating possible involvement in the Christchurch Innovation Precinct;
- undertaking a major fundraising exercise – the University of Otago Christchurch Appeal – to support key research and teaching projects at our Christchurch campus⁷⁹;
- re-initiating a number of Christchurch-based academic and research developments which have had to go on hold in the aftermath of the earthquakes.

Further key considerations for Otago include ensuring that Christchurch-based students whose study at school has been disrupted since the earthquake are not disadvantaged when they seek admission under the University's managed enrolment system⁸⁰, and an accelerated programme of earthquake strengthening at sites other than Christchurch (see below).

2.6.2 Quality Assurance Reviews

Otago is subject to, and in some cases initiates, a range of quality assurance reviews. The following table groups these reviews according to type and provides an overview of each type:

⁷⁸ This re-occupation is scheduled to take place over a period of three to four months, commencing in late-2012.

⁷⁹ This appeal was launched in September 2012, with an initial \$5 million private donation to support the Christchurch Heart Institute. This donation is one of the largest ever by an individual to the University.

⁸⁰ Provisions put in place for 2012 are being continued for 2013.

Review Type	Comment
Universities NZ Academic Audit (NZUAAU) Reviews	<p>These take place across all of the country's universities on a rolling cycle. Otago's Cycle 4 audit took place in late 2011, with the NZAAU report released in March 2012. The report contained eight commendations, five affirmations and 12 recommendations.</p> <p>Otago is responding to the recommendations in accordance with the established process. This will see the NZUAAU provided with an update report responding to the recommendations in mid- 2013.</p>
Graduating Year Reviews	Like all New Zealand universities, Otago also takes part in Universities New Zealand's Graduating Year Review process. This sees all new programmes undergo review soon after the first cohort of students in the programme have graduated.
Accreditation Reviews	<p>Where appropriate, specific disciplines within Otago are subject to periodic accreditation reviews. These are typically undertaken by or on behalf of professional bodies to maintain accreditation for professional programmes, or to provide internationally recognised 'stamps of approval' (e.g. for the University's School of Business). These reviews play an important role in ensuring that qualifications develop to meet changing industry and employer requirements. They also help maintain close connections between industry and specific areas of the University.</p> <p>The University holds accreditation for its professional programmes, and is committed to maintaining accreditation⁸¹. It is also committed to maintaining Business School accreditation with the two leading international agencies in this area⁸².</p>
Internally-initiated Quality Reviews	<p>The University itself operates a comprehensive quality review process, covering all academic departments, programmes and administration on a rolling five-to-seven year cycle⁸³. Otago reviews have an improvement focus, and take place according to a core terms of reference aligned to the University's strategic direction.</p> <p>The reviews are undertaken by panels that include representation from at least one other university (including a representative from outside of New Zealand), from a relevant industry group, and from a student or recent graduate. Reports typically include commendations, affirmations and recommendations.</p>

2.6.3 Supporting Student Success

The high levels of student academic performance and personal development that characterise Otago have at their core the engagement through teaching between students and the University's academic staff.

Providing a broader environment that is conducive to academic achievement is also a crucial underpinning for academic success. This is especially so at Otago where, due to its residential nature, there is a major pastoral component to that support. Consequently, Otago invests particularly heavily in the provision of student services⁸⁴.

Support starts with providing clear expectations. These are outlined for students in three key documents as follows:

⁸¹ Areas in which professional accreditation is maintained include accountancy, clothing and textile sciences, dentistry, dietetics, medical laboratory science, medicine, pharmacy, psychology, physiotherapy, planning, social work, surveying and teacher education.

⁸² These agencies are EQUIS (European Quality Improvement System) and AACSB (The Association to Advance Collegiate Schools of Business, based in the United States).

⁸³ The current review schedule will see 22 reviews undertaken in 2013 and 27 in 2014.

⁸⁴ Our annual expenditure in this area, exclusive of expenditure on the University Library, IT resources and accommodation for students, is approximately \$1500 per student.

- The Student Charter. Jointly developed by the University and students, this articulates the rights and responsibilities of students in relationship to their academic endeavours and general dealings with the University;
- The Code of Student Conduct: This covers expectations around behaviour as a student of the University and as a member of the University community;
- The Graduate Profile: Detailing the attributes the University is seeking to develop in all students over the course of their studies.

Amongst the wide range of learning and support services provided, some target the needs of particular groups of students, and others are more broadly tasked. Key services with a strongly academic focus include the Student Learning Centre, the Māori Centre, the Pacific Islands Centre, Disability Information and Support, the Career Development Centre and Graduate Research Services. The University's International Office, Recreation Services, Student Health Services, Otago University Childcare and the Chaplaincy play broader roles in the well-being of Otago students.

These services are well established, but run innovative programmes: the Student Learning Centre, for example, provides general workshops, a consultancy service with learning advisors, and resources to develop study skills. In recent years, the scope of support has expanded to include working more closely with departments to provide targeted support and developing peer learning support which has proved highly successful⁸⁵.

The University also regards its Residential Colleges as a vital part of its student support system. School-leavers comprise the overwhelming majority of commencing students at Otago, and over 90% of those who come to the University from outside of Dunedin spend their first year in a Residential College. The term "college" as opposed to "hall" is chosen to emphasise the academic community character of these entities. The colleges have a focus on academic support (including tutorials), personal well-being and the development of a sense of community that optimises academic success and personal growth.

All support services are subject to regular review. Satisfaction with services is also assessed annually via the Student Opinion Survey. A 90% level of customer satisfaction is targeted, with actual satisfaction for specific services typically rating between 90% and 95%.

While the use of support services is not mandatory for all students, those who are struggling in an academic or general sense are directed towards the appropriate services and, in some circumstances, may be required to make use of particular services to maintain their enrolment.

The Otago University Students Association (OUSA) also plays an important role in providing support services. In some instances (for example, in the provision of the Otago class representative system and working with the Chaplaincy) OUSA works in conjunction with the University. In other instances (for example in the provision of Student Advocacy) its role is necessarily much more independent.

⁸⁵ Peer learning support occurs through Peer Assisted Study Sessions (PASS) which involve a mentoring programme, led by students, to assist students with their first-year subjects. The interactive study sessions (more than 60 per week involving about 600 students weekly during 2011) help students with the content of their actual courses and seek to enhance independent learning skills.

2.6.4 Capital and Infrastructure Developments

Consistent with the long-term view it takes in respect of viability, the University will continue to make substantial capital investments over the period of this Plan, with land, buildings, IT infrastructure, computer and other equipment, and library books being the major items.

These investments will take place within the context of the University's strategic direction and its *Campus Master Plan (2010)*, which provides a 20-25 year vision for campus development.

A rolling *Priority Development Plan*, currently extending out to 2020, provides a medium-term framework for property-related capital projects. These account for 75 per cent of annual capital expenditure, identifying both key projects and indicative costs⁸⁶. The remaining 25 per cent of expenditure relates mainly to non-property projects, adaptations and statutory compliance projects.

Individual projects of all kinds are subject to approval via the University's CAWSEP⁸⁷ process, and provision for funding projects is confirmed in the annual University budget round.

The current *Priority Development Plan*, allows for approximately \$330 million of projects through to 2020, including approximately \$50 million in projects carried over from the previous *Critical Space Plan*, and more than \$20 million of projects already approved in principle.

Some \$50 million of *Priority Development Plan* activity is currently tagged for seismic strengthening, with this expenditure occurring progressively through to 2019.

Capital projects already confirmed for the period of this Investment Plan include:

- a new student study centre (the Marsh Study Centre) at the north end of Castle Street;
- completion of the University's new Student Management System;
- the redevelopment of first-year teaching laboratories in the University's science precinct;
- the redevelopment of buildings vacated when the University gymnasium, and Foundation Studies' programmes relocated to the new premises adjacent to the Forsyth Barr stadium site;
- new University childcare facilities.

A further major project that the University will progress over the period of this Investment Plan is the re-development and extension of the current Dental School, which is New Zealand's national centre for dental teaching and research. This and an additional building at our Christchurch campus (see above) are the two largest projects on the current *Priority Development Plan*.

Otago is also continuing with a substantial upgrade of its Local Area Network (LAN) and the progressive roll-out of wireless networks across the campus.

⁸⁶ The *Priority Development Plan* was adopted in 2012 to supersede the previous 2005 *Critical Space Plan*.

⁸⁷ Capital works, significant equipment and other projects.

3.0 Summary of Activity

This section provides a high-level summary of forecasts that are presented at a greater level of detail in attached documents. The University seeks TEC funding support for all eligible forecast enrolments.

3.1 Key Forecasting Assumptions

3.1.1 Overview of Key Forecasting Factors

Otago takes account of a wide range of external and internal factors when forecasting enrolments.

External factors that merit particular consideration are the availability of SAC EFTS funding, and specific changes in Government policy that may impact directly or indirectly on enrolments, national and regional demographic projections, the national economic outlook, the global economic outlook and exchange rates. Key internal factors include pipeline effects which result from intakes in previous years and the impact of specific changes such as the introduction of new programmes and the phasing out of existing programmes.

Two distinguishing points in respect of domestic enrolments at Otago are as follows:

- a very high proportion of our domestic commencing student cohort are school-leavers coming from outside of Dunedin to study here, and the vast majority of these will not come to Otago unless they gain a place in a Residential College. Because the number of applicants for places in Residential Colleges exceeds the number of available places by a wide margin, Otago is buffered against changes in commencing student demand, whether driven by demographic or economic factors⁸⁸;
- the University has a very high proportion of students engaged in full-time study towards multi-year qualifications. This provides an inherent stability in respect of student retention from year to year.

Additional to these long-standing features, and well-established roll capping mechanisms for professional programmes, Otago has in recent years introduced Limitation of Enrolment provisions for all undergraduate qualifications at Otago, and put in place more stringent academic progress criteria. While Limitation of Enrolment and academic progress provisions have de-stabilised enrolment patterns initially, over the medium term they will promote even greater stability and predictability around domestic enrolments, especially at the undergraduate level. Limitation of Enrolment also provides the University with a means of guiding growth into particular subject areas.

International enrolments are inherently challenging to forecast, as complexities such as exchange rates and competition for students on a global scale come into play. Diversification across a range of international markets, as practised by Otago, provides some protection from

⁸⁸A consequence of this is that shifts in commencing domestic enrolments at Otago occur largely independent of demographic trends around school-leavers; indeed, the University's most recent testing of commencing domestic enrolments at Otago against national and local demographic changes has found no statistically significant correlation between the two in the short to medium term. Thus, while Otago maintains a close interest in demographic projections and finds them useful for a range of reasons, forecasting enrolments is not one of those reasons.

major fluctuations, though this is at best a partial protection, especially in times of significant and general global uncertainty.

The Canterbury earthquakes have added a new twist to forecasting in the past two years: the specific effects, which differ for domestic and international students, are detailed in section 2.6.1 above.

3.1.2 Long-Term Expectations

The Otago current long-term forecast, which has been in place since the adoption of the *Campus Master Plan* in 2010, envisages enrolment growth rate of 1.5 per cent per annum over the next 20-25 years. This is half the average annual growth rate achieved by the University in the first decade of the 21st century, and would equal the lowest growth rate ever achieved by the University across a period of two decades⁸⁹.

There is an expectation that the University would have to manage its growth down to the 1.5% average over a twenty-year period, and that it would do so to maintain a clear focus on excellence (as opposed to volume) and for reasons of affordability in terms of infrastructure. The *Campus Master Plan* forecast envisages this growth being split 50:50 in volume terms between undergraduate and postgraduate. This would, over 20-25 years, see postgraduate enrolments increase from the current 16.5% of EFTS to 26% of EFTS.

3.1.3 Overview of Key Forecasting Factors for 2013-2015

The key assumptions that underpin the forecast, and which are expanded on below, are as follows:

- a stable domestic undergraduate first-year enrolment situation now that the University's new Limitation of Enrolment provisions are fully established;
- overall pipeline undergraduate domestic growth, particularly driven by:
 - the impact of successive recent increases in the domestic medical cap;
 - pipeline growth in 2012 first-year enrolments and improved undergraduate retention as a consequence of a higher calibre commencing student cohort and the tightening of academic progress that caused a drop in enrolments in 2011 having taken effect;
 - a small number of new developments at the postgraduate taught level and in specialist areas, as detailed below;
 - modest pipeline postgraduate research growth;
- An initial period of decline in international full-fee student enrolments, due to market conditions and the conclusion of a number of international contracts, followed by a return to growth beyond 2013.

3.2 Enrolment Forecast Summary

⁸⁹ It is similar to the growth rate for 1920 to 1940, a period that covered both a global depression and the onset of a World War.

3.2.1 The Overall Enrolment Forecast

The data provided in the following tables show actual final EFTS for 2009-2011, Otago's latest forecast for final 2012 EFTS, and further forecasts for 2013, 2014 and 2015 which form the basis of our longer-term planning.

EFTS Summary: 2009-2015							
	EFTS Actual			EFTS Forecast			
	2009	2010	2011	2012⁹⁰	2013	2014	2015
TEC SAC Eligible EFTS ⁹¹	17,478	18,030	17,653	17,435	17,694	17,818	17,934
Other TEC Funded EFTS ⁹²	44	55	36	33	0	0	0
Other EFTS ⁹³	1,650	1,834	1,879	1,768	1,701	1,769	1,852
Total	19,172	19,918	19,568	19,236	19,395	19,587	19,786
<i>EFTS change over previous year</i>	<i>842</i>	<i>746</i>	<i>-350</i>	<i>-332</i>	<i>175</i>	<i>192</i>	<i>199</i>
<i>Percentage change over previous year</i>	<i>4.6%</i>	<i>3.9%</i>	<i>-1.8%</i>	<i>-1.7%</i>	<i>0.9%</i>	<i>1.0%</i>	<i>1.0%</i>

Otago is forecasting overall growth of 175 EFTS (0.9%) in 2013, followed by growth of 192 EFTS (1.0%) in 2014 and 198 EFTS (1.0%) in 2015. The elimination of non-SAC TEC-funded EFTS from 2013 reflects the termination of EFTS funding for Community Education short courses.

3.2.2 Mix of Provision for 2013

The detailed mix of provision by funding subject area and level appears in tabular form as Attachment G. This reflects, at a level of greater detail, the assumptions and trends described in summary form below.

Except where otherwise stated, this commentary relates to SAC-eligible EFTS only, and where comparisons are made with 2012 they are made with the forecast final result for 2012, as provided in the August 2012 SDR return.

A change in mix by level is forecast as follows:

- in accordance with Otago's strategic direction and Government expectations, the balance of enrolments continues to shift towards postgraduates. In 2013, postgraduate SAC-eligible EFTS are forecast to increase by 104 EFTS (3.6%) over 2012 and increase to 17.1% of all SAC-eligible EFTS (up from 16.7% in 2012);
- undergraduate degree SAC-eligible EFTS are forecast to increase by 140 EFTS (1.0%) over 2012. The major drivers of undergraduate growth are pipeline increases in

⁹⁰ This is the current projected final result for 2012.

⁹¹ SAC EFTS are enrolments in formal courses of study which are eligible for Government support via the Vote:Education budget. They include the overwhelming majority of EFTS generated by domestic student enrolments, and a small number of EFTS generated by overseas students (e.g. international PhDs) whom the New Zealand Government deems eligible for EFTS funding support.

⁹² Other TEC funded EFTS comprise those funded through the Adult and Community Education (ACE) pool.

⁹³ The majority of 'Other EFTS' are full-cost international students. This group also includes small numbers of students funded via Vote:Health, and doctoral students who have exceeded the 4.0 EFTS limit for SAC funding.

undergraduate medicine (a consequence of previous increases to the cap made by Government) and in selected health science professional areas⁹⁴, and continued undergraduate sciences growth⁹⁵. These increases are partially offset by pipeline decline in a number of other areas⁹⁶;

- sub-degree enrolments, other than for targeted Foundation Studies' transition programmes (which are supported to grow slightly), are phased out completely as the winding down of small sub-degree programmes in sports studies and fitness management commenced in 2011 takes full effect;

A change in enrolment mix by subject area, as alluded to above, is also forecast.

This sees a continuation of the shift to a greater proportion of EFTS in the sciences and health sciences (including health sciences professional programmes) that has been a trend at Otago for several years. This trend is consistent with the Government's priorities around subject areas, and its wish for universities to differentiate themselves around areas of unique or specific strength.

When considering the Otago undergraduate outlook, it is important to recognise that the domestic undergraduate decline of the past two years has largely been a consequence of specific actions taken by the University to improve the calibre of its student cohort. An anticipated steady state in respect of first-year undergraduate enrolments for 2013 will - following four per cent domestic first-year growth achieved in 2012, and with ongoing strong pipeline growth in medicine - support a return to modest undergraduate growth averaging 0.5% per annum over the period of this Investment Plan.

These forecasts do not include any allowance for a further increase in the medical cap from 2013, nor for any classification of components of Otago's applied sciences programme as priority engineering⁹⁷.

The University is forecasting a second year of full-cost international decline in 2013 for reasons fully explained above.

3.2.3 Mix of Provision for 2014 and 2015

There is considerable uncertainty about funding beyond 2013. No decision has yet been made by Government on SAC funding rates for 2014/2015 or on the total amount of funding to be provided for universities in these years, or the exact means by which it will be allocated.

This being so, the mix of provision signalled in this Investment Plan for 2014 and 2015 is provisional. The University reserves the right to update its forecasts for those years in response to changes in the enrolment and funding environment, and notes most importantly that its

⁹⁴ This includes 61 EFTS of pipeline growth in undergraduate medicine (this being the pipeline effect of increases to the medical cap in earlier years), and 50 EFTS of growth – mainly pipeline in nature – across other undergraduate professional programmes. Growth in Māori students enrolments in health sciences professional programmes flowing through from the Tū Kahika foundation programme are included in this.

⁹⁵ Including 48 EFTS of undergraduate degree growth in the core sciences funding category (classification 18), and 15 EFTS of growth at the sub-degree level in this classification. This sub-degree growth is for the University's Foundation Studies' transition programmes, and allows particularly for increased intakes into the highly successful Tū Kahika and PFP programmes for Māori and Pacific students. Otago has seen increased first year enrolments in the sciences again this year, which will have a positive pipeline impact going forward.

⁹⁶ The most significant area of decline is in teacher education. The 42 EFTS drop forecast in this area is largely a pipeline consequence of a reduced intake in 2012. Smaller declines are forecast in the Design subject area (this being a flow-on from the phasing-out of the Design majors) and in Business (this is pipeline in nature).

⁹⁷ The University has been in separate discussions about this possibility with the TEC.

ability to meet both enrolment and performance targets is contingent on the provision of adequate funding, including appropriate indexation for rising costs.

The general expectations for this period are of a continuation of the key trends identified above for domestic enrolments, and solid growth in international full-cost enrolments.

This would see the following main shifts occur by 2015:

- 2.7% (466 EFTS) of growth in SAC-eligible EFTS over 2012, concentrated as follows:
 - postgraduate SAC-eligible EFTS increasing by 201 EFTS (6.9%) over 2012 and increasing to 17.4% of all SAC-eligible EFTS. Approximately two thirds of this forecast growth is in postgraduate taught activity;
 - undergraduate degree SAC-eligible EFTS are forecast to increase by 263 EFTS (1.8%) over 2012. The major drivers of this undergraduate growth are pipeline increases in undergraduate medicine (totalling 143 EFTS over three years) and continued undergraduate sciences growth (totalling 108 EFTS over three years);
- 4.8% growth (84 EFTS) in non-SAC EFTS over 2012. This is full-fee international growth concentrated at the postgraduate taught level as new coursework masters' degrees become available from 2014.

3.2.4 Planned Programme Changes

The University currently offers close to 200 qualifications and, within those qualifications, a wide range of major subjects and subject-specific endorsements. The forecasts of planned enrolments provided with this Investment Plan take account of planned changes in the number and mix of qualifications offered by the University. All significant changes to teaching and learning activities are considered in relation to the University's key strategic goals and objectives. Consultation with, and endorsement by, internal and external stakeholders is also required for all new qualifications, majors and endorsements.

The current constrained funding environment has a particular impact on the ability of the University to pursue new programme developments. This can be seen in the changes proposed for 2013, which include the deletion of a number of existing qualifications, majors and endorsements as well as additions.

In 2013, the University will delete three programmes at the sub-degree level and introduce two new programmes at the undergraduate level.

The programmes to be deleted are as follows:

- Certificate in Fitness Management (CertFitMgt);
- Certificate in Sports Studies (CertSptSt);
- Diploma in Sports Studies (DipSptSt).

New enrolments were suspended in 2011 as a first step to formally deleting these programmes. This has given students part-way through their studies an appropriate opportunity to complete.

The new qualifications proposed for 2013 are honours variants of the long-established Bachelor of Dental Surgery and Bachelor of Physiotherapy degrees. These developments will not attract additional enrolments, but they will provide a pathway for the most able dental and physiotherapy undergraduates to incorporate a sizeable research component within their studies. These honours developments have been endorsed by the relevant professional bodies,

and are consistent both with international best practice, and Health Workforce New Zealand expectations⁹⁸.

The University also plans to build on existing areas of expertise and strengthen study pathways to postgraduate study by introducing six new majors or endorsements in 2013, and to rationalise its offerings by exiting from four previously offered majors or endorsements. Details of these changes, along with a number of other qualification modifications, appear as Attachment H.

Beyond 2013, a major focus of academic programme development will be responding to the opportunities that follow from approval by Universities New Zealand for one-year (180 credit) coursework masters' degrees. As signalled above, the addition of one or more undergraduate engineering-linked majors within the Bachelor of Applied Sciences is also anticipated.

⁹⁸ The dental honours development also responds to a specific recommendation from the 2010 Dental Council of New Zealand (DCNZ) accreditation review.

4.0 Performance Commitments

4.1 TEC Performance Commitments

In accordance with Investment Plan requirements, the University has completed the Performance Commitments template supplied by the TEC. This appears as Attachment I.

When considering the targets Otago is proposing for the TEC-mandated performance indicators, it should be noted that:

- the University is not prepared to commit to shifts in performance that are inconsistent with the direction of the Council-determined objectives and indicators contained in its Statement of Objectives;
- actual performance in relation to a number of the measures may be significantly influenced by factors beyond the institution's control (for example, economic recovery will tend to impact adversely on retention);
- there is likely to be some 'natural' year-to-year fluctuation in performance in many of the areas for which targets are required⁹⁹.

Otago's approach in respect of setting targets for these indicators has been as follows:

- to commit to little or no change in areas where we are already performing well above New Zealand university sector averages, and where further increases in performance could only really be achieved by a lowering of standards as opposed to a real increase in performance (for example, in overall course and qualification completion rates);
- to commit to change in areas where we are performing to a lesser level, and have already identified this as an area for improvement in our Statement of Objectives (for example, in the educational performance of our Pacific Island students);
- to align all targets, as far as possible, with those of our Statement of Objectives.

4.2 Statement of Objectives

Otago's Statement of Objectives for 2013-2015 appears as Attachment J.

This is an updated version of the Statement of Objectives adopted by Council for 2012. The reporting of performance against the Statement of Objectives' indicators and targets will occur in the normal way, via a Statement of Service Performance in the 2013 University of Otago Annual Report.

Beyond 2013, the Statement of Objectives will be reconfigured to align with *Strategic Direction to 2020*.

⁹⁹ Where this has clearly been the case in past years, Otago has moved towards measuring its own performance using multi-year rolling averages.

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