



Shaping Agendas

Promoting Research

Fostering Learning

Focusing on Students

Developing Holistically

Advancing Knowledge

Stimulating Innovation

Making Global Connections

University College Dublin
Strategic Plan to 2014

Forming Global Minds

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Executive
Summary

UCD and its graduates have played an unparalleled role in the development of an independent and successful Irish State. From the time John Henry Newman delivered the lectures that were to be published as *The Idea of a University*, UCD and its antecedent institutions have been committed to the ideals of building a thriving, prosperous nation and preserving and transmitting its heritage. So many of Ireland's leaders, whether in politics, the public service, the arts, sport, business or the professions, spent their formative years at UCD - a track record of which UCD can be justifiably proud and which, at the same time, it feels a duty and a responsibility to sustain.

Five years ago UCD launched a strategic plan focused on contributing to Ireland's future development as the new century unfolds. This plan has delivered:

- Radical reform of UCD's undergraduate curriculum with the launch of the modular, semesterised and credit-based *UCD Horizons* curriculum
- The establishment of graduate schools and structured PhD programmes to support 4th-level training
- The launch of a new research strategy and support system with a particular focus on the development of large thematic multidisciplinary research programmes
- A complete overhaul of academic recruitment, development and promotion systems
- The formulation of a new campus development plan.

This plan sets out the strategic direction for UCD for the next five years, a time which will be among the most challenging in our 155-year history. A defining characteristic of the plan is to build on our excellence in teaching and research and to place greater emphasis on the impact which these activities have on the economic, environmental, social and political life of the nation. Now, in a time of national and global difficulty, UCD is once again committing its intellectual resources to the rebirth of economic prosperity in Ireland.

It is critical in these challenging times that Ireland maintains and develops the outward-looking, internationally aware focus which has been a hallmark of our development as a nation in the recent past. UCD will be in the vanguard of this development. While remaining distinctively and uncompromisingly Irish, UCD will provide opportunities for both students and staff to gain experience in the wider world, will actively welcome international students and staff to Ireland and will provide a resource for the Irish diaspora worldwide. In particular, UCD will play a lead role in the continued

development of Ireland's relationships in North America and Asia. The UCD Confucius Institute Ireland, the first of its kind in this country, will serve as a ready-made channel to develop relationships with China.

This plan will establish innovation as a third, constitutive pillar of UCD's activity and identity, building on the achievements in education and research. This will simultaneously challenge our teachers and researchers to translate excellent education and research into contexts where they may be expected to have a high impact, all the while supplementing more traditional educational concerns with the development of innovative and entrepreneurial capacity amongst our students. The University's ambition to link education, research and innovation more effectively will enable an increasing number of students to convert knowledge, ideas and inventions into the development of life-enhancing products, services and policies in a manner that will enrich all aspects of social and economic life in Ireland and beyond.

“What an empire is in political history, such is a University in the sphere of philosophy and research. It is...the high protecting power of all knowledge and science, of fact and principle, of inquiry and discovery, of experiment and speculation.” John Henry Newman, *The Idea of a University*

A key element of this foregrounding of innovation is the establishment of an *Innovation Alliance* in partnership with Trinity College, Dublin (TCD), including unprecedented levels of collaboration with government and industry. The *Innovation Alliance* itself is intended to be part of a wider national recovery programme leading to, in the government's own terms, a 'Smart Economy', within which our students and graduates will flourish.

A related element of UCD's Strategic Plan to 2014 will see UCD building on its major all-island and international collaborations. We will work closely with Queen's University Belfast (QUB), building on a tripartite agreement signed by UCD, TCD and QUB, in a way that will add value to UCD's academic programmes and advance the twin aims of increased social cohesion and economic development on this island. Through UCD's membership of the *Universitas 21* network of global research universities, we will develop programmes which will offer unprecedented opportunities in terms of student mobility, global research collaborations and development of university management expertise.

Throughout the period of the Strategic Plan to 2014, research at UCD will be focused strategically on four priority themes:

1. Earth Sciences, Energy and the Environment
2. Global Ireland
3. Health and Healthcare Delivery
4. Information, Computation and Communications.

This focus will both capture the range of current UCD research activity and boost significantly this activity through the creation of interdisciplinary synergy and the further mining of an already rich seam of national and international collaboration.

As already mentioned, this plan is being written at a time of global economic turmoil and uncertainty, and its content will inevitably reflect that wider context to a certain degree. While determined to keep the University on a solid financial footing during the period of this plan, we will continue to invest strategically in and to seek government and private support for priority academic activity and development. UCD is committed to playing its part in the achievement of national recovery through developments which will enhance our agenda-shaping education programmes and transform our research and innovation programmes.

One of the critical elements of this plan is a commitment to the achievement of balance. This will see UCD strike an appropriate balance between contributing to the regeneration of economic prosperity and offering a vision which goes beyond immediate constraints to develop new knowledge and challenge accepted truths.

Our plan is not an end in itself but rather marks a milestone in our continuous and self-correcting strategic planning process. We are committed to service through excellence in education, research and innovation. This document, informed by the views of our community of stakeholders, sets out our current thinking on how best to deliver on that commitment.



1.1. Summary of key initiatives

Over the lifetime of this plan, UCD is committed to delivering key initiatives:

1.1.1. Education

- Further develop the *UCD Horizons* undergraduate curriculum, strengthening programmes, fostering student engagement and fully exploiting the flexibility of the modular curriculum
- Ensure all newly appointed staff receive appropriate training and professional development in university teaching
- Mainstream assessment of teaching quality and feedback on the student experience (as a signal of the importance UCD attaches to ongoing enhancement of teaching quality and student engagement it will be the norm that professors contribute to the teaching of first-year undergraduates)
- Focus on stimulating creativity, innovation, entrepreneurship and active citizenship in all our students
- Ensure that the UCD environment and its curriculum prepare graduates for life and work across international borders
- Create a unique set of opportunities and supports for highly talented students through the establishment of the *UCD Ad Astra Academy*
- Establish the *UCD Institute for Learning Innovation and Academic Development* to support UCD's growing community of teaching innovators and educational researchers and to highlight and disseminate, nationally and internationally, UCD's achievements in learning innovation and academic development.

1.1.2. Developing UCD's profile

Over the lifetime of this plan, UCD will realign its institutional profile by:

- Growing and developing graduate education, particularly through the expansion of the taught masters portfolio and the development of doctoral programmes, so that by 2014 one-third of our student body will be graduate students
- Building on our success in widening participation, in particular by ensuring our programmes can be pursued part-time, so that by 2014 students from socio-economically disadvantaged backgrounds, mature students, students with disabilities and part-time students will together comprise 25 per cent of our student body
- Attracting greater numbers of international students with the ultimate objective of 25 per cent of our students being international students.

1.1.3. Research and PhD training

- UCD has prioritised four major research themes which build on the University's established or emerging research strengths, dovetail with national research policy objectives and contribute to the preservation and exploration of Ireland's cultural heritage and the development of solutions for current global challenges. The priority themes are:
 - Earth Sciences, Energy and the Environment
 - Health and Healthcare Delivery
 - Information, Computation and Communications
 - Global Ireland.
- UCD will support the ongoing development of scholars and research programmes in these areas through strategic use of intramural funding and diversification of its extramural funding sources.
- With the support of UCD's graduate schools, structured PhD programmes will be built around major research programmes with a view to developing the talent pool that will underpin the future growth and wider impact of these research initiatives.
- UCD will further refine its research-institute model as a means of fostering large multidisciplinary and interdisciplinary research programmes, including the development of three new institutes:
 1. UCD Earth Sciences Institute
 2. UCD Complex Adaptive Systems Laboratory
 3. UCD Charles Institute (for dermatological research and training).
- The University will develop a new masterplan for the archival, information and communication technologies (ICT) and physical infrastructure required for ongoing support of UCD's humanities and social sciences research.
- While supporting the development of strategic and applied research programmes, UCD will continue to be a vocal advocate for the importance of unfettered enquiry as a critical feature of a successful research-intensive university.

1.1.4. Innovation

- UCD will produce a new breed of innovative, entrepreneurial PhD graduate through the *UCD-TCD Innovation Academy*.
- We will establish a new UCD-TCD joint venture in enterprise development which will act as a one-stop shop supporting commercialisation of university-generated research findings, assisting development of spin-in companies and fostering partnerships with Irish-based industry.
- UCD will develop strategic partnerships with relevant government agencies, local authorities (particularly in Dublin) and other stakeholders to maximise the impact of the State's investment in research on economic development.

1.1.5. Finance

- UCD will expand revenue from academic (graduate and international), commercial and philanthropic areas and thereby lessen reliance on state funding sources.
- UCD will provide better alignment of our cost base with available revenues through prioritised recruitment and aggressive management of non-pay costs.

1.1.6. Human resources

- Building on work already completed during the period of the last plan, UCD will further develop career pathways and opportunities for academic and non-academic staff alike.
- UCD will build on the initial investment the University has made in staff performance and development through the Performance Management Development System (PMDS) process and leadership and mentoring programmes.

1.1.7. Campus infrastructure

- UCD will use of the new Gateway Campus Masterplan to guide the development of Belfield as a living, green and sustainable campus which is both a laboratory for and an exemplar of energy-efficient building design and landscaping.
- UCD will complete the recently launched €300 million capital development programme that includes:
 - Re-development of UCD's Science Centre
 - UCD Sutherland School of Law
 - UCD Charles Institute
 - New Student Learning, Leisure and Sports Centre
 - Development of a new support facility for UCD's international and graduate students
 - Refurbishment and expansion of student residences
 - National Institute for Bioprocessing Research and Training (NIBRT) (in partnership with the IDA).
- UCD will complete a masterplan for and begin redevelopment of the UCD Newman Library Complex and the UCD Michael Smurfit School of Business.
- UCD will further develop the 'leveraged model' for funding of capital development which sees the University partnering with the State and with philanthropists to put in place the key infrastructure necessary to maintain UCD's international competitiveness and to maximise its impact on Ireland's future development.



Mission, vision and values

2.1. Mission

The mission of UCD is to advance knowledge, to pursue truth and to foster learning, in an atmosphere of discovery, creativity and innovation, drawing out the best in each student and contributing to the social, cultural and economic life of Ireland in the wider world.

2.2. Vision

In the process of achieving the objectives and implementing the actions set out in this plan, UCD will be:

- A leading international research-intensive university where excellence in education goes hand in glove with a commitment to research, scholarship, creativity and innovation
- A university where innovation sits alongside education and research as a third, equally significant pillar of activity
- A university committed to increasing levels of collaboration and partnership with Irish and international peers, government and industry
- A university that shapes local and global agendas, supporting where appropriate and challenging where warranted
- A university which is distinctly Irish, diverse, socially inclusive and recognised as world-class
- A university that continues to play a central role in the shaping of modern Ireland, that engages the global Irish community and that offers an educational gateway to Europe for increasing numbers of international students
- A university where the holistic development of the individual is central to our academic, social, cultural and professional lives
- A university where excellence is the benchmark for everything that we do.

2.3. Values

UCD's values are based on a fundamental belief that excellence in teaching, research and innovation (*Ad Astra*) is achievable. Our values have at their core a commitment to equity and fairness (*Comhthrom Féinne*).

UCD is committed to:

- The holistic development of each student to her or his fullest potential
- Strong disciplines and degree programmes as the foundations of interdisciplinarity and innovation
- A conviction that research and teaching are critically interrelated, mutually sustaining and equally valued
- The understanding and development of cultural literacy amongst our students and staff
- The positioning of critical discourse and creative innovation at the centre of our research and educational activity
- Providing a sense of welcome to our students, staff, visitors and all our stakeholders
- Imbuing a strong sense of global citizenship amongst our students and staff
- Independence and autonomy, in the best traditions of universities worldwide
- Transparency and accountability in our external and internal processes
- Excellence, benchmarked against international standards in everything we do.





3

Context

Few if any institutions have played as significant a role in the building of a nation and the preservation, enhancement and transmission of its heritage as UCD. UCD and its graduates have been central to the development of an independent and modern Ireland.

Now, in a time of unprecedented economic crisis, UCD is committing its intellectual resources to the rebirth of economic prosperity in Ireland through its development of innovation as the third pillar of its activity.

This strategic plan has been informed by perhaps the widest consultation process ever undertaken by an Irish university with feedback sought and gained from civic, commercial and cultural leaders as well as UCD alumni, students and both current and retired staff. At its heart is a vision of UCD as a major contributor to the creation, development, dissemination, interpretation, assimilation and application of new knowledge in the 21st century. It was UCD graduates who led the development of independent Ireland into a major international success story by the end of the 20th century. It will be the task of the next generation of UCD graduates to play a similar role in our new, global context.

3.1. Local and global context

As this plan is being written, the global economy as we have known it is in crisis. Amid the headlines announcing new crises almost by the day, it would be all too easy to embrace the counsel of despair. The challenge facing us is not to yield to such dark counsels but to maintain our quality programme offerings throughout the downturn. We will continue to plan, act and invest strategically so that we will be well positioned when economic conditions improve. Moreover, UCD will play its part in forging that recovery through our education, research and innovation pillars.

The initial imperative is for us to be persuasive advocates for the enduring value of investment in Irish higher education. The solution to the current crisis will be developed by our finest and most sophisticated minds, the cultivation of which is the very stock-in-trade of a university. Another challenge we will face - one whose dimensions are, again, global - will be the competition for both student and staff talent: securing, developing and retaining the brightest and best students and teachers will be critical for success.

This is truly a crossroads moment for Irish higher education, where a measure of audacity could achieve so much while failure of nerve could put us back decades. Ireland is at a crucial point in its economic and social development. Our continued prosperity depends upon a smooth and rapid transition to an innovation- and knowledge-driven society.

A distinguishing mark of this plan is the emphasis it gives to innovation as the third pillar of UCD's activity, complementing the traditional twin pillars of education and research. Innovation will be mainstreamed in our 3rd- and 4th-level programmes and in all research activity in the timeframe covered by this plan. A commitment to innovation implies a recognition that we can no longer be a society that relies upon knowledge and inventions created elsewhere but one that participates in, contributes to and exploits leading-edge research and development. Our commitment to innovation will be manifest most clearly through our collaboration with TCD in the *Innovation Alliance*. This is itself a response to the stated national policy priority of developing Ireland as a smart economy as set out in recent Government publications.



Ireland can and should lead the way in developing the higher-education system that produces the new graduates to create, adapt and thrive in the global economy. The universities are central to ensuring Ireland continues to advance this objective. Investing in universities means investing in new and more knowledge and innovation capacity, in the production of a competent and flexible labour force. What is new is that we now need to be at the frontier of the skills process. What has changed, quite dramatically, from the time of the genesis of the Celtic Tiger is that our labour force is no longer low-cost. We have to compensate for this by being smarter, by being in the vanguard of the innovation cycle.

Knowledge is the currency of universities. It is the achievement of competitive advantage in the global contest for knowledge that will refuel Ireland's recovery and will translate directly into economic growth and social cohesion. With proper investment, universities are drivers of economic growth and social change. They hold a unique place in society as an environment where information and prior knowledge are used to educate and develop highly skilled personnel, to stimulate innovation and to create new knowledge through research. UCD is, additionally, an environment that nurtures innovation and promotes a spirit and culture of entrepreneurship, enabling knowledge and innovation to be made actionable for economic and social benefit.

The new Ireland will be created by the young people of today. Through their already-well-developed programmes of reform, Irish universities are producing a new breed of entrepreneurial 3rd-level graduate who will enter and improve both the workplace and the wider society. This reformed 3rd-level sector underpins a new world-class 4th-level that will be critical to creating the knowledge economy and to securing Ireland's international competitive advantage.

4th-Level Ireland is being created right now by a new and very different higher-education sector - one characterised by flexibility, responsiveness and innovation as well as by a fresh retrieval of the best elements of Ireland's eminent educational traditions.

The most important output then from our national *Strategy for Science, Technology and Innovation (SSTI)* will be a new breed of creative, innovative graduate formed in an environment of research, discovery and entrepreneurship. These graduates will populate Irish and multinational organisations in future, ensuring that we are a step ahead of competitors in terms of innovation and value. The learners of today will be the leaders of tomorrow who will deliver a new Ireland and a new world.



3.2. UCD's key achievements, 2005/2008

This plan builds on a platform of successful achievement over the period of the UCD Strategic Plan, 2005/2008. Key achievements over the course of that plan include:

3.2.1. Education and the student experience

- Introduced a truly modular, credit-accumulation curriculum at all levels of all programmes, branded at undergraduate level as *UCD Horizons*.
- Fully embraced the Bologna process by aligning UCD programmes with the three-cycle model (bachelors, masters and doctoral) and by placing emphasis on learning outcomes and quality.
- Enhanced doctoral education with the introduction of the UCD Structured PhD. The UCD Structured PhD enriches the doctoral student experience and provides an appropriate platform for the expansion of doctoral education. UCD has emerged as a leader in graduate education with the creation of five dedicated graduate schools. UCD now hosts 31 per cent of all full-time PhD students in Ireland.
- Developed UCD orientation programme and a range of scholarship schemes to ensure that top students are attracted to and supported while at UCD, as signalled in our dramatically improved performance in relation to CAO (Central Applications Office) first preferences.
- Generated significant increases in the number of UCD staff receiving externally reviewed teaching awards, grants and fellowships.

3.2.2. Research

- Progressed substantially toward becoming one of Europe's leading research-intensive universities, now ranking 33rd amongst universities in Europe (QS World University Rankings 2009 - top European universities).
- Increased peer-reviewed publications by 50 per cent along with a citation rate substantially above average and a high rate of publication in high-impact journals for existing staff across a range of fields. This success is reflected in a 230 per cent increase in competitive funding awards which reached €115 million in 2007/2008.
- Ranked the most successful institution in the Science Foundation Ireland Stokes Chair and Lectureship Programme with 16 awards over a three-year period.
- Demonstrated success in both inter-institutional collaboration and interdisciplinary programmes.
- Developed five dedicated research institutes, two Science Foundation Ireland (SFI) Centres for Science Engineering and Technology (CSETs), upwards of seven SFI Strategic Research Clusters and three major industry partnerships as well as some of the largest national investments in research, including the NIBRT and the National Digital Research Centre.

3.2.3. Innovation

- Augmented infrastructure at NovaUCD in order to exploit the commercial opportunities of UCD-generated research outputs.
- Increased year-on-year volume of inventions, patents and licences by over 50 per cent.
- Through NovaUCD's incubation facilities and related innovation services, UCD has supported 45 high-tech and knowledge-intensive companies, including 15 spin-out companies. This has included such widely publicised success stories as ChangingWorlds and BiancaMed.
- The 25 new ventures currently located at the centre have over 200 employees with investments and realisations in UCD companies of over €200 million.

3.2.4. Transformational

- Completed a radical transformation of UCD academic structures from a configuration of 11 faculties and 110 departments and academic centres to one comprising a more streamlined model with a much reduced number of colleges and schools.
- Introduced a Performance Management Development System (PMDS) which has been successfully completed by over 3,000 staff.
- Implemented a multi-annual financial strategy and budgeting process at university, college, school, support centre and institute level.
- Introduced a university-wide identity and replaced the myriad of logos across the university with a single modern branding in tandem with a comprehensive revamp of the website.
- Secured major gifts, including lead gifts from Dr Peter Sutherland, towards the development of the new UCD School of Law and from the Hume Street Trust towards the Charles Institute as well as a major gift from AIB to the New ERA access programme.



4 Education

4.1. Context and goals

UCD fully recognises that the research and education we provide must rival the best international universities if Ireland is to maintain its position as one of the world's great small nations.

The UCD approach to education draws upon a tradition dating back to the founding vision of John Henry Newman. It builds on UCD's distinct identity as Ireland's largest and most diverse research university. UCD brings together a wider range of academic disciplines than any other university on the island and complements this diversity with the diversity of the staff and student body. The strengths of UCD as an educational environment are the richness and variety of its offerings and their solid foundation in research and scholarship.

The versatility of intellect espoused by Newman is exemplified in the flagship *UCD Horizons* programme which encourages students to explore new areas distinct from their primary area of study. In addition, we have pioneered a series of double majors bringing together professional disciplines with humanities, for example the new degree programme in law and politics. Furthermore, UCD played a lead role in the development of graduate-entry pathways into medicine and veterinary medicine. Notwithstanding the current difficult economic and financial situation, UCD is determined to maintain and enhance the high-quality educational experience it provides and to build even stronger links between teaching and learning and research and innovation, to provide the human and intellectual capital required for national recovery and prosperity.

UCD has made enormous progress in education under the UCD Strategic Plan, 2005/2008, some highlights of which are set out in Section 3 above, and our objective over the next five years will be to maximise the benefits of changes made in this period and to maintain the momentum for success. The *UCD Horizons* undergraduate curriculum is nationally and internationally recognised as a visionary structural reform with great potential. The challenge now is to make the most of this potential to strengthen and enhance our programmes, to create new educational opportunities for students, to provide a broad and liberal education and to facilitate lifelong learning. The modularisation of taught graduate programmes and the development of the UCD Structured PhD establish UCD as a national leader in graduate education. The priority for the next stage of our development is to grow and to develop the taught postgraduate portfolio, attracting greater numbers of national and international students, and to stimulate the development of thematic doctoral programmes in areas of research strength.

UCD's goals over the lifetime of this plan are to:

- Further develop the *UCD Horizons* undergraduate curriculum, strengthening programmes, fostering student engagement and fully exploiting the flexibility of the modular curriculum
- Create a unique set of opportunities and supports for highly talented students through the establishment of the *UCD Ad Astra Academy*
- Grow and develop graduate education, particularly through the expansion of the taught masters portfolio and the development of doctoral programmes, so that by 2014 one-third of our student body will be graduate students
- Focus on stimulating creativity, innovation, entrepreneurship and active citizenship in all our students
- Build on our success in widening participation, in particular by ensuring our programmes can be pursued part-time, so that by 2014 students from socio-economically disadvantaged backgrounds, mature students, students with disabilities and part-time students will together comprise 25 per cent of our student body
- Attract greater numbers of international students, with the ultimate objective of 25 per cent of our students being international students
- Ensure that the UCD environment and its curriculum prepare graduates for life and work across borders, with particular emphasis on Asia, Latin America and the European Union
- Mainstream assessment of teaching quality and feedback on the student experience
- Ensure all newly appointed staff receive appropriate training and professional development in university teaching
- Establish as the norm that all UCD professors contribute to teaching of first-year students
- Establish the *UCD Institute for Learning Innovation and Academic Development (ILIAD)* to support UCD's growing community of teaching innovators and educational researchers and to highlight and disseminate, nationally and internationally, UCD's achievements in learning innovation and academic development.

4.2. The attributes of a UCD graduate

The attributes of the UCD graduate are the starting point and a constant reference for our educational priorities and objectives. The UCD graduate is:

4.2.1. Academically excellent

- With an in-depth knowledge of his or her chosen discipline and an understanding of how knowledge in that discipline is advanced, underpinned with well-developed skills of critical thinking, analysis and reflection
- With an aptitude for continued, self-directed and collaborative learning in academic and professional settings throughout his or her career.

4.2.2. Intellectually flexible and culturally literate

- With a repertoire of analytic and cognitive skills for creative and innovative approaches to new learning contexts and problems
- With strong interpersonal and decision-making skills to bring to his or her individual discipline or profession
- With an understanding of the contributions of different disciplines, approaches and perspectives to the advancement of knowledge, understanding and culture
- With an understanding of the wide-ranging background knowledge necessary to contextualise educational and research programmes.

4.2.3. Globally engaged

- With an appreciation of the richness and diversity of human cultures
- With an awareness of his or her responsibility as a global citizen
- Committed to equity, inclusion and diversity in his or her work and life context.

4.3. The UCD student experience

Building on a tradition that stretches back to its founding rector, John Henry Newman, the student is at the centre of the UCD strategy for education. In his seminal Dublin work, *The Idea of a University*, Newman declared the university to be “a place of teaching universal knowledge”. His successors at UCD today are committed to giving the broadest possible interpretation to the implementation of this ideal. Consequently, UCD is committed to recruiting and nurturing high-achieving students with demonstrated capabilities in learning, sport and the performing arts. The challenge to consolidate and enhance our heritage in relation to the quality of the UCD student experience and the UCD graduate is both an inspiration and a constant reference point for our strategic educational priorities and objectives.

Through the achievements of the past few years, UCD has put in place much of the infrastructural framework necessary to deliver high-quality opportunities for our students. These include the *UCD Horizons* programme, graduate schools and updated student facilities, the next major phase of which will come on stream in autumn 2011.

The UCD student experience aims to be:

- A holistic journey of discovery where each student is given every possible encouragement and support to achieve her or his full potential, in both academic and personal spheres
- Academically excellent, where students are given the foundation for a life of the mind that will persist throughout their adult lives
- International and culturally diverse, preparing students for work and life in many different cultures and environments
- An opportunity for students to develop their social and cultural skills and awareness, particularly through the hundreds of UCD clubs and societies
- One where students form the habits for a healthy lifestyle including encouragement to engage in sport and physical exercise
- One where structured volunteering and community-engagement activities develop a commitment to active citizenship
- One which provides mentorship, guidance and support to prepare students for their career or profession
- A supportive experience which provides the necessary medical and psychological supports for students who are vulnerable or at risk.

4.4. Strategic objectives

UCD has identified a set of key objectives for the period covered by this plan. Collaboration will be essential to achieving these. We will build on two important alliances: the *Dublin Region Higher Education Alliance*, which supports collaboration in enhancement of learning, doctoral education, internationalisation and widening participation, and the *UCD-TCD Innovation Alliance*, which will establish innovation alongside teaching and research as a core activity for the participating universities.

4.4.1. Foster early and lasting student engagement

The challenge of fully engaging a diverse student body within a mass higher-education system is the single most important educational issue facing the modern university. UCD will concentrate on early intervention to ensure student engagement in the first year, establishing from the outset our expectations of students and promoting and fostering learning behaviours that will ensure success at university level.

The priority actions in this area will include:

- The creation of a unique set of opportunities and supports for highly talented students through the establishment of the *UCD Ad Astra Academy*, which will provide a collegial identity for high-achieving students and will encourage further achievement with access to challenging modules, individual academic advice and tailored programmes, and accelerated access to graduate studies
- A review and reform of the structure, outcomes, assessment and remediation strategies for first year, and in particular the first semester, to support the transition from 2nd- to 3rd-level and to adapt to the different needs of different students
- The further development of approaches to engage and support students, especially in their first year, including small-group learning, peer-mentoring, academic advice and mentoring, specific supports for the development of transferable skills and information literacy and general welfare supports
- The enhancement of programme-specific orientation, to include academic advice and orientation.

4.4.2. Grow and develop graduate education

UCD recognises the value of the three-cycle bachelors-masters-doctoral framework which is at the core of the Bologna process. Through enhanced interdisciplinary approaches, UCD will focus on developing its taught graduate programmes, further enhancing doctoral studies and establishing innovation alongside research and taught components as a third strand of activity within graduate programmes.

The priority actions in this area will include:

- A comprehensive enhancement of our masters provision, emphasising the flexibility of the modular structure, responsiveness to the needs of students and society, the development of individually tailored programmes and alignment with research strengths
- The further development of the UCD Structured PhD and thematic programmes with the introduction of innovation and entrepreneurship as a core element of doctoral training
- A significant development of the continuing professional development and executive education portfolio.

4.4.3. Strengthen and enhance academic disciplines and programmes

UCD recognises the centrality of a strong undergraduate base, both as an end in itself and as the bedrock of our graduate education and research activity and accepts as a core principle that sound education within subjects or disciplines is a prerequisite for creativity, innovation and interdisciplinarity. UCD will focus on students achieving specified learning outcomes, developing the strength of

each academic discipline, while also providing the opportunity for broader liberal education. UCD will continue to take concrete and effective steps to link teaching, research and innovation. This approach will form not only the next generation of researchers but also a wider cohort of graduates committed to innovation and entrepreneurship, economic and social, who will leverage the outcomes of research for wider societal benefit. It will also provide a context for introducing students to emergent fields of study that combine knowledge and approaches from multiple disciplines in finding solutions to the complex challenges facing society.

The priority actions in this area will include:

- The development of specific graduate attributes and programme outcomes for each programme area and the alignment of the curriculum with programme outcomes
- The further exploitation of the modular framework to allow a wider range of coherent pathways within programmes and to allow individual students to adapt the curriculum to their prior learning, aptitudes, abilities and goals
- The enhancement of elective opportunities to provide a broader educational experience
- Strengthening the links between the curriculum and learning activities in each programme and the research activities associated with that programme research activity and taught programmes
- Diversifying of the range of research and innovation experiences available to students and embedding these in the curriculum from the earliest stages
- Using new approaches to teaching, learning and assessment to embed research and innovation in the curriculum
- A structured approach to the involvement of doctoral students and post-doctoral fellows in the teaching and mentoring of undergraduate and taught graduate students.

4.4.4. Stimulate creativity, innovation, entrepreneurship and active citizenship

As well as producing students with a high level of expertise in their own disciplines, UCD will focus on fostering wider capacities essential for employability, innovation, entrepreneurship and active citizenship. These wider capacities include creativity, critical thinking and the skills to communicate effectively, solve problems and work in and lead teams.

The priority actions in this area will include:

- Adapting our approach to teaching, learning and assessment to stimulate creativity and innovation
- Developing general and discipline-specific modules on innovation and entrepreneurship

- Developing new programmes combining technical and professional education with business and management science
- Establishing career development and planning modules
- Encouraging, accrediting and rewarding student volunteering, leadership and active citizenship.

4.4.5. Widen participation and support lifelong learning

UCD will broaden the range of opportunities for students with diverse backgrounds to participate in our educational programmes and, in particular, will capitalise on new, flexible modes of course delivery such as e-learning and distance learning to enable more inclusive approaches for learners at different stages of their personal and professional lives. We will consolidate and develop existing access programmes while significantly expanding opportunities and supports for mature and lifelong learners.

Specific actions will include:

- The consolidation and development of existing access initiatives to ensure participation of mature students, those from socio-economically disadvantaged backgrounds and students with disabilities in all UCD undergraduate degree programmes
- A significant expansion of the opportunities and supports for part-time study at undergraduate levels
- Enlargement of opportunities for continuing professional development, especially by making the taught graduate portfolio available in part-time, flexible and tailored modes
- Creating better links between university-taught programmes and its adult-education provision to provide new opportunities for lifelong learning
- The monitoring of persistence and progression patterns to graduate study and proactive intervention to understand and mitigate barriers to progression.

4.4.6. Internationalise the student experience

UCD will provide an international context for the educational experience, giving students the tools with which to contribute proactively to the international community as global citizens and preparing them for life and work across borders and cultures. UCD has significantly broadened its international perspective in recent years and will place particular emphasis during the period of this plan on building links with Asia, Latin America and the European Union while deepening links with the USA, UK and Singapore. This will involve increasing and further diversifying the cohort of international students and staff at UCD and extending the range of opportunities available to UCD students to add an international element to their university experience.

Specific actions will include:

- The development of a range of sustainable and long-term international institutional relationships to provide significantly expanded opportunities for students' mobility and exchange
- Increasing and further diversifying the cohort of international students at UCD by focusing on attracting students to specific programmes, with an emphasis on significantly increasing the number of international students at masters level
- Exploiting the advantages of semesterisation and modularisation to create new and flexible opportunities for student exchange and mobility
- The development of a range of innovative approaches to provide students with an international experience.

4.4.7. Excel in teaching, learning innovation and academic development

The success of this strategy will depend on the fundamentals: excellence and innovation in teaching and learning. UCD will take a range of strategic actions to ensure these fundamentals.

Specifically we will:

- Mainstream the assessment and enhancement of teaching quality utilising student evaluation of modules and programmes, student satisfaction and experience surveys and feedback on the student experience
- Establish the *UCD Institute for Learning Innovation and Academic Development* to support UCD's growing community of teaching innovators and educational researchers and to highlight and disseminate, nationally and internationally, UCD's achievements in learning innovation and academic development
- Devise effective approaches to support the academic development of staff and to ensure all newly appointed staff receive appropriate training and professional development in university teaching
- Recognise and support those who successfully enhance the quality of education through their outstanding teaching and educational leadership
- Support effective teaching and learning through the provision of high-quality, reliable and user-friendly academic, administrative and student support services and systems.

4.5. Key metrics and performance indicators

UCD will assess its progress against the objectives set out above using the following metrics.

- Staff-FTE (full time equivalent) to student-FTE ratio (internationally benchmarked)
- Academic staff FTE to non-academic staff FTE (internationally benchmarked)
- CAO first preferences: UCD will continue to attract more first preferences than any other Irish university
- New undergraduate entrants with greater than 500 points or equivalent
- Progression and retention from first year to second year
- Undergraduate degree completion rate and time to complete degree
- PhD completion rate target: greater than 90 per cent. Time to completion: 4.2 years for 80 per cent of PhD students
- Percentage of graduate students: increase from 26 per cent to 33 per cent over the lifetime of this plan
- Percentage of non-traditional students on undergraduate degree programmes: increase from 17 per cent to 25 per cent by 2013/14
- Percentage of international students will increase from 17 per cent towards 25 per cent, with the percentage of non-European Union students increasing from 9 to 15 per cent by 2013/14
- Student satisfaction survey: very good to excellent performance on an internationally benchmarked survey of student satisfaction and engagement.

In addition to these indicators, the following will be used to measure the quality of the student experience at UCD:

- The proportion of students engaged in community engagement: target 30 per cent of our students should partake in some community-based activity while at UCD
- The proportion of students actively engaging in sports: target of 60 per cent over the life of the plan involved in organised sport and 80 per cent involved in regular physical exercise (this will be monitored by survey)
- The proportion of students that regularly contribute to UCD societies: target of 60 per cent over the life of the plan
- The quality and availability of student health and counselling services will be baselined and monitored over the life of the plan.



5.1. Context and overarching goals

5.1.1. Emerging challenges

At the heart of UCD's research strategy is the ambition to address the challenges that will shape Ireland's future and its role in the wider world. Key national issues include environment, energy, agrifood, health, ICT, financial services and the development of evidence-based policy. These align with many of the current global challenges in areas such as financial risk, energy, food shortage and environment. To address these issues, funding agencies are shifting their resources towards more programmatic research. The US National Science Foundation, for example, has redirected 50 per cent of its funding towards interdisciplinary research. Furthermore, research is experiencing an inevitable churn as major themes fade from importance and new areas emerge faster than ever. In part this churn is driven by technology, which in some cases has been slow to deliver on expectations and in other cases has been rendered obsolete by new developments. This identifies a requirement to develop a strategic approach to information and knowledge management that guides investment in our technology-based programmes and assures both the development of robust and appropriate local computational infrastructures and access to emergent global e-infrastructure (or cyberinfrastructure).

UCD will foster:

- Basic research embedded in strong disciplines
- Creative interdisciplinary programmes that draw on these disciplines to promote new fields of study
- Initiatives that exploit new knowledge to inform public policy and to stimulate economic development in areas of national priority.

The success of the approach is dependent on the strength of disciplines and on individuals who can lead across disciplinary boundaries.

5.1.2. Challenges for Ireland

The UCD Strategy is being developed against a background of unprecedented change. Ireland faces a radical economic reversal and a very uncertain future. The decline in public confidence and the systemic loss of competitiveness in low-end manufacturing industry makes it imperative that Ireland creates new industry, helps existing industry to develop and further develops its attractiveness as a destination for high value-added foreign investment. As Ireland's largest university, UCD will play a major role in the national recovery process with particular emphasis on key areas such as biopharmaceuticals, ICT, renewable energy and agrifood, all of which link to priority UCD research themes. This has been recognised in *Building Ireland's Smart Economy*, the government's framework for sustainable economic

renewal announced in December 2008. A major strand of the framework, entitled *The 'Ideas' Economy Establishing 'The Innovation Island'* aims to "make Ireland the innovation and commercialisation capital of Europe - a country that combines the features of an attractive home for innovative multinationals while also being a highly attractive incubation environment for the best entrepreneurs in Europe and beyond".

It is equally important in these challenging times that Ireland does not lose sight of its cultural heritage and tradition, retaining its identity, engaging its diaspora and developing its culture as a valuable contributor to economic and social renewal.

5.1.3. Challenges for UCD

UCD is well positioned to address the challenges outlined by government. The previous strategy cycle, 2005/2008, has seen extraordinary growth in research activity in the University. UCD has made substantial progress towards its ambition of becoming one of Europe's leading research-intensive universities and now ranks 33rd amongst universities in Europe (QS World University Rankings 2009 - top European universities). There is an emerging focus on interdisciplinary research that harnesses the diversity of the University and the partnerships we have formed with other academic institutions and industry.

The University's emerging research programmes provide the foundation for a more ambitious and challenging horizon. In recent years, UCD has grown its research programmes in areas such as environment, energy and health, drawing on the rich and unique mix of expertise across its campus. Even with such progress, UCD recognises that it needs to collaborate if it is to compete globally in research and contribute to the emergence of an innovation culture. The key challenge for research at UCD will be to continue to build on the considerable success of the past few years and to sustain its existing programmes in the face of a major economic challenge. This will clearly imply focusing on areas of known strength in times of declining availability of research funding. UCD attracted 26 per cent of the nearly €280 million of research revenues reported by the seven universities in 2006/2007, accounting for 18 per cent of the University's total income. However, recurrent funding for research by all state agencies has been cut in 2010, impacting disproportionately on new grants and resulting in a fall in research income by as much as 40 per cent in the next three to four years. The University must increase and diversify its funding from non-Exchequer sources, including European Union grants and those arising from industry partnerships (now 9 per cent and 6 per cent, respectively, of UCD's recurrent research income).

While we make strong argument elsewhere in this plan for the practical utility and benefit of investment in UCD's research infrastructure and activity, we assert with equal force that this return on investment is dependent on the strength of our core disciplines where knowledge is pursued as an end in itself. The visible achievement of innovative products, services and policies is only possible if built on a broad and deep foundation of scholarship across a wide range of disciplines. In summary, to achieve our targets and realise fully our research potential, UCD must harness all of the disciplines and resources of the University to contribute to the development of an innovation culture in Ireland.

5.2. Objectives

It is critical that UCD continues to put in place a robust research infrastructure to effectively support research initiatives and applications, to grow and develop the research capabilities of our staff and to communicate our outputs and successes to wider stakeholder groups.

In this regard, UCD's objectives over the period of the plan will include the following:

- Continue to develop an academic community of top-class scholars with a vibrant research culture
- Become a leader in translating relevant research findings for cultural, economic and societal benefit.

UCD will:

- Continue to invest in our core disciplines as the bedrock of individual scholarship and postgraduate education
- Create structures to support the development of the major research themes and sub-themes
- Develop new talent as future research leaders through external programmes, effective mentoring and the further development of career pathways and opportunities
- Recruit research leaders and talented young researchers through the SFI Stokes and similar programmes and through UCD's own resources
- Develop seamless pathways from undergraduate to postgraduate to researcher that imbue our teaching with the latest developments in research and discovery
- Build the *Innovation Alliance* with TCD as a key corporate and research priority
- Invest in the infrastructure for research including buildings, technology platforms and ICT
- Promote interdisciplinarity through measures including
 - focus on institutes and centres
 - seed funding for interdisciplinary initiatives
 - provision of undergraduate research opportunities
 - development of the graduate schools
 - design of new facilities

- Diversify our funding base by targeting European Union, US and industry funding
- Develop a knowledge-management system to enhance impact and commercialisation
- Target overheads to successful researchers and academic units
- Develop research support services as a tailored and decentralised system.

5.3. Major research themes

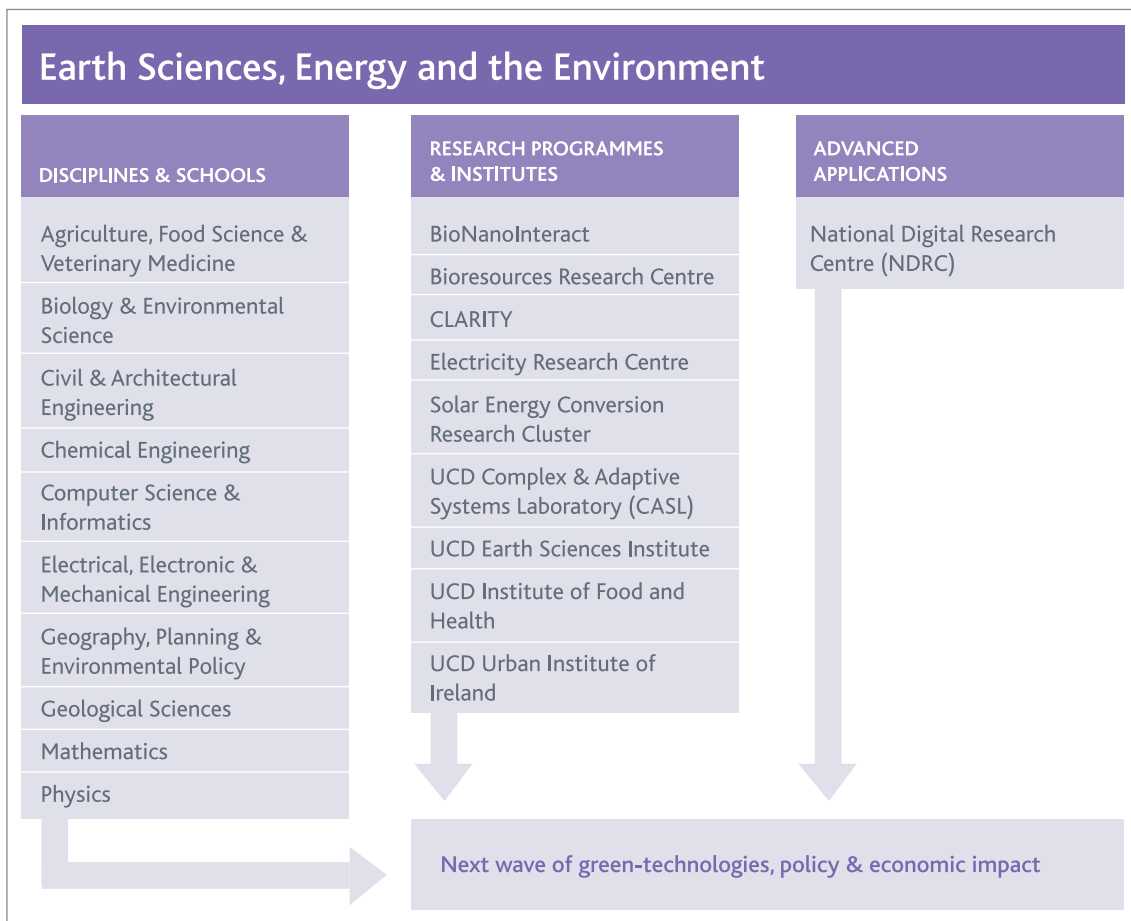
UCD will focus effort and resources on the four major research themes:

1. Earth Sciences, Energy and the Environment
2. Global Ireland
3. Health and Healthcare Delivery
4. Information, Computation and Communications

These major research themes span from basic disciplines and individual scholarship through to large-scale interdisciplinary programmes and on to more applied research, technology resources and engagement with industry. While these thematic research areas will receive particular attention, UCD academics will be engaged broadly, remaining committed to Newman's ideal of versatility of intellect across our entire range of disciplines in the humanities and the sciences: it is from the richness and diversity of our intellectual efforts within traditional disciplinary boundaries that innovative developments such as those set out below derive.

5.3.1. Earth Sciences, Energy and the Environment

A key objective of the *Building Ireland's Smart Economy* framework is the greening of the Irish economy through "enhancing the environment and securing energy supplies". 'The Smart Economy' is a 'green economy' in that it recognises the interrelated challenges of climate change, environmental resources and energy security. It involves the transition to a low-carbon economy and recognises the opportunities for investment and employment in clean industry. This strategy replaces the expenditure on fossil-fuel-based energy production with an investment in renewable energy and increased energy efficiency, thereby reducing demand, wastage and costs. The strategy provides opportunities for Ireland's economy through innovation of green technologies and protects employment by making Ireland a competitive destination for foreign direct investment (FDI), where industry has access to affordable energy and technologies that enable it to meet environmental obligations.



Resources spanning Earth Sciences, Energy and the Environment

UCD has developed a major capacity in research on energy and the environment, drawing on strong disciplines in agrifood, biology, chemistry, engineering, geology and physics. The University has unique resources in the Irish context in areas such as agrifood, plant biology and experimental atmospheres, computational and simulation science and its industry linkages through major funded programmes. These include CLARITY, the Solar Research Conversion Cluster and a collaborative Competence Centre on biorefining. The theme of Earth Sciences, Energy and the Environment builds on this unique capability to find solutions to key challenges in sustainable energy, climate change and nature conservation which are relevant for Ireland and that contribute to global understanding. The programme has a unique policy dimension through the Urban Institute of Ireland and its collaborations with relevant national agencies. A key goal of the research in this area is to enable achievement of the targets set out in the Government's white paper on energy and Ireland's obligations under international treaties on the environment. It will also enable Ireland to meet future challenges in emerging areas such as nanotechnology. The Earth Sciences, Energy and the Environment theme builds on a number of resources in UCD, including UCD

Urban Institute of Ireland, UCD Institute of Food and Health, the nanobiology programme BioNanoInteract (an SFI-funded Strategic Research Cluster), the CLARITY CSET, the National Digital Research Centre (NDRC) and UCD Complex and Adaptive Systems Laboratory.

Major areas for research include:

- Earth systems, including atmosphere and climate change, geosystems and water resources
- Energy research, including renewable, clean, secure and sustainable energy, power systems, building technology and economics
- Biosystems, including bioresources, biocomplexity, food and global change biology
- Urban systems, including the built environment, transport and geographic information systems
- Environment and energy innovation, including policy development.

The theme will undoubtedly evolve, harnessing convergent technologies to provide unique solutions in such emerging areas as nanotoxicity, ubiquitous monitoring and environmental bioprocessing.

5.3.2. Transforming the study of Ireland and the Irish worldwide

UCD has Ireland’s most diverse and most developed capacity in the humanities and social sciences. This is directed at understanding our past, engaging with the present and innovating for the future. The theme Global Ireland builds major research programmes across a spectrum of inquiry ranging from archaeology to the behavioural social sciences. The unifying feature is the focus on Ireland and the shared commitment to comparative method and contextual analysis. The comparative perspectives underpinning the Global Ireland research theme include North-South, Anglo-Irish, European Union, Irish-American and the Irish diaspora, post-colonial and global. The European and global perspectives are particularly important in coming to grips with the contemporary crisis. The theme Global Ireland builds on three major areas of strength: the UCD

Geary Institute, the UCD Humanities Institute of Ireland (HII) and the UCD John Hume Institute for Global Irish Studies.

The UCD Geary Institute has a national and international reputation in microeconomics, quantitative social sciences and behaviour, leveraging the concept of Ireland as a unique laboratory for evidence-based policy formation.

The major research themes within the UCD Geary Institute will include:

- Behavioural aspects of health and welfare
- The integration of economics, developmental psychology, epigenetics and biosocial sciences to focus on issues of child health, education and parental investment and on the role of the family
- Analysis of political attitudes and behaviour and how they are shaped by context.



Resources spanning Global Ireland

Working with national and international academic, agency and industry partners, the UCD Geary Institute will contribute to an innovative policy environment that can respond flexibly to a rapidly changing European and global economy.

The UCD Humanities Institute of Ireland (HII) has served to establish UCD as Ireland's pre-eminent centre for graduate formation and research in the humanities, with a particular emphasis on thematic interdisciplinary research initiatives.

Since its inception in 2002, it has:

- Hosted over 50 conferences and 100 seminars
- Achieved a 95 per cent completion rate for humanities PhDs
- Developed an international reputation through the quality of its peer-reviewed publications.

Over the period of this plan, the HII programme will focus on 'Society, Culture and Change' and bring this to bear on the overarching Global Ireland theme.

The UCD John Hume Institute for Global Irish Studies brings together the humanities and the social sciences, adopting a radical interdisciplinary approach to transform the study of Ireland and the Irish worldwide. Over time, Ireland has been exposed to successive waves of external influence. Similarly, successive generations of Irish men and women have contributed to the transformation and development of societies across the globe, from Argentina to Zambia. These are best understood in comparative and international contexts rather than as a single-country case study. UCD is building the capacity to conduct integrative research on Ireland and to deliver associated innovative teaching and learning programmes at all levels.

This work is founded upon the University's unique resources and archival collections, which include:

- The Delargy Centre for Irish Folklore collection
- The Irish Franciscan Archive
- A growing collection of political archives and ministerial private papers
- Diverse library special collections that span the 16th through to the 20th century.

Resources established during the previous UCD five-year strategic planning period include:

- Digital collections available through the Irish Virtual Research Library and Archive (IVRLA) and the Irish Social Science Data Archive (ISSDA)
- Additional resources at the National Digital Research Centre.

While work on these new virtual resources has focused to date on development of technological infrastructure and acquisition of critical masses of data and information, the current strategic plan calls for further development of services that enable their content to be integrated with computational workflows and that provide new interfaces that enhance their value and extend their impact. It also calls for planning to assure their sustainability by embedding them in the University's organisational fabric.

UCD will build on the response to existing initiatives funded under Programme for Research in Third-Level Institutions (PRTLII) cycle 4, including work on:

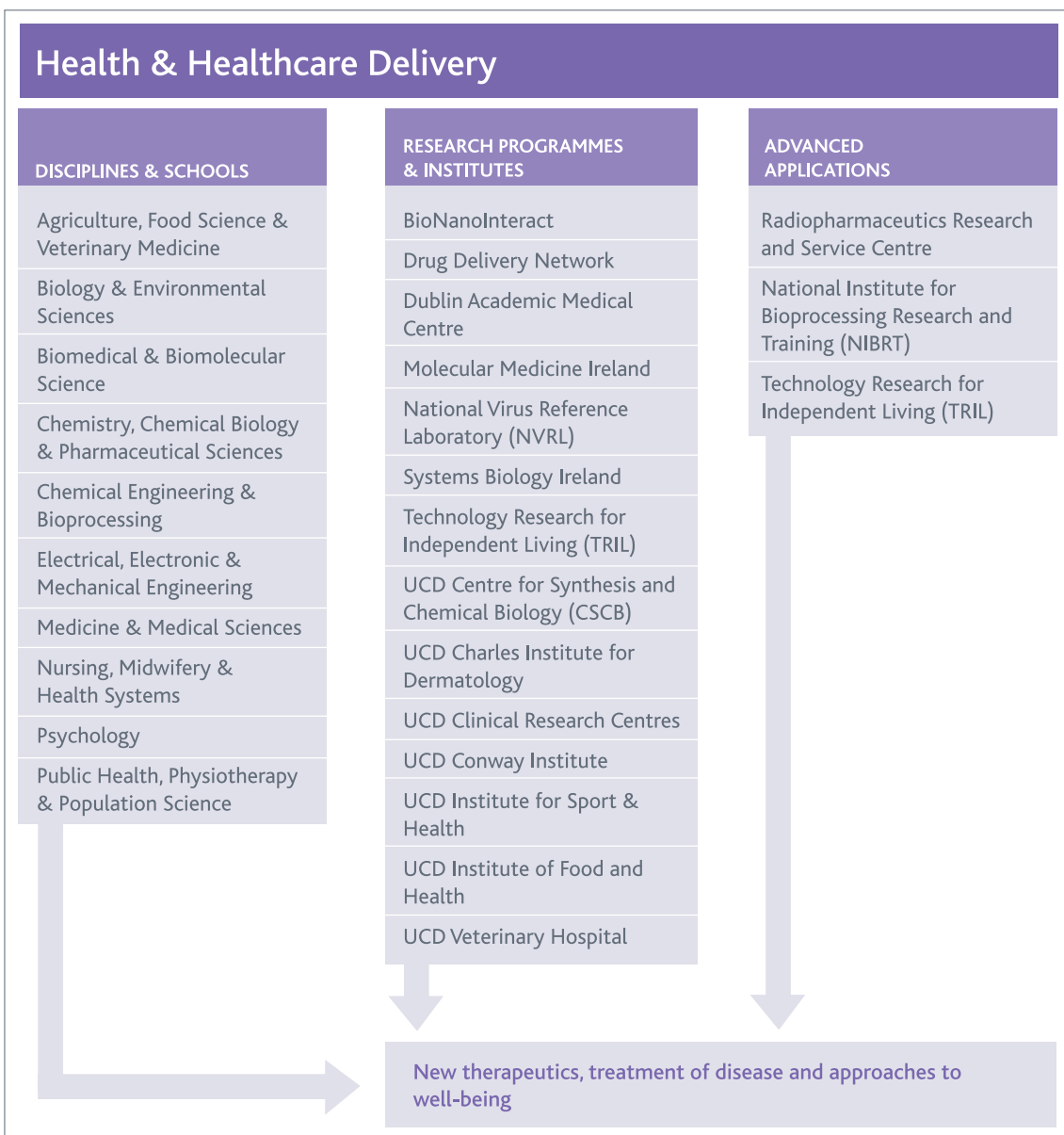
- The Footprints of Ireland
- Heritage and Landscape and Irish Identities
- Cultural and Linguistic Expression
- Towards 2016
- The Irish experience of Conflict Resolution.



5.3.3. Health and Healthcare Delivery

Developments in physics, chemistry, computer information and engineering provide unprecedented opportunity in the life sciences, not least in making available technologies that allow an unbiased interrogation of cell systems and whole organisms. The intersection of these disciplines and, in particular, the underpinning of engineering will have a profound effect on our ability to address major challenges in animal and human health.

UCD is uniquely placed to contribute to our fundamental understanding of disease mechanisms and to translate these findings for the benefit of society. Our biomedical programme is focused on several major challenges that are impacting health nationally and internationally, such as diabetes, infection, reproductive biology, skin disease and neurodegeneration. Our focus is not solely on disease but on providing solutions that enable wellness, for example through our Food and Health Programme and our Technology Research for Independent Living (TRIL).



Resources spanning Health and Healthcare Delivery

We will further develop this interdisciplinary approach by developing an integrative biology programme across science and engineering, strengthened by an underpinning in computational science and informatics. We will harness the wealth of expertise and newly funded programmes to explore innovations in nanomedicine, stem-cell therapeutics and biopharmaceuticals. We will build on our expertise in life sciences and humanities to develop innovative programmes in population health, in emerging areas such as epigenetics applied to the social sciences and in new approaches to behavioural economics. We will work through collaboration with TCD through the *Innovation Alliance*, to create world-class programmes in complementary areas and harness these for social and economic benefit.

In particular, the prioritised programmes within this theme will:

- Contribute to the delivery of a world-class health service within our affiliated teaching hospitals
- Contribute to international development
- Dovetail with Ireland's pharmaceutical and medical device industries
- Underpin undergraduate and postgraduate programmes in health and biomedical sciences.

The Health and Healthcare Delivery theme builds on unique resources at UCD, including:

- UCD Charles Institute of Dermatology
- UCD College of Life Sciences Integrative Biology Programme
- UCD Conway Institute of Biomolecular and Biomedical Research

- UCD Centre for Synthesis and Chemical Biology
- UCD Institute of Food and Health
- Systems Biology Ireland
- Technology Research for Independent Living (TRIL)
- The National Institute for Bioprocessing Research and Training (NIBRT)
- Dublin Academic Medical Centre, which brings together the resources of UCD, St Vincent's University Hospital, Mater Misericordiae Hospital and other UCD-affiliated teaching hospitals
- The National Virus Reference Laboratory
- UCD Clinical Research Centres at affiliated teaching hospitals
- UCD Veterinary Hospital.

A critical foundation for the development of this theme has been the integration of areas such as biomolecular and biomedical science, food science, agriculture, human and veterinary medicine, performance science and public health in a unified academic structure: the UCD College of Life Sciences. A second critical enabler is the focusing of all biomedical research through the UCD Conway Institute. A third critical factor has been the creation of strong translational research links with UCD's major affiliated teaching hospitals and through the groundbreaking strategic alliance that is Molecular Medicine Ireland.

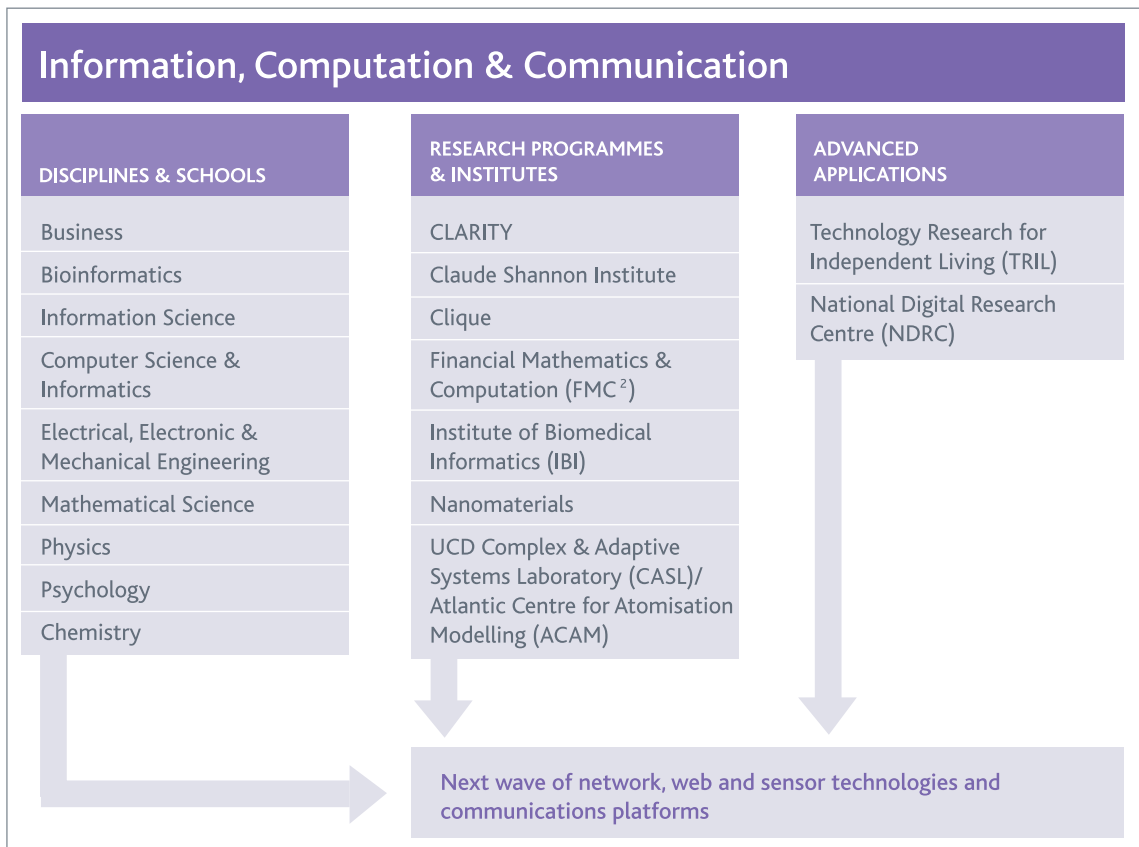
Major programmes within this theme will include food and health, biopharmaceuticals and pharmacological science, translational medicine, bioengineering and public health.



5.3.4. Information, Computation and Communications

Science and engineering in the 21st century are data-driven and computationally intensive. From the life sciences to economics, from climate and environmental modelling to social sciences, and from neuroscience to communications, it is clear that modern scientific enquiry requires a deep understanding of informational relationships and dynamics achieved through the computational and mathematical properties of the

systems themselves. UCD's opportunity in this area derives in the first instance from the existence of the University's major cognate research strengths. Of equal importance, however, is the identification of information, computation and communications as being of major strategic importance to Ireland's ambition of creating a knowledge economy and, crucially, a judgment that it is the area where the largest skills gap exists at postgraduate level.



Resources spanning Information, Computation and Communications

The theme builds on major UCD investments, resources and collaborations, including:

- UCD Complex and Adaptive Systems Laboratory (CASL)
- Claude Shannon Institute for Discrete Mathematics, Coding and Cryptography
- Institute of Biomedical Informatics
- CLARITY (formerly, Adaptive Information Cluster), creating the sensor web
- NDRC.

UCD's unique capability in this area was enabled by the inclusion of engineering, mathematical and physical sciences and computer science in a unified academic structure: the UCD College of Engineering, Mathematical and Physical Sciences. Another critical enabler has been the creation of the CASL, a new facility that brings together 200 scientists and postgraduate students from mathematics, engineering, computer science, biology, bioinformatics and finance.

The CASL underpins the emerging research and educational programmes, such as systems biology, wireless technologies, digital media and bioengineering, and provides access to unique resources, including high-end computing and the UCD Data Centre.

5.4. Key metrics and performance indicators

UCD will assess its progress against the objectives set out above using the following metrics.

- Peer-reviewed (quality) publications per staff member: publications in a given year per staff member
- Number of publications in top-ranked outlets (top 10 per cent of journals in a given discipline or top-ranked book and monograph publishers)
- Percentage of research-active staff. Taking into account disciplinary norms, a research-active academic will have regularly supervised postgraduates, published quality work in his or her field of expertise and/or attracted appropriate extramural research funding. It is targeted that by 2014, 90 per cent of UCD academic staff will be research active.
- Competitive peer-reviewed extramural research awards: success with major Irish and international funding programmes, measured in terms of market share.





Innovation and Partnership

6.1. Context and overarching goals

Over the past four years, UCD has made great strides in both its traditional core functions of education and research and in their mutual reinforcement. Over the period of this new strategic plan, UCD will develop innovation as the third pillar of the University's core mission of service to Ireland in the wider world. In so doing, it will be made clear at each stage of the process that UCD innovation relates both to economic development and to culture and society which it will serve through the nurturing of the creative environment and the evidence-based design of better and more efficient social services.

The pivotal development in the innovation sphere during the period of this plan will be the *UCD-TCD Innovation Alliance*. The *Innovation Alliance* is comprised of three major strands:

1. A joint venture in business development that will see UCD and TCD bring together their technology-transfer and enterprise-development activities with ambitious targets for job creation through the formation of spin-out companies, the support of spin-in companies and Irish small to medium enterprises, and the development of substantive and sustainable partnerships with foreign multinational companies
2. The formation of a new UCD-TCD 4th-level *Innovation Academy* whose aim is nothing less than the formation of the minds of a new, globally conscious generation of innovative, creative and entrepreneurial graduates who will play the same leadership role for Ireland on the international stage that 20th-century graduates did for the newly independent Ireland
3. A new partnership with government and its agencies, the business and venture-capital community and other stakeholders with the goal of developing the policies and supports necessary to establish Ireland as a thriving innovation ecosystem.

This alliance is a radical partnership between the education sector, the State and its agencies and the business and venture capital communities with an objective of developing Ireland as a global innovation hub. The *Alliance* will work to develop a world-class ecosystem for innovation that will drive enterprise development and the creation of sustainable high-value jobs. By forming the *Innovation Alliance* the universities recognise the need to evolve and play a powerful role within such an ecosystem.

There is a critical need to create innovation networks at a national level and to invest in their evolution in order to optimise university collaboration and to facilitate engagement by industry.

Key national partnerships already developed by UCD and on which the *Innovation Alliance* will build include:

- Molecular Medicine Ireland, a ground-breaking collaboration formerly known as the Dublin Molecular Medicine Centre and now extending beyond the initial UCD-TCD partnership to include other medical schools in Ireland
- The National Institute for Bioprocessing Research Training (NIBRT), leveraging UCD's expertise in chemical engineering and cell biology, structural biology at TCD and the downstream processing and glycobiology at Dublin City University (DCU) and now including the wider community through the (bio)pharmaceutical Sciences Network of HEIs
- The National Digital Research Centre, located in Dublin's Digital Hub and established as a not-for-profit private company whose shareholders include TCD, DCU and Ireland's two design colleges: the National College of Art and Design and the Institute of Art, Design and Technology
- TRIL, a partnership with TCD, the National University of Ireland, Galway, and Intel focused on supporting older people in their homes.

Central to the formation of the *Innovation Alliance* is a vision of Ireland's economy as one that will be increasingly dependent on the development of an indigenous knowledge-intensive sector. Ireland will also continue to be an attractive location for high-value manufacturing and services industries, largely funded by FDI. A significant proportion of these will perform high-value research and development activities.

UCD is positioned to play a major role in the national economic recovery by contributing to *Building Ireland's Smart Economy*, the government's framework for sustainable economic renewal, in particular by developing Ireland's emergence as an 'innovation island'. Under the innovation pillar, UCD's mission is to support, feed and facilitate this shift by translating its knowledge and expertise to the benefit of Ireland's economy and society.

Different disciplines will contribute in different ways:

- The sciences and engineering disciplines will contribute by founding research partnerships with enterprise, forming campus spin-outs and licensing and commercialising its intellectual property (IP)
- The human sciences, business and legal disciplines will work to better inform the actions and thinking of policy makers, practitioners and the government
- UCD's arts and humanities will enhance the cultural life of the country, both deepening our roots and placing them in a global perspective, through the creative utilisation of digital media and other new technologies.

Across all disciplines, UCD will foster entrepreneurship and innovation at the 3rd- and 4th-levels to create the business leaders and educated workforce that together will create the knowledge economy.

6.2. Core objectives

UCD has three core objectives for innovation:

1. To maximise the impact of UCD's knowledge and expertise to benefit Ireland, especially from converging disciplines
2. To foster a culture of innovation and entrepreneurship at 3rd- and 4th- levels
3. To foster innovation amongst all UCD staff.

6.2.1. Maximise impact of UCD's knowledge and expertise

Under the Enterprise Ireland *Technology Transfer Strengthening Initiative* (TTSI) programme, NovaUCD is funded to increase the licensing and commercialisation outputs from UCD's research base, including licensing to established companies and ventures. The main outcome from this strategic priority has been to meet the specific targets of the TTSI programme, which have been set to reflect international benchmarks in exploiting the outputs of research. Through the development of the *Innovation Alliance*, by 2014 UCD should witness a step-change in such activities, particularly in the founding of campus companies. These outcomes will reflect a major shift in the research and innovation culture of the institution, especially in the area of converging disciplines. As a major initiative, UCD has set itself the goal of building a multi-million-euro seed fund for campus companies based, in part, on reinvesting income gained from its commercialisation activities and also on funds raised from outside the institution. This will be enabled by creating a joint business development activity with TCD that will assess and assist the early development of new enterprises emerging from our academic activity.

6.2.2. Fostering innovation and entrepreneurship at 3rd- and 4th- levels

By 2014, UCD's offerings at undergraduate and postgraduate level will be transformed to embed aspects of innovation and entrepreneurship through the *Innovation Academy*. At the undergraduate level, distinct streams with a business emphasis will be implemented in the scientific and technological disciplines. UCD will mainstream courses in innovation and entrepreneurship at the 3rd- and 4th- levels. This will give all students access to a range of transferable skills and a knowledge of business, thus giving them a wider set of career

options beyond their core discipline. As of 2008, courses delivered by NovaUCD on starting a business and on IP have been introduced into the structured PhD programme. Furthermore, new and adapted MSc and MBA courses are planned to focus on business aspects of the science, engineering and technology sectors. These courses are targeted at both new graduates and high-skilled workers to provide for their re-education and/or up-skilling, enabling them to enter new sectors and to support continuing professional development. There will be masters-level courses (MScs and MBAs) in prioritised research themes (energy, engineering, biotechnology and biosciences and ICT) that will provide business education for researchers and support the re-skilling and up-skilling of workers looking at a career change. This suite of initiatives will amount to a significant change in UCD's educational landscape.

6.2.3. Fostering innovation amongst UCD staff

During the period of this plan, UCD will foster and reward innovation amongst UCD staff through specific inclusion of innovation as a criterion for promotion. Additionally, it is intended to build an innovation track record into our recruitment criteria where appropriate.

6.3. Key metrics and performance indicators

UCD will assess its progress against the objectives set out above using the following metrics.

- Innovation index (combining patents, companies, licences): this measure reflects whether UCD is meeting its innovation outputs relative to its research income and international norms: target 10 per cent year-on-year improvement
- Percentage of PhD students taking innovation modules as part of their course work (target 80 per cent)
- Percentage of staff protecting IP or contributing to policy papers
- Formal collaborations, partnerships and joint ventures with industry, non-governmental organisations and arts and cultural organisations.



Enabling Foundations

This brief concluding section sets out at a high level the steps that will be taken to ensure the provision of the necessary support systems over the next five years to the achievement of our core objectives in education, research and innovation. Each of the support areas identified below will be developing its own detailed strategy and implementation plan.

7.1. Finance

University finances are heavily dependent on state funding, which has been under severe pressure in recent times. Over the period of this plan, UCD will restructure its financial profile to eliminate both the recurring and accumulated deficit. UCD will lessen reliance on state funding sources by expanding revenue from academic (graduate and international) and commercial arenas and will provide better alignment of our cost base with available revenues through prioritised recruitment and aggressive management of non-pay costs.

Key finance actions will include:

- Development of revenue-enhancing strategies to augment and diversify our income streams, including optimisation of the use of University assets and an appropriate level of commercialisation
- The development of UCD’s international and postgraduate offerings and profile with a view to substantially increasing their revenue streams
- Pursuit of effective cost-reduction strategies including:
 - Payroll cost management
 - Roll-out of best practice procurement
 - The continuation and enhancement of value for money audits
 - Elimination of excessive or inefficient resource usage
- Elimination of University deficit over the period of the plan
- Implementation of a service-level agreement for all finance-support services whether provided from the central finance function or from the college-based finance offices
- Significant heightening of financial and control awareness through greater communication of the University financial condition and the drivers of revenue and cost and the provision of relevant training to key staff
- Development of improved management information delivered on a regular basis, including the development of metrics around core university activities.

The achievement of these objectives will be measured using the following key metrics and performance indicators:

- Surplus/deficit as absolute amount (target: to eliminate deficit and to achieve small annual surplus over the lifetime of the plan)
- Under the UCD Five-Year Financial Plan, each unit has been assigned a financial target for each year (each unit is to achieve financial target)
- Income generated from non-Exchequer sources (amount and percentage of total income) broken down by 3rd- and 4th-level courses, international student fees and commercial income
- Investment in campus infrastructure (target: complete Law School, Student Facilities and Charles Institute, achieve 50-per-cent completion of UCD Science Centre and commence comprehensive redevelopment of Newman Building).

7.2. Human resources

During the preparatory phase of this plan, the landscape with regard to human resources (HR) within Ireland has changed considerably, particularly within the public-sector context. Pressures on the public finances have led to an intense scrutiny of the size and cost of the public sector. Government policy has dictated the introduction of a range of restrictive measures that impact very directly on HR policies. These include a general moratorium on recruitment and a targeted reduction in numbers within the public sector, the introduction of a range of remuneration reductions and the curtailment of promotional and other formal development opportunities.

These measures constitute a difficult environment within which to frame HR policies in a people- and knowledge-intensive sector. As a result, it will become increasingly necessary to formulate and execute policies that strive to motivate people and to enable them to deliver their full contribution. Substantial focus will need to be placed on enabling individuals to support, coach and mentor each other. Greater attention will need to be devoted to the sources of funding of employment, in recognition of the flexibilities which may be available in making appointments which are funded through non-Exchequer sources of revenue. In particular, it will be necessary to be able to demonstrate to public policy makers the causal link between investment in people and knowledge and the consequential contributions to economic and social development.

Key HR actions will include:

- Establishment of clear HR-planning policies, including streamlined recruitment processes, that will enable UCD to focus on areas of maximum potential for recruitment
- Recognising innovation commercialisation and income generation in UCD development pathways and reward systems
- Building on the initial investment the University has made in staff performance and development through the Performance Management Development System (PMDS) process and leadership programmes
- Actions to strengthen sense of collegiality and to build staff morale
- Initiatives to enhance flexible working arrangements, including the development of redeployment programmes across the university
- Development of staff mentoring programmes
- Development of service-level agreements for all HR support services.

The achievement of these objectives will be measured using the following key metrics and performance indicators:

- Number and cost of staff employed (actual and FTE)
- Ratio of academic staff FTE to administrative and support staff FTE (nationally and internationally benchmarked)
- Participation of staff in development and mentoring processes
- Balance between staff being funded from Exchequer versus non-Exchequer sources.

7.3. Library, information and knowledge management

Information and knowledge are fundamental to all UCD's activities, whether this be the scholarly knowledge resources that support learning and research or organisational information vital for daily operations and longer-term planning. Many aspects of research and education now rely heavily on data analysis, modelling and the successful application of computational, visualisation and electronic collaboration techniques. The overarching strategy for information and knowledge management at UCD has four major objectives:

1. To make available to the UCD community data, information and knowledge needed to promote learning and to catalyse the creation of new knowledge
2. To enable members of the UCD community and the external partners to use, interact with and collaborate around information on robust information systems, platforms and networks

3. To enhance capacity for communicating the outcomes and social impact of the University's teaching, research and innovation activities
4. To enable the effective management of administrative information and the capacity to translate that information into actionable organisational intelligence.

The UCD Library is the university's knowledge centre, its ubiquitous link to a global network of data, information and knowledge and a keeper of Irish cultural heritage; it is, moreover, a vital environment that catalyses student learning and intellectual engagement. Additionally, the ICT infrastructure of the University provides a platform for innovation and learning, enabling the widespread disseminating of electronic information, storing and managing large data-sets and collaborating on large-scale computational resources. This plan also recognises the need to continue investment in high-quality, user-oriented and sustainable learning support services and systems that enable innovation with digital media and instructional technologies. These information services will be made available on a robust infrastructure and transparent foundation of integrated applications services that facilitate student success.

Key information, knowledge management and infra-structural actions will include:

- Adopting a holistic and integrative approach to management of the University's information services and communications technologies, emphasising both capacity to advance University objectives and quality of the user experience
- Implementing a long-range plan for improved interoperability and access to administrative data systems, facilitating the user experience while building an advanced capacity for gathering organisational intelligence
- Developing UCD's infrastructure and e-learning services to fully exploit available and emerging technologies in areas such as large storage capacity, data management and advanced networks
- Advancing UCD library services and the University's access to data, information and knowledge by leveraging capacity for collaboration among Irish universities and national cultural heritage institutions, specifically:
 - Strengthening the IReL platform (a digital library of jointly licensed online journals and databases)
 - Building capacity for coordinated collection development amongst Irish university libraries
 - Contributing to systems that enable a unified view of the holdings of Irish university libraries
 - Exploring potential for joint facilities for materials storage, conservation and digitisation

- Further developing nascent information services of national scope and impact, namely, the IURLA and ISSDA, assuring their sustainability by appropriate governance, appropriate placement in the UCD organisational context and adoption of sustainable approaches to data acquisition, representation, preservation and dissemination
- Improving availability of services, both locally at UCD and externally, that enable acquisition, capture and access to data and information essential to education, research and innovation across diverse fields of study. This effort will focus particularly on geospatial data and geographic information systems, as well as systems that facilitate the acquisition, administration and analysis of quantitative and qualitative data in the social sciences
- Developing capacity to exploit digital media, e-learning systems and communications technologies to enhance the UCD student learning experience and to extend lifelong learning opportunities to a geographically distributed Irish workforce
- Improving coordination of technology-assisted learning support services
- Expanding capacity for inter-organisational collaboration by supporting middleware services that enable interoperability across institutional boundaries, including a robust identity-management infrastructure and support of authentication and authorisation protocols
- Supporting cutting-edge research in the sciences, social sciences and humanities through a strategic approach to e-infrastructure development and leveraging UCD's unique research ICT support services
- Further leveraging of externally provided computational capacity to achieve financial efficiencies while improving services to end users.

7.4. Communications

In the period of the UCD Strategic Plan, 2005/2008, major advances have been made to remedy significant communications deficits at UCD. The implementation of the last plan saw the University make huge strides forward in communications terms. A standard visual identity was agreed and implemented across the University. This involved the revival of the original 1911 official crest for all official documentation and the design of a new, technologically sophisticated visual identity for mass communications, designed to make maximum impact across all media. Highly skilled professionals were appointed to key leadership roles in media relations and internal communications with immediate, measurable positive impact.

The communications function of any university is ultimately one which serves the core elements of the academic mission of the institution. This focus has been the basis of the success achieved to date at UCD in this arena. The focus, therefore, of communications planning and activity over the period of the UCD Strategic Plan to 2014 will be to align even more closely our sundry activities and products with our education, research and innovation missions - the articulation of which will become crisper and more effective in the same process.

Working in this way, key specific actions will include:

- Promoting the UCD brand as a single identifier of quality and affinity
- Creating an association between UCD and innovation in the public mind
- Developing and delivering the plan for communicating the benefits of *UCD Horizons* to prospective undergraduate students
- Developing and delivering a co-ordinated strategy for marketing to potential graduate students
- Highlighting individual academics through a range of communications channels focusing on their research achievements and academic expertise
- Building a sense of community through major outreach events and initiatives
- Developing a user-driven intranet with the primary objective of providing staff with one location for all internal information
- Developing a suite of student-focused communications to ensure students receive consistent messages about the university mission, vision and values.

7.5. Development and alumni relations

UCD renewed its focus on development and alumni relations to proactively engage with alumni to build and foster relationships in order to develop a culture of philanthropy to support the University's strategic goals.

The Campaign for UCD, *Forming Global Minds, 2008/2014*, is a capital one. Its three major priorities are:

1. The completion of the campaign for the new UCD Sutherland School of Law
2. The launching of the campaign for the new Science Centre
3. Developing and implementing the campaign for new facilities for the UCD Michael Smurfit Graduate School of Business.

In addition to the campaign initiatives, the Development Office, through the UCD Foundation, continues to fund-raise for University-wide priorities, such as scholarships and Newman Fellowships.

Alumni Relations is critical to the success of the University's fund-raising campaigns as its programme of communications and events prepares alumni to support and serve the University in a multitude of ways.

Key development actions will include:

- The successful launch of the Campaign for UCD - *Forming Global Minds*, to include the appointment of a stellar Campaign Board to lead and drive the campaign
- Delivery of a multifaceted fund-raising programme including major gifts, mass fund-raising (telethons/direct mail), corporate fund-raising, Trust and Foundation fundraising and legacy-giving
- Growth of an Alumni Relations programme and an active global alumni-association network to affiliate alumni more closely with the University.

7.6. Student administrative and support services

The student is at the centre of UCD life. We offer an excellent education and create a special student experience, both of which contribute to the formation of our graduates, and both of which will be enhanced under this strategic plan. A central objective of this plan is to make a UCD education accessible to a much wider variety of students by providing new and flexible modes of study and by adapting our portfolio and curricula to meet the individual and changing needs of a diverse student body. Realising the full benefits of the modular curriculum and combining this with emerging educational technologies and individualised student support has the potential to establish UCD as a unique place of higher learning.

Delivering on the educational objectives of this strategic plan will depend on the professionalism, creativity and commitment of the University's non-academic staff, working in partnership with their academic colleagues. UCD's administrative, technical and professional student support staff clearly demonstrated their capacity and willingness, under the Strategic Plan, 2005/2008, to deliver major change in the best interests of students - despite limited resources.

As part of this plan, UCD will:

- Achieve greater integration of student and academic services across the entire student life cycle, from the engagement of prospective students at 2nd-level through to graduation and ongoing relationships as university alumni
- Aim for seamless provision across centralised and distributed academic and student support functions
- Develop the administrative, support, information and technical services and systems required both to support curricular flexibility and new modes of study and learning and to enhance students' experiences in their administrative dealings with the University
- Review the means by which we provide both academic and pastoral advice and support to students and create an integrated student-support model that ensures timely, appropriate and individualised academic and pastoral advice and support
- Develop services and supports that specifically foster students' intellectual flexibility and breadth and the skills and capacities for a rewarding life, for employment and for entrepreneurship and active citizenship
- Ensure the ongoing development of excellent services to ensure the well-being, health and welfare of our students
- Enhance our engagement with prospective students and those who advise and support them.

7.7. Capital development

The University recently embarked on a €300 million capital development programme to significantly upgrade some of the older buildings on the campus and to further enhance student facilities. A key component of the programme is the further development of the Science Precinct. UCD is unique in these islands in having a science district on campus that covers the human, animal and plant sciences and complements the core science disciplines and informatics. The programme will be completed within the first two years of this Strategic Plan.

A second major focus in the plan is the implementation of the Gateway and other commercial developments on the periphery of the campus. The objective is to provide the University with a new campus layout, an appropriate entrance from the N11 and the provision of commercial space and social and leisure facilities for the campus and neighbouring communities. Notwithstanding the current economic downturn, the University is committed to implementing these projects as well as to providing the facilities required to support and build on the *UCD-TCU Innovation Alliance*.

The University intends to deliver its projects in accordance with its aspiration to develop Belfield as a sustainable and ecologically focused campus community.

Key capital development programmes will include:

- The redevelopment of the UCD Science Centre as a core research and teaching facility with substantial capacity for interdisciplinary activity
- The development of the Newman Building, James Joyce Library and adjacent spaces to provide vital and dynamic space for research, teaching and learning, to catalyse interaction across disciplinary boundaries and to provide a public gateway to UCD's Irish cultural heritage collections and programmes
- Completion of the Sutherland School of Law, a new building to support the teaching and research activity of UCD's School of Law
- Design and completion of the UCD Charles Institute of Dermatology, which is being planned as a facility for research and training in dermatology that will become a national and European centre of excellence
- Design and completion of Systems Biology Ireland as a national centre for computational biology
- Completion of the next phase of the UCD Student Learning, Leisure and Sports Complex
- The doubling of the existing capacity of UCD residences through a number of initiatives that will increase the existing campus villages and provide additional accommodation in conjunction with the private sector and within the Gateway complex
- Advancement of UCD Gateway, an innovative approach to bring business, commerce and social interaction directly onto the campus through providing a gateway to the University and the county
- Develop Belfield Innovation Park as a flagship for Irish innovation.

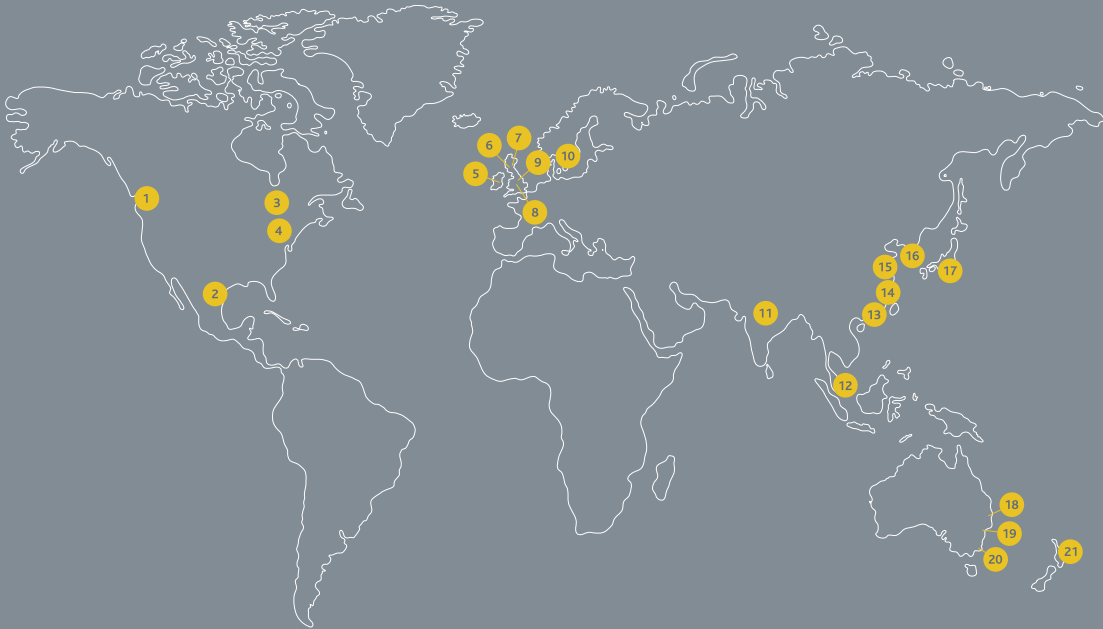
Furthermore, UCD is designing its building stock with the specific objective of fostering interdisciplinarity.

This is evidenced by:

- Design of buildings to stimulate interdisciplinarity
- The location of researchers around specific themes
- Strict space allocation based on needs of research activities
- The use of institutes to foster cross-cutting interdisciplinary research.



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STRATEGIC PLAN TO 2014

University College Dublin
Belfield, Dublin 4, Ireland

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This Strategic Plan was presented to and formally approved by the Governing Authority of University College Dublin at its meeting on 23 February 2010



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