



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin



Annual Report **2017-18**

www.tcd.ie

Members of the Board of Trinity College Dublin during the 2017/18 academic year were:

Ex Officio
Provost, Dr Patrick Prendergast (Chair)
Vice-Provost/Chief Academic Officer, Professor Chris Morash
Senior Lecturer/Dean of Undergraduate Studies, Professor Gillian Martin
Registrar, Professor Paula Murphy
Bursar/Director of Strategic Innovation, Professor Veronica Campbell
Elected/Nominated
Professor Deirdre Ahern (2016-2020)
Professor Sarah Alyn Stacey (2016-2020)
Professor Sylvia Draper (2014-2018)
Professor Robert Gilligan (2015-2018)
Professor Brian Lucey (2014-2018)
Professor Eunan O’Halpin (2016-2020)
Professor Diarmuid Rossa Phelan (2014-2018)
Professor Richard Timoney (2016-2020)
Elected Non-Fellow Academic Staff
Dr Darren Fayne (2016-2020)
Professor Claire Laudet (2016-2020)
Professor Catherine McCabe (2014-2018)
Professor Rachel Moss (2016-2020)
Professor Aidan Seery (2014-2018)
Elected Non-Academic Staff
Ms Shelia Dunphy (2014-2018)
Ms Stephanie Farrell (2016-2020)
Mr James Keogh (2016-2020)
Student Representatives
President Graduate Students’ Union, Mr Shane Collins (2017-2018)
President Students’ Union, Mr Kevin Keane (2017-2018)
Education Officer Students’ Union, Ms Alice MacPherson (2017-2018)
Welfare Officer Students’ Union, Mr Damien McClean (2017-2018)
External members
Dr Olive Braiden, nominated by the Arts Council (2010-2018)
Mr Tony Keohane (2015-2019)
In Attendance Ex-Officio
Secretary to the College, Mr John Coman
Treasurer/Chief Financial Officer, Mr Ian Mathews
In Attendance
The Vice-President for Global Relations, Professor Juliette Hussey
The Chief Operating Officer, Ms Geraldine Ruane
The Assistant Secretary, Ms Victoria Butler

Attendance at Board meetings and Board expenses are recorded in Appendix I and II respectively
 This document is available in accessible format on request (email: fishers@tcd.ie)

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UNIVERSITY ACTIVITIES

1. Academic Developments

1.1 World University Rankings

Trinity is ranked Ireland's leading university in the QS World University Rankings, The Times Higher Education (THE) World University Rankings and the Academic Ranking of World Universities, Shanghai.

Trinity was ranked in 88th place in the world and 18th in Europe in the QS World University Rankings 2018. This represents an increase of ten places on last year's 98th position. According to QS this means that Trinity is now in the top 1% of universities worldwide. Trinity was ranked in 117th position in the Times Higher Education World University Rankings 2018, climbing 14 places from the previous year.

1.2 Quality

Recognised globally as a university of high quality in teaching and research, Trinity's education is distinctive in being research-led and student-centred. The University is committed to maintaining the exceptional quality of its undergraduate and postgraduate degrees and research and a major strength lies in Trinity's commitment of its staff to its students.

Election to Fellowship is an honour marking the exceptional quality of the University's academic staff. Research achievement or scholarship of a high order is the primary qualification for Fellowship, coupled with evidence of the candidate's contribution to the academic life of the University, as shown in particular by participation in the work of his or her Discipline or School and an effective record in teaching.

Sixteen Fellows were announced on Trinity Monday 2018, including two Honorary Fellows - the Conolly Norman Professor of Old Age Psychiatry, Brian Lawlor, recognised nationally and internationally as an expert in dementia and the renowned poet and alumnus of Trinity, Dr Michael Longley.

In 2017/18, Trinity approved an overarching institution Quality Policy Statement articulating the governance of quality in Trinity and locating quality as central to Trinity's strategies to advance our academic mission; our participation in national and international fora in higher education, our engagement in partnerships and collaborations and in quality review, professional accreditation, research evaluation, and award processes.

The Quality Office facilitated quality reviews of Estates and Facilities, the School of Nursing and Midwifery and the Joint Certificate in Innovation and Entrepreneurship in 2017/18. A highlight of the year was the innovative approach taken to the quality review of the CRANN Institute. It adopted an integrative approach that used the outcomes from the cycle of reviews that CRANN had been subject to from 2013-2018 as a basis for recognition as a quality review.

In March 2018, Trinity participated for the first time in a pilot of the ISSE Postgraduate Research (ISSE PGR) Survey. It provides the opportunity to benchmark the experience of research degree students in Trinity against that of the comparator group of institutions in Ireland. All Schools with more than 10 PGR students responding to the survey received a report on the survey outcomes to inform their quality enhancement initiatives.

The implementation of the European General Data Protection Regulation in May 2018 prompted the development of a new procedure on the transfer of student assessed work to External Examiners and advisory guidelines for external examiners on the EU-GDPR. Other enhancement to the External Examiner process include a dedicated external examiner website, a new email address for submission of undergraduate and

postgraduate taught external examiner reports, and centralised secure storage to provide ease of access to external examiner reports by Schools.

The Quality Office undertook a review of the Administrative/Support Areas, Schools, and Programmes and General Review Procedures in 2017/18. A checklist to address the quality assurance of professional placements and off-campus learning was added to the School and Programmes to reflect the focus of the QQI Core Statutory Quality Assurance Guidelines (§5.4).

Trinity continued to engage with Quality and Qualifications Ireland (QQI) and the Irish Universities Association (IUA) to contribute to university sectoral discussions in advance of the initiation of the CINNTE cycle of institutional reviews in 2018/19.

2. Education

2.1 The Trinity Community

Trinity is a community of scholars, made up of students, academic staff, administrative and professional staff. Diversity is at the heart of what makes Trinity distinctive, and it attracts students and staff from all around the world, and from all kinds of different socio-economic backgrounds and experiences.

In total, there were 18,081 registered undergraduate and postgraduate students in 2017/18. Of these, approximately 74% were from the island of Ireland. In looking at the EU vs nonEU cohorts, 15,345 (85%) were EU, and 2,736 were nonEU (15%). The student population was 59% female and 41% male.

A total of 13,025 (72%) were registered on undergraduate programmes, 4,994 (27.6%) on postgraduate programmes, and 62 (0.34%) on foundation courses.

Alternative Entry Routes to Trinity

The University's Strategic Plan aims to increase the percentage of under-represented groups registered on undergraduate courses to 25% by 2019. At present these groups consist of students who are admitted under the Mature Student Dispensation Scheme; the TAP Foundation Courses for Mature Students and Young Adults; the DARE Scheme; the HEAR scheme and FETAC applicants. In 2017, Trinity was very close to meeting its objective of 25% of under-represented groups registered on undergraduate courses (24.2%).

2.2 Admissions Statistics

In 2017, Trinity received 8,213 (11%) of first preference applications in the CAO system which was an increase of 4% on 2016 (7,916), and resulted in Trinity attracting 17% of all first preference applications across the sector.

Of the 71,999 people who applied for Level 8 courses in Irish higher education institutions through the CAO in 2017, 18,590 listed Trinity for one or more of their CAO course preferences, an increase of 2.5% on 2016.

A total of 580 first-year students were awarded special 'Entrance Exhibition Awards' in November 2017. These students received a minimum of 552 points or higher in their Leaving Certificate examination or equivalent. They represented 245 different schools across 30 counties in Ireland, together with candidates from the UK, Austria, Czech Republic, Estonia, France, Germany, Hungary, Italy, Latvia, Lithuania, Nepal, Netherlands, Pakistan, Poland, Portugal, Romania, Russia and Spain.

The University trialled a new admissions model on three of its most popular courses in a feasibility study in 2014. It was conducted by Trinity in partnership with the CAO, for History, Law and Ancient and Medieval History and Culture. The objective was to see whether it might be possible to develop a better and fairer mechanism to identify and admit applicants to college. There were 244 applications for the 25 places in the three subjects on offer (History, 10 places), (Law, 10 places), and (Ancient and Medieval History and Culture, 5 places) in September 2017.

2.3 Scholarships

Foundation Scholarship is a University institution with a long history and high prestige, and is a distinctive feature of student life at Trinity. A Scholarship at Trinity remains the most prestigious undergraduate award in the country, and it is an award that has undoubtedly helped to foster long-lasting links between many outstanding graduates and the University. A principal objective of Trinity is the pursuit of excellence: one of the most tangible demonstrations of this is the institution of Scholarship.

In the 2017/18 academic year 73 students were awarded Scholarships on Trinity Monday 2018. Recipients of the scholarships represented all faculties: the Faculty of Arts, Humanities and Social Sciences (23); Faculty of Engineering, Mathematics and Science (28); Faculty of Health Sciences (20); and Multi-Faculty (2).

2.4 The Curriculum – New Courses

The following undergraduate and postgraduate courses and modules were approved by the University Council in 2017/18:

UG / PG	Name of Course	Degree award
UG	Dual Degree Programme with Columbia University - European Studies -History -English Studies	Dual B.A. Degree with Columbia University
PG	M.Phil. in International History	M.Phil. & P.Grad.Dip.
PG	Doctor in Philosophy (Joint)	Doctor in Philosophia (Conjunctim)
PG	M.Sc. in Energy Science	M.Sc. & P.Grad.Dip.
UG	Joint Honors Programme with 62 Combinations	B.A.
PG	Postgraduate Diploma in Clinical Exercise	P.Grad.Dip.
PG	Postgraduate Certificate in Biological Psychiatry	P.Grad.Cert.
PG	M.Sc. in Electronic Information Engineering	M.Sc. & P.Grad.Dip.
PG	M.Sc. in Mechanical Engineering	M.Sc.
PG	M.Sc. in Addiction Recovery	M.Sc.
PG	M.Sc. in Development Practice	M.Sc.
UG	Religion	B.A.
UG	Validate a new Irish-Medium B.Ed. At Marino Institute of Education	B.Ed
PG	M.Phil. in Medieval Studies	M.Phil. & P.Grad.Dip.

2.5 Commencements, Firsts and Gold Medal Awards

A total of 5,416 degrees were conferred (3,200 primary degrees and 2,216 higher degrees) in 39 separate commencement ceremonies in the 2017 calendar year. Six hundred and twelve students received first class honours at the degree examinations in 2017/18 and, of these, 125 were awarded Gold Medals.

Honorary conferring took place at the Commencement ceremonies on Friday 8 December 2017 and 22 June 2018. Senior Archivist of the National Archives of Ireland Catriona Crowe, Director of the Centre for Neural Circuits and Behaviour at the University of Oxford Gero Miesenböck, Emeritus Professor of Astronomy at Leiden University George Kildare Miley, Irish rugby champion Brian O'Driscoll and journalist and broadcaster Olivia O'Leary were conferred with Honorary Degrees at the Winter Commencements.

Recipients of Honorary Degrees at the Summer Commencements were former US Secretary of State Hillary Rodham Clinton, Trinity advisor, supporter and industry titan Paul Drechsler, archivist Ann Martha Rowan, science education pioneer and influencer Tony Scott and mathematician, entrepreneur and philanthropist James Harris Simons.

2.6 Trinity Access Programmes

The Trinity Access Programmes (TAP) are a range of initiatives aimed at increasing the participation rate at third level of young adult and mature students from under-represented groups. Trinity Access has been working in the area of widening participation for 25 years with a track record of building, scaling and sustaining educational innovations aimed at low income young people and adults.

They focus on educational innovation in outreach, second-level pedagogy, alternative admissions systems to higher education and post-entry supports and career development programmes for undergraduates.

TAP receives its funding from the Higher Education Authority through the Programme for Access to Third Level Education (PATH), the Department of Education and Skills and a number of individual and corporate funders. These funds support the following initiatives:

- The School and Community Outreach Links
- The Pre-University Preparation Courses: Young Adults and Mature Students, TCD
- The Partnership Courses in Liberal Arts: TCD and City of Dublin Education and Training Board (CDETB)
- The Post Entry Progression Programme
- Research, Evaluation and Innovation
- The Trinity Access 21 Project
- The Bridge 21 Transition Year Programme
- College Awareness Week

There were 384 admissions to Trinity through the Trinity Access Programmes in 2017/18, through alternative entry routes and preparatory programmes.

Linking with over 40 primary and second-level schools with a legacy of low progression to third-level, TAP, with the assistance of some 20 Trinity departments, enabled over 5,000 students, parents and teachers to participate in on-campus activities during 2017/18. These include weekly campus tours, mentoring programmes, the Med Day for Junior Cycle students, CodePlus coding classes for girls, a bespoke book writing programme, the Pathways to Law and Technology programmes, as well as maths and science exploration week, summer schools, etc.

TAP also provides a range of post-entry supports, activities and career development programmes, as well as financial assistance to undergraduate students who have entered Trinity through alternative admissions routes.

TAP collaborated with the Oxford University College, Lady Margaret Hall, to bring the TAP Foundation Year to Oxford in a four-year pilot scheme. The second cohort of students started in September 2017.

2.7 Provost's Teaching Awards

The Provost's Teaching Awards are the University's principal means of acknowledging those academic staff who have made an outstanding contribution in the pursuit of teaching excellence in Trinity and who promote teaching as a scholarly activity.

The 2018 recipients were: Prof Lina Zgaga, School of Medicine, Prof David Kane, School of Medicine, Prof Rachael Walsh, School of Law, and Prof Dmytro Volin, School of Mathematics and Prof Sarah O'Brien, School of Linguistic, Speech & Communication Sciences who both received the Early Career Award. All recipients were recognised for their dedication and commitment to teaching and learning excellence.

2.8 Online Education

Trinity continued its commitment to online education in 2017/18 with learners from all over the world accessing a range of Trinity generated course materials at a time and place of their choosing.

Developed as part of University's strategic goals for online education, fully online postgraduate courses have been available since 2014. Many existing courses were updated in 2017/18 to keep learning content current and in line with best practice. Additional online modules were developed for the School of Social Work and Social Policy which enabled a range of MSc students to study content online while preparing for their dissertations. Development work and enrolment also commenced on the new online Postgraduate Certificate in Ageing Health and Wellbeing in Intellectual Disability, to be delivered in the next academic year.

In 2017/18 Trinity addressed the growing online professional development and lifelong learning space with four online continuous professional development (CPD) courses from the Schools of Nursing and Midwifery, Social Work and Social Policy, and Linguistic, Speech and Communication Sciences. A highly successful new CPD course, catering for professionals working in the Irish housing market, was developed by Trinity's Department of Economics. These online courses enable individuals to gain CPD credits and professional knowledge, while working at the same time.

Trinity continues to support global-learning communities through the provision of high-quality, open-access courses (MOOCs) in partnership with FutureLearn. In 2017/18 almost 25,000 learners signed up for a Trinity MOOC in topics including Sustainable Development, Successful Ageing, Intellectual Disability Nursing, Exercise Prescription, and Irish History. These learning communities sparked over 70,000 comments between learners engaging with content from leading Trinity academics.

The University has extended the creation of online materials to support all learners, not just students engaging fully online and remotely. In 2017/18 this included the development of a range of blended learning materials for the university community, including in Innovation and Entrepreneurship, and new modes of Teaching and Learning.

2.9 International Agreements

In 2018 Trinity celebrated its most significant and wide-reaching university partnership to date with the launch, in February, of a dual degree programme with top Ivy League college, Columbia University in New York. Academics in the Faculty of Arts, Humanities and Social Sciences worked with colleagues in Columbia over 18 months to develop undergraduate programmes of study to lead to dual degrees in four humanities disciplines. The response from prospective students was immediate, with applications received from over 20 countries.

As well as the ground-breaking agreement with Columbia University, Trinity signed a new strategic partnership with the University of Science and Technology Beijing. In October 2017 the Provost led a delegation to the Middle East and Gulf states and visited Lebanon, Egypt, Kuwait, Oman and UAE. One of the objectives of this trip was to cultivate strategic relationships with the most prominent universities in the region including the American University of Beirut in Lebanon, Sultan Qaboos University in Oman, and the University of Kuwait. In addition to discussions on general academic collaboration there was particular focus on developing exchange agreements for students on the new undergraduate programme in Middle Eastern and European Languages and Culture (MEELC).

Under the partnership agreement with Thapar University students meeting the required academic requirements complete the first two years at Thapar University before transferring to Trinity for years 3 and 4 of the Engineering degree programme. On completion of the programme students are awarded a degree from Trinity. In 2016/17 eight students arrived in Trinity for the pilot phase of the programme. 2017/18 was the first year of the programme, and saw 41 students entering the third year of Trinity Engineering.

The Trinity Access Programme (TAP) collaborated with the Oxford University College, Lady Margaret Hall, to bring the TAP Foundation Year to Oxford in a four-year pilot scheme. The second cohort of students started in September 2017.

During the academic year 2017/18, over 830 undergraduate students studied abroad as part of mobility programmes, research placements or clinical placements – this represents approximately 30% of all third-year undergraduates. The next stage of the Trinity Education Project – involving semesterisation and elective modules – widens opportunities for students to spend a term or year in a university abroad, doing a combination of core and approved modules.

Trinity continued to expand college-wide student exchange programmes through signing new agreements with peer universities, and also plans to increase such exchanges with a number of key partners. There were eight new student exchange agreements being mapped with universities in US, Brazil, Middle East, Japan, Singapore and Vietnam during the 2017/18 academic year.

3. Student Experience

The ‘Trinity Experience’ extends beyond the curriculum to a rich tapestry of student clubs and societies that equip students for a life of leadership and civic participation. The tutorial service for students also contributes to the personal ethos.

3.1 Student Support Services

At the heart of all the University’s activities is the commitment to the intellectual and personal development of all of its students. To enhance the student experience, support services offer a comprehensive range of administrative and support services including Accommodation, Academic Registry, Catering, Student Learning Development, Tutorial Service, the College Health Centre, Counselling Services, Disability Office, the Chaplaincy, Careers Advisory Service, the College Day Nursery and Trinity Sport. These services ensure that the welfare of students and their social, cultural and emotional development are provided for and managed in a balanced and holistic manner.

3.2 Student Achievements

During the 2017/18 academic year, students and student societies were successful in many areas.

Sarah Mortell and Philip Callan were the only Irish recipients of the Schwarzman Scholarship among 142 Scholars from 39 countries out of 4,000 applicants. They both studied BESS (Business, Economics and Social Studies). Designed to prepare the next generation of global leaders, the Schwarzman Scholars programme

aims to give the world's best and brightest students the opportunity to develop their leadership skills and professional networks through a one-year Master's Degree in Global Affairs at one of China's premier institutions.

The 2018 Dean's Roll of Honour recognized Tom O'Malley, former president of Trinity St. Vincent de Paul, for the Trinity Legacy Award for Volunteering. Twenty-six students were also recognised for the Dean of Students Leadership Award for Volunteering and 62 for the 2018 Dean's List for Volunteering.

Final year Business Studies and French student, Arthaud Mesnard, was the 2018 winner of the Trinity Business Student of the Year Award. Arthaud is a Scholar and serial entrepreneur. During his time on campus he was involved with three start-ups, and in his final year led the Enactus TCD project KeepAppy, an app that empowers people to improve their mental wellbeing.

Anastasiia Shandra and Sean Mok were the winners of the 2017/18 Trinity Employability Award – an initiative in partnership with Intel, which aims to prepare students for future employment by enhancing their career readiness. In addition, a further 52 third-year undergraduate, and postgraduate students from Trinity celebrated their successful completion of the Trinity Employability Award in Partnership with Intel at a special showcase and ceremony.

Three students, Sinéad McAleer, David Ola and Paul Allan, won a €50,000 investment fund for a winning pitch on Trinity Business School's Demo Day for their fledgling enterprise, Biological & Optical Prevention. The student entrepreneurs have created a solution that will prevent and treat healthcare associated infections.

Formula Trinity—the University's first ever Formula Student team – participated in the international Formula Student Competition at Silverstone Race track in the UK in July. This was the first time a team from Trinity participated in the annual student engineering competition run by the Institute of Mechanical Engineers (IMechE) where university teams from around the world design, build, test and pitch a formula style race car under a fast pace and demanding environment.

Computer Science and Statistics Masters students Kumar Pranav, Jabez Sam John Samuel, Jude Joseph Arokia and Sujana Kumar Nag (Team Imbibe) won the Dragon's Den final of Citi's upstart Student Entrepreneurship Programme. Team Imbibe's start-up idea for Digitized interactive psychotherapies delivered over web and mobile enabled by Amazon-Alexa won out against seven other finalist teams from innovation courses across Ireland.

Trinity had three global and seven regional winners in The Undergraduate Awards, which is the world's largest academic awards programme, recognising excellent research and original work across the sciences, humanities, business and creative arts. This year, The Undergraduate Awards received a record number of 6,432 submissions from 299 institutions in 47 countries.

Four undergraduate students designed a solution for the emerging markets of eHeat and eTransport tech and won the ESB Inter-Colleges Challenge. For the challenge, each team had to act as a consulting team, engaged by ESB, to recommend current or emerging eHeat and eTransport technologies applicable to the energy market. Each team had to undertake research, design, financial analysis and marketing activities to convince ESB to go ahead with their recommendations.

Ceithleann Ní Chonluain, a final year Politics, Philosophy, Economics and Sociology student beat 50 of Ireland's best and brightest students in April's 2018 gradIreland National Student Challenge.

Katie Carbonara was the 2018 winner of the Mary Mulvihill Award, the science media competition for third level students that commemorates the legacy of science journalist and author Mary Mulvihill. The competition invited entries on the theme 'Science: Whose facts? Whose truth?'

At the 2018 Student Achievement Awards Ireland, Kevin Keane won Student Leader of the Year. James Cotter got the award for Irish Language Campaign of the Year. Outstanding Contribution to Student Media went to Dominic McGrath from The University Times and the publication also won Student Media Outlet of the Year.

Trinity Sport announced 68 sports scholars for 2017/18. Among these amazing athletes were Aoife Hopkins, U21 European ladies radial sailing champion; Cian O'Sullivan and Fionn O'Riain Broin for hurling, Aisling Maher in camogie – all three are inter-county players for Dublin; Ellen Ince is both a world and European champion

in taekwondo; Lorcan Tucker was a previous junior player of the year for Cricket Ireland and was the highest run scorer for Ireland at the U19 World Cup; four Ireland U20 rugby players – Jack Kelly, Michael Silvester, Max Kearney and Jack Dunne, who is also a Naughton scholar. Twenty-six of Trinity's other rugby players were also recognised for their outstanding performances.

The rifle club had a prominent year, with Siobhan Scarlett representing Trinity on the national and international stages, winning a Pink and Performance of the Year at the annual Trinity Sports Awards. There were colours wins for Fencing, Snow Sports, Trampoline and men's Rugby. Other high-profile wins include the Association Football men's team, who won freshers' competition the Harding Cup for the first time in over 20 years thanks to a goal by sports scholar James Woods.

Women's volleyball earned promotion to the premier national league, while the fresher hurlers won both the league and the championship for the second year in a row. Men's rowing won the Wylie Cup and also came from behind to defeat UCD in this year's Colours, bringing the Gannon Cup back to Trinity. Trinity's senior women claimed the Corcoran Cup at the same event. Trinity Rugby men's U20 team won the All Ireland Fraser McMullen Cup for only the third time in the club's history.

4. Research Activities

4.1 Research Themes

Trinity is recognised as one of the world's leading research-intensive universities and its research continues to address issues of global societal and economic importance.

Among the priority research themes being addressed by Trinity researchers are ageing, nanoscience, telecommunications, neuroscience, identities in transformation, cancer, and making Ireland. These are topics that not only address issues of immediate and long-term concern to society but offer opportunities for future economic development. The University's commitment to a research-led education means that our students are exposed to leaders in their discipline, to the latest knowledge and ideas, and to an education that emphasises analytical skills and creative thinking, and gives students an opportunity to develop a broad range of skills by engaging in personal research.

This excellence in research underpins Trinity's innovation and entrepreneurship activities. Research is central to the generation of the new disruptive ideas that will underpin future sustainable businesses. The knowledge created by Trinity is critical for the economic development of Ireland as it is for the education on offer to our students.

Trinity's research themes are supported by a set of research institutes that provide the infrastructure needed to support multi-disciplinary research as well as engagement with enterprise and social partners working in partnership with Trinity's 24 schools.

Trinity is playing a leading role in several major national longitudinal studies, including children's research and ageing, and hosts national centres for intelligent content, nanoscience and telecommunications research supported by Science Foundation Ireland (SFI) on campus. Trinity's major research institutes in areas such as neuroscience, biomedical sciences and arts and humanities are firmly established among the international leaders in their fields.

4.2 Research Funding

Research activity (measured on the basis of research expenditure) remained consistent with prior year at c €100m. The value of new awards amounted to €113m (2016/17: €115m) attracting an average indirect cost rate of 19.5%. New awards in 2017/18 included a €4.6m grant from Science Foundation Ireland supporting Smart Grid and Smart City Research and a €3.6m grant from the Health Research Board to support Clinical Research Activity.

Trinity's success in attracting EU funding has continued in 2017/18 with the value of new awards funded under the Horizon 2020 Programme amounting to €24m (2016/17: €23.4m). Trinity is

ranked 34th in Europe out of over 1,300 HEIs for Horizon 2020 funding with the University having secured 49% of all European Research Council (ERC) awards to Ireland since 2014.

The average contribution to indirect costs from research activity of 17.9% continues to be below the full economic cost of hosting the research resulting in the core budget cross-subsidising research activity. This position is not sustainable and if the University is to continue producing research at a world-class level, this funding gap will need to be addressed.

There were over 1,340 active research accounts and research activity supported c. 2,200 individuals in 2017/18 (1,500 staff : 700 PhD students).

Source of Research Funding	Year ended 30 Sept 2018
Science Foundation Ireland	42%
Enterprise Ireland	6%
Industry	4%
Irish Research Council	7%
Commission of the European Union	18%
Other	23%

4.3 Scholarship and Award Success

Trinity staff members continued to excel in research achievements and received national and international distinction and funding. Awards received by Trinity researchers include:

Four academics were elected as new members of the Royal Irish Academy (RIA) in May 2018. Professor of European History, Alan Kramer, Professor of Theoretical Chemistry, Graeme Watson, Associate Professor in Geography, Pádraig Carmody and Professor of Geology and Mineralogy, Balz Kamber were among 28 new members elected for their exceptional contribution to the sciences, humanities and social sciences, and to public service.

The inaugural Registrar's Civic Engagement Award, established to recognise exceptional contributions made by staff to civic engagement, was won by School of Engineering Assistant Professors, Kevin Kelly and Conor McGinn. The pair are group leaders in the Robotics and Innovation Lab (RAIL) and were recognised for their contribution to Trinity's engagement with wider society through their teaching and research, running an Engineering Summer School for girls, and interacting with companies and not-for-profit organisations in their engineering projects. One of their projects was the design of 'Stevie' — an elder-care robot and navigation device for people living with intellectual disability.

Pollination experts from Trinity are leading elements of a major new Horizon 2020 project named PoshBee (Pan-European Assessment, Monitoring and Mitigation of Stressors on the Health of Bees). PoshBee, which has a funding budget of €9 million and will run for five years, aims to understand the impacts of multiple pressures on a range of bee species and develop new tools to help reduce risks and negative impacts.

Assistant Professor in Physics John Goold won a prestigious ERC starting grant of €1.3 million to pursue next generation research in the field of quantum systems. The grant is being used to establish a research group in the School of Physics.

Engineers and business experts from Trinity were announced as the technical leaders in a EU-backed €2.9m multidisciplinary project, REDAWN, which will install micro-hydropower tech at key points in water networks to lighten the environmental footprint. Associate Professor in Energy and the Environment in the School of Engineering, Dr Aonghus McNabola, will be the technical lead, with the assistance of Professor in Operations Management in the Trinity Business School, Paul Coughlan, and Assistant Professor, John Gallagher from the School of Engineering.

Three Trinity researchers secured prestigious SFI-HRB-Wellcome Investigator Awards worth a combined total of approximately €5.5 million. Ussher Assistant Professor in Immunology, Dr Rachel McLoughlin, will investigate more effective MRSA treatment options; Professor of Population Genetics, Dan Bradley, will sequence hundreds of thousands of ancient Irish genomes to investigate links to disease; and Professor of Neurogenetics, Mani Ramaswami, will explore how the brain regulates access to feelings, perceptions and memories.

Prof Lorraine O’Driscoll, School of Pharmacy and Pharmaceutical Sciences was awarded almost €4 million in Horizon 2020 funding for a programme entitled ‘Training in Extracellular vesicles for benefit in health and Disease.’ This H2020 Marie Skłodowska-Curie Innovation Training Network will train 15 PhD students over its 4-year lifetime and will work on establishing standards and best practice for exosomes and other extracellular vesicles (EVs) research.

Dr Parvaneh Mokarian, Senior Research Fellow at AMBER and Research Associate Professor in the School of Chemistry, is coordinating a major EU project valued at €8.2m to pioneer the mass production of anti-reflective, scratch and abrasion resistant surfaces. Industry partners have committed to piloting the technology upon completion of the research project. The four-year SUN-PILOT collaborative project has been awarded €7.1 million through Europe’s Horizon 2020 programme, with the remainder of the €1.1 million coming from industry.

Professor in Genetics, Aoife McLysaght, and Dr David Finlay, an Ussher Assistant Professor specialising in immunometabolism won prestigious ERC Consolidator Grants worth a combined total of €3.8 million to pursue cutting-edge research projects. Professor McLysaght will seek to better understand the relationship between gene duplication and gene expression, with a view to exploring how this relationship affects gene and genome evolution, and how it impacts disease. Dr Finlay hopes to demonstrate how local distributions of nutrients such as glucose, glutamine and leucine affect the immune response in vivo in mice.

The Thomas Mitchell Professor of Cognitive Neuroscience, Rhodri Cusack, was awarded an ERC Advanced Grant valued at €3 million. The award allows Professor Cusack and his team at the Trinity College Institute of Neuroscience to conduct a world-leading research project that will for the first time use neuroimaging to measure the hidden changes in mental representations during infancy and compare them to predictions from deep neural networks, the technology that has been responsible for recent dramatic advances in artificial intelligence.

Tomás Ryan, Assistant Professor in School of Biochemistry and Immunology and TCIN joined a network of 30 outstanding early- to mid-career European neuroscientists when he was selected as Ireland’s first FENS (Federation of European Neuroscience Societies) Kavli Scholar.

Dr Lydia Lynch and Dr Tomás Ryan received the SFI President of Ireland Future Research Leaders Awards. This award was given to support research into obesity-related disease and understanding how memories are stored in the brain. President of Ireland, Michael D. Higgins, honoured the recipients, of which there were five in total (Trinity was the only institution with two recipients). The awards represent a combined investment of €7 million, and will also support the additional recruitment of 15 research positions.

Thirteen researchers from Trinity were among the 36 successful applicants of the Irish Research Council Laureate Awards programme announced in March. These inaugural awards were put in place to support exceptional researchers in conducting frontier basic research that pushes the boundaries of our current knowledge. The successful applicants from Trinity in the 'Starting Laureate Awards' category for excellent early career researchers were: Sarah Doyle, Assistant Professor (Immunology), Jeremy Piggot, Assistant Professor (Zoology), Francis Ludlow, Research Fellow (History), Isabella Jackson, Assistant Professor (History), and Stephen Power, (Physics). The 'Consolidator Laureate Awards' category for excellent mid-career researchers were: Yvonne Buckley, Professor (Zoology), Andrew Jackson, Associate Professor (Zoology), Matthew Campbell, Assistant Professor (Genetics), Aline Vidotto, Assistant Professor (Physics), Jan Manschot, Assistant Professor (Pure & Applied Mathematics), Andrei Parnachev, Assistant Professor (Pure & Applied Mathematics), Immo Warntjes, Assistant Professor (History) and Paul Dockree, Associate Professor (Psychology).

Dr Junsu Wang won the RIA Young Chemist award in April. His research aims to improve the efficiency of solar cells and broaden photodynamic therapy in the treatment of certain types of cancer.

Professor of Biochemistry, Luke O'Neill, won the 2018 Seymour and Vivian Milstein Award, the highest honour that can be bestowed by the International Cytokine and Interferon Society, for world-leading research in deciphering the role of innate immunity in the host immune response.

Dr Emily Vereker, Senior Patents and Licensing Manager and Technology Transfer Case Manager for Life Sciences, Trinity Research & Innovation was honoured with the prestigious Knowledge Transfer Achiever Award at the 2018 Knowledge Transfer Ireland (KTI) Impact Awards. The KTI Impact Awards recognise individuals and projects that address societal challenges and create significant economic value in Ireland.

Professor John Boland, Principal Investigator in AMBER and the School of Chemistry was awarded an Outstanding Researcher Award from the Intel Corporate Research Council (CRC).

Professors John Donegan, Plamen Stamenov and Luiz Da Silva won funding to support new research collaboration via a new partnership between Science Foundation Ireland and the National Natural Science Foundation of China. The projects will support a number of researchers in areas of strategic importance to the People's Republic of China and Ireland.

Researchers at Trinity were acknowledged for their innovative research and entrepreneurship at the Trinity Innovation Awards 2017. The Provost Innovation Award went to Professor of Biochemistry, Luke O'Neill for his outstanding contribution to innovation throughout his career.

Three projects at Trinity secured funding of €1.5 million each via prestigious European Research Council Starting Grants. The recipients are Dr Larisa Florea, who will develop new bio-inspired microscopic vehicles fabricated from stimuli-responsive materials using advanced 3D fabrication technologies; Dr Maria Brenner secured funding for TechChild, a project that will pioneer research on influences on initiation of technology dependence for children with complex care needs and Prof Eduardo Ruiz-Hernandez's project is called REACT and aims to dramatically impact the targeted release of diagnostic agents.

Three Trinity researchers were presented with medals of excellence by the Irish Research Council at an event celebrating 15 years of council. The awards, which recognise top-ranked postgraduate and postdoctoral researchers, were presented to Miriam Cummins, School of Creative Arts; Aisling Heeran, School of Medicine; and Dr Natalia Muñoz-Wolf, School of Biochemistry and Immunology.

5. Innovation and Commercialisation

Trinity Research & Innovation (TR&I) promotes and manages the interface between Trinity researchers, funding agencies and industry, through the Research Development Office, the Contracts Office, and the Office of Corporate Partnership and Knowledge Exchange.

Key highlights in 2017/18 include:

- Huawei announced a new research partnership with Trinity as part of its growing R&D footprint in Ireland. The new research cooperation will focus on Video Intelligence and how the emerging area of artificial intelligence will impact society.
- University Bridge Fund managed by Atlantic Bridge (seed funding) is in its second year and made 11 investments in 2017/18, of which three were Trinity companies.
- Trinity is leading ENABLE, a new €14.5 million SFI research programme that was launched in February 2018 and will examine how the Internet of Things can improve the quality of life for citizens living in urban environments.
- Significant external investments into campus companies (Data Chemist (€1.2 million), Volograms (€600k), CroiValve (€400k).
- €4.5 million of new industry cash for research engagements in 2017/18 academic year.

5.1 Research Funding

During the 2017/18 academic year, 1,250 research funding applications, with an associated value of ca. €408 million (not including institutional overheads from SFI and EI) were supported by the Research Development Office.

In the same period, 801 new research contracts were awarded to Trinity with a combined total value of €107 million; Trinity awarded 361 contracts (worth €24 million) to external entities.

5.2 Intellectual Property

The Office of Corporate Partnership and Knowledge Exchange received 80 disclosures of novel intellectual property created by Trinity researchers, filed 19 new patent applications, and granted 27 commercial licences. The formation of five new Trinity campus companies was approved – four of which raised €5.75 million in seed funding. Sixty one collaborative research agreements were concluded with a minimum of €25,000 contributed by industry partners to each collaborative research agreement.

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Invention disclosure forms	48	58	53	60	61	80
Patents	16	23	18	17	18	19
Licences*	9	30	23	34	13	27
Campus and spin-out companies	5	4	3	2	4	5

* Refers to licences, options and assignments

5.3 Launchbox and Launchpad

The hugely successful student incubator programme LaunchBox, Tangent's Student Accelerator has created 70 start-ups that have gone to raise over €9 million in funding and investment since its inception in 2013.

Ten student-led start-up teams were selected for LaunchBox this year – benefitting from coaching, expert advice, seed funding and access to incubator space and facilities. Some of the teams – including Change Donations and Work Smarter – have moved on to next-stage entrepreneur development programmes and kick-started operations with paying customers.

Change Donations is creating a platform that allows users to donate to the charity of their choice efficiently and conveniently by rounding up payments made on your debit card. Since leaving LaunchBox, Change Donations have become Dogpatch Labs residents, been accepted on to the Prince's Trust Enterprise Programme and placed as one of just three Best Early-Stage Concepts for the Responsible Innovation Summit. Work Smarter, which combats late payments in the construction and freelance industries, offers a comprehensive toolbox for small business owners and freelancers that combines work management tools and a unique escrow payment solution. Since finishing LaunchBox they have been accepted on the Huckletree Alpha programme, and are beta testing their platform.

LaunchBox is just one avenue through which Trinity students can nurture their entrepreneurial skills. The Blackstone LaunchPad campus entrepreneurship programme operates from the Berkeley Library, and fosters student entrepreneurs, connecting them with the start-up ecosystem. Over 230 student start-ups have registered since LaunchPad opened in 2016 and more than 40 student start-ups have progressed on to early stage funding.

6. Human Resources

Human Resources' primary purpose is to partner with the college community to deliver Trinity's Strategic Plan 2014-19. Its main pillars of work and achievements during 2017/18 are as follows:

Talent Management and Development

Over 150 learning events involving 13 programmes were delivered, with 1,665 participants. The second 'Your Trinity' staff information day was attended by 300 staff.

Mentoring and career development activities included a three day induction for all new academic staff; the mainstreaming of a Career Development Programme for all Early Career academics; the introduction of an Assistant Professor Development programme; and a master class series for the Ussher II Professors in their second year of a development programme.

In addition, the following blended learning and supports were introduced: Lynda.com for all staff and 1,323 users secured 796 certificates of completion; Epigeum - Professional Skills for Research Leaders for research and academic staff using the University's blackboard platform; and in partnership with Trinity's research centres, Vitae, an on-line resource portal for researchers and academic staff.

Processes and Procedures

Human Resources continued to drive improvement in service delivery across strategic and operational priorities in 2017/18. A major HR systems upgrade was delivered without interruption to services. It creates a solid platform for payroll, pensions and staff records and allows for the roll-out of enhanced online functionality.

The Model Pension Scheme formally adopted the rules set out by the Minister for Public Expenditure and Reform. This places the scheme on a statutory footing and provides a clear set of rules for all members. The Employee Services and Payroll Teams produced in excess of 80,000 payslips and all Public Sector Pay changes were completed on time and in line with the Government directives.

The HR Service Centre recorded 12,048 queries, of which 85% were resolved on the spot.

Staff Engagement

A 'Your HR' Managers Series was introduced to respond to specific skill and knowledge gaps with 14 events attended by 448 staff. The Employee Relations team delivered ten sessions on absentee management to 150 supervisors and managers while 14 HR Clinics were run in response to staff requests for increased accessibility to the HR team.

6.1 University Staff

Trinity continues to be an attractive employer in the job market and with a high level of job offer acceptance by the top-ranked candidate.

In 2017/18 recruitment activity remained high. The Recruitment team advertised 430 posts across a range of University activities: Professor Chairs; Academic positions; Technical; Management and Administrative grade positions; Buildings & Services and Library positions.

During the year, 8,879 applications were received in total: 1,635 applications for academic vacancies and 7,244 applications for professional, administrative and support vacancies; 1,633 applicants were shortlisted (247 academic, 1,386 professional, administrative and support) of which 70 were appointed to academic posts and 337 were appointed to professional, administrative and support posts. This is consistent with the levels of recruitment competitions in 2016/17.

In addition to the appointments handled by the Recruitment team, the Contracts team issued 1,782 contracts in 2018 for appointments taking place outside of Recruitment (Research posts; change of contract terms; contract renewals). This is an increase of 121 contracts on the previous year.

6.2 Professor Appointments

In 2017/18, the Faculty of Arts, Humanities and Social Sciences appointed the Professor of English Literature (1867) who commenced in October 2018 and the Lecky Professor of History (1913) who commenced in September 2018. In addition, the Faculty of Health Sciences appointed the Professor of Nursing and Chronic Illness (2017) who commenced in June 2018 and the Ellen Mayston Bates Professor of Neurophysiology of Epilepsy (2016) commenced in July 2018.

6.3 Senior Administrative Posts

Appointments made to Senior Administrative positions during 2017/18 included: Director of Campus Infrastructure (Estates and Facilities); Director of Student Services (Office of the Chief Operating Officer); Chief Risk Officer (Corporate Services Division); Deputy Internal Auditor (Secretary's Office); Manager, Academic Services Division; Head of Student Entrepreneurship (Academic Services Division); Head of Clinical Sponsorship Oversight (part-time) (Academic Services Division); Programme Manager for Library Strategic Projects (Library); FIS Team Manager (Financial Services Division); Director of Executive Education for Trinity Business School; Enable Executive Director and Spoke Development Manager for the School of Computer Science and Statistics; Senior Business Development/Sales Manager (Learnovate Centre); and Trinity Health Innovation Hub Manager (School of Medicine).

7. University Initiatives and Key Events

There were several new initiatives and key events in Trinity during the academic year 2017/18.

In May 2018, Trinity announced plans for a €60 million E3 Initiative, a new Engineering, Environment and Emerging Technologies institute. The Institute will provide 1,800 new STEM places for students, addressing a skills shortage in Irish economy. E3 is a transformative multi-disciplinary approach to shaping the planet's natural capital integrating engineering, natural and computer sciences. The institute is funded through the single largest donation from Irish philanthropists (€25 million) in the history of the state, thanks to the Naughton family through the Naughton foundation combined with government funding.

An Taoiseach Leo Varadkar, T. D., announced Trinity's plans for the establishment of a Grand Canal Innovation District including a new €1 billion campus in July 2018. The new innovation district is set to be a hub for talent, investment and jobs in Dublin. The proposal is modelled on innovation districts in Boston, Toronto, Rotterdam and Barcelona. It will significantly strengthen Ireland's competitive advantage when developing new indigenous companies or competing for foreign direct investment. Trinity has signed a memorandum of understanding to work with other Dublin universities on the initiative.

Trinity became the first university in Ireland to join the International Sustainable Campus Network (ISCN) in February 2018. The ISCN is a global forum of leading colleges, universities, and corporate campuses exchanging information, ideas, and best practices for achieving sustainable campus operations and integrating sustainability in research and teaching.

The Trinity community agreed to replace or eliminate disposable plastics, and to phase out disposable plastic containers and utensils over the next two years.

Trinity was again ranked 1st in Europe for producing entrepreneurs, according to The Universities Report published September 2017 by private equity and venture-focused research firm, Pitchbook. Trinity graduates have raised \$2.372 billion in funding across 201 companies in the last decade. This is a testament to the quality of students coming through, the competitiveness of the Dublin innovation ecosystem and Trinity's role in enabling entrepreneurship talent.

The new Trinity Centre for Literary and Cultural Translation (TCLCT) launched in April 2018. The first Centre of its kind in Ireland and only the second in UK and Ireland, it showcases the university's proficiency in modern languages and is building relationships with other cultural institutions in Dublin to host events that place translation and global languages centre-stage.

The Trinity Centre for Gender Equality and Leadership (TCGEL) was officially launched by the Chancellor of Trinity, Dr Mary Robinson. Building on the success of its predecessor – the Centre for Women in Science and Engineering Research (WiSER) – TCGEL expands its remit to all academic disciplines and support areas of the University, with the aim of delivering on strategic objectives to advance gender equality and to drive sustainable structural and cultural change.

In March, a global 3D printing lab opened in Trinity's AMBER research centre. 3D printing is a revolutionary technology that is changing the face of innovation in a market projected to be worth over 200 billion US dollars by 2025. This Global 3D printing lab is a collaboration between Trinity's AMBER and multinational healthcare company Johnson & Johnson Services and is expected to transform healthcare delivery for patients.

Former US Secretary of State Hillary Rodham Clinton delivered a public lecture at Trinity, in which she addressed the power of young people to shape the future, challenges to democracy and the role of women in politics. She was also awarded with an honorary degree at Trinity as part of her visit.

The President of the European Central Bank, Mr Mario Draghi gave a keynote address at Trinity on 'Youth unemployment in the euro area' at the School of Social Sciences and Philosophy's annual Henry Grattan Lecture in September. Mr Draghi was also presented with the Gold Medal of Honorary Patronage by the University Philosophical Society.

Other notable visits during the year include the Duke and Duchess of Sussex, Prince Harry and Meghan Markle who visited Trinity in July on their first official visit outside of the UK as a married couple. In June, the head of the International Monetary Fund, Christine Lagarde, was guest of honour at a lunch celebrating women in leadership hosted by the School of Social Sciences and Philosophy. The Italian President, Sergio Mattarella visited Trinity in February and met with Italian students and academic staff, viewed the Library's collection of Italian books and Samuel Beckett's notebook from 1926 when he was preparing for his final Trinity examination in Italian.

A ground-breaking project, 'Beyond 2022: Ireland's Virtual Record Treasury' which will digitally recreate the building and contents of the Public Record Office of Ireland, destroyed by fire at Dublin's Four Courts at the outset of the Irish Civil War, was launched in February. The Irish Research Council funded collaboration led by Trinity with its four archival partners - The National Archives of Ireland, The National Archives (UK), The Public Record Office of Northern Ireland and The Irish Manuscripts Commission - has the potential to transform how we understand Ireland's past and will be of great interest to the Irish diaspora and anyone tracing their Irish roots.

Nobel Prize winner and Trinity graduate, Professor William Campbell launched Trinity's Undergraduate Science Programme in November 2017. One noteworthy change in the renewed Science programme is that there are now four entry routes, each focusing on one distinct area of science: Physical, Chemical, biological and Biomedical Sciences, and Geography and Geoscience. Each stream leads to a diverse range of possible degree specialisations, which include those previously accessible only through direct entry. The process is a result of the Trinity Education Project, a university-wide project to renew our undergraduate education provision.

In April, Trinity launched 40 fully funded Provost's PhD Project Awards. They were open to EU and Non-EU candidates and included an annual stipend of €16,000 for four years. These doctoral awards were generously funded through alumni donations and profits derived from Trinity's Commercial Revenue Unit. The successful 40 projects showcase the range, depth and quality of the research taking place in Trinity.

Trinity celebrated the endorsement of the 10 Principles of an Age-Friendly University, which set out the distinctive contribution that can be made by higher education institutions in addressing the needs of older adults. In adopting these principles Trinity joined a growing network of universities from Ireland, the United Kingdom, Canada and the United States that are united in their commitment to equality and inclusion for all ages.

The Trinity Centre for Ageing and Intellectual Disability, the first dedicated Centre to investigate key issues in ageing, intellectual disability and the life course, was officially opened. The Centre will advance world-leading research through a transdisciplinary approach to inform clinical practice and make a real impact in people's lives for the future. Ten years of participation in a longitudinal study on ageing for people with intellectual disability was also celebrated. The first of its kind worldwide, the Intellectual Disability Supplement to The Irish Longitudinal study on Ageing (IDS-TILDA) has been researching ageing in Ireland among people with an intellectual disability aged 40 and over, for the past decade.

'PROBE: Research Uncovered', a pop-up festival returned in September with a packed programme of talks, experiments, and interactive workshops showcasing the best of Irish research. Over 3,000 visitors came to Front Square and contributed to live research experiments and joined workshops dealing with a range of topics. PROBE, a collaboration between Trinity and Science Gallery Dublin in partnership with the British Council, was part of European Researchers' Night, taking place in cities across the continent.

The Faculty of Engineering, Mathematics and Science hosted 2018's Trinity Week with a public programme of lectures, symposia and activities around the theme Energy. Age-Friendly Trinity organised a photo exhibition on 'Energy at Any Age' to coincide with the week.

The first major Irish exhibition on Oscar Wilde, one of Trinity's most famous alumni, featuring letters, photographs, theatre programmes, books and memorabilia was on display in the Long Room in October. Entitled 'From Decadence to Despair', the exhibition and accompanying online exhibition mapped out the Anglo-Irish playwright's meteoric rise to fame and also his dramatic fall from grace. Actor and writer Rupert Everett participated in a public interview to mark the opening.

Marking the centenary of women's suffrage in Ireland, an inter-institutional online exhibition - Violence, ridicule and silence - curated by Trinity's Library plotted Irish women's road to the vote in 1918. Also marking the centenary, the Story Spinners: Irish Women and Children's Books exhibition showed the central role that women played in Irish history, politics, and culture, including literary arts. It offered a glimpse into the wealth of material produced for young readers over several centuries and formed part of Children's Books Ireland's nationwide BOLD GIRLS initiative.

Trinity continued its commitment to playing a leading role in helping to catalyse the creative and cultural arts in Dublin. The Trinity Creative Challenge fosters the development of ambitious and innovative interdisciplinary projects and works. The winners of the Trinity Creative Challenge Awards 2018 are visual artist, Siobhan McDonald with her work, 'Future Breath' and performance artist, Dylan Tighe with his piece 'Pasolini's Salò Redubbed'. The mixed media project, Centre for Genomic Gastronomy also received an award.

The University celebrated the selection of 18 Laidlaw Scholars, the first cohort of Trinity students to join the Laidlaw network in May 2018. The Laidlaw Scholarship was established in 2014, thanks to Lord Laidlaw of Rothiemay's commitment to the development of young people. The scholarship is designed to assist undergraduates become leaders in academia or other sectors; it supports self-motivated and ambitious undergraduate students to gain the knowledge and skills to become future leaders.

8. Capital Development Programme

The new €80 million Trinity Business School, designed by Scott Tallon Walker architects, progressed well, and is on budget and on schedule. This project comprises six floors of teaching and research space, including an Innovation & Entrepreneurship Hub, a 600-seat auditorium and a College Boardroom. It includes the restoration of six terraced houses on Pearse Street for residential accommodation and new catering facilities. Building works are well underway for our new 250-bedroom student accommodation building on Pearse Street, due for completion at the end of 2019, which will also have Student services space. Approvals are also in place to start planning work on a new student accommodation building in Trinity Hall, Dartry. Procurements have commenced to select project managers and design teams

Trinity appointed internationally renowned architects Feilden Clegg Bradley to the E3 Learning Foundry on the site of the former Biochemistry building, comprising 6,000 sq.m. of modern space for collaborative, project-based and informal learning. The first planning application was prepared and the project will take a number of years to complete, including refurbishment of vacated spaces in several areas around campus.

To boost the amount and quality of sports facilities at Trinity, and respond to ever increasing demands, additional all-weather sports facilities have been provided at Santry and further developments are planned there. Works are complete to improve and expand the Fitness Theatre in the Sports Centre. In addition, Trinity has also acquired the former Diageo sports facilities at Iveagh Grounds in Crumlin, and plans will be developed to provide enhanced facilities there.

A €9 million project to increase the maximum electrical import capacity for the University, and to combine multiple existing supplies into one, was completed under budget and on schedule and is fully operational. Important maintenance projects and energy management initiatives continue around the campus, and more are planned (subject to funding), to ensure the College can provide a safe and healthy environment and to improve and maintain a high level of standards in our built environment.

A refresh of public spaces is underway in the Arts Building, and is on budget and on schedule, with a second phase planned for summer 2019. This will see modern and functional 'learning commons' style furnishings and finishes in areas for students to collaborate.

Trinity is committed to providing the best student accommodation possible and continues to work through a programme of refurbishment including refurbishment work in the north range of Botany Bay.

Other projects are in early strategic stages, such as the Old Library Redevelopment project, a refurbishment of the Rubrics, a new Law School and the significant development of our 5.5-acre campus in the Trinity @Grand Canal innovation ecosystem project.

8.2 Energy Conservation

In 2017/18 Trinity's buildings consumed 35.6 million kWh of electricity (a 0.6% increase from 2016/17) and just over 47 million kWh of natural gas and oil (a 15% increase from 2016/17).

Electricity consumption on the main city centre campus recorded a very small reduction which was a very positive outcome. Consumption in a number of new locations such as the Iveagh Grounds, the ILOFAR telescope and Visitor Centre in Birr, Co Offaly and full year ramp up consumption in several other buildings resulted in the nett overall increase in electricity consumption. The year was a difficult year for heating, pushing up natural gas consumption with several weeks of sub-zero temperatures and lying snow during the winter.

Throughout the year several projects were completed to improve energy efficiency. Notably the last oil-fired boiler on the main campus was replaced with a high efficiency condensing natural gas boiler. This completes a major project commenced some decades ago to convert what was predominately oil-fired boilers on the campus to natural gas which has improved both efficiency and reduces the associated CO₂.

Exterior flood lighting and exterior lighting was replaced with LED low energy lighting. The upper floor of South Leinster Street was replaced with LED lighting. As part of an enabling works for several capital projects the main campus electrical distribution was upgraded. This involved the replacement and upgrading of 11 private Medium Voltage (MV) electrical substations with replacement of MV transformers with high efficiency loss transformers. The maximum import capacity (MIC) was also increased to facilitate the demand associate with new development planned for the coming years.

Construction work progressed on the new Trinity Business School (TBS). This building which will be completed in spring 2019 will meet the requirements of Near Zero Energy Buildings (NZEB). The building will have on site renewable energy provided by roof mounted photo voltaic (PV) panels; is predominately naturally ventilated and a full LED lighting system with centralised lighting control system.

The TBS development will be followed with the completion of the Printing House Square later in 2019. This building will provide student accommodation for 249 bed spaces, University Health Centre, Disability Services, sports facilities and space for facilities and services. It will also meet the requirements of NZEB standard, but also constructed to be a BREEAM Excellent standard. The BREEAM standard covers a wide variety of key sustainability criteria. The new development when complete will be a very visible commitment of the University to be an environmentally sustainable campus. It will be highly insulated, have full LED lighting, a new 100 kW combined heat and power (CHP) plant plus several measures to minimise and reduce water consumption.

Planning commenced for the development of the E3 Learning Foundry during the year. This building is being designed to be NZEB and BREEAM Excellent: it will be a highly sustainable building with on-site renewable energy and extensive heat recovery and the first Trinity building not requiring any fossil fuel for thermal heating. It will be a working laboratory allowing renewable energy sources and engineering structures to be demonstrated as part of the respective schools teaching and research projects.

The Provost's Advisory Committee on Sustainability and Low Carbon Living continued working throughout the year. This committee is charged with planning how to make the University a more sustainable campus across nine key areas. The key areas range from energy, waste, water, resource use, biodiversity, green procurement, education and communication/student involvement. Trinity College Dublin became the 1st Irish university to become a member of the International Sustainable Campus Network (ISCN) which commits the University to improve organisational sustainability with the collective learning and knowledge sharing of peer universities in this area.

Ongoing energy awareness campaigns were coordinated with the University Green Campus Committee and complimentary campaigns run in conjunction with the Office of Public Works (OPW). The campaigns were well supported by students.

Trinity's energy conservation target is linked to the current National Energy Efficiency Action Plan 2 (NEEAP 2). The national public sector programme is to reduce primary energy consumption by 33% by the year 2020 measured against a base year 2006 - 2008. The most recent report confirms the energy intensity (efficiency) as measured by the Energy Performance Index (EnPI) has reduced (improved) by 28% since the benchmark year. The objective is to continue to improve the EnPI by approximately 3% each year to reach the target of 33% by year end 2020.

The gross expenditure for the year 2017/18 for utility cost amounted to €7.47 million (€6.75 million for 2016/17). The financial year saw the end of some historical lows on energy prices and several of the universities' energy contracts had to be renewed. This was completed with the Office of Government Procurement to lever the collective purchasing power of the 3rd level sector. Energy prices for both electricity and gas both increased with a significant increase in gas unit price compounded by the increase in consumption associated with the very cold winter.

9. Philanthropy

In May 2018, the Naughton Foundation announced the single largest private philanthropic donation in the history of the state to Trinity, a gift of €25 million, paving the way for Trinity's ambitious new E3 Initiative, a new Engineering, Environment and Emerging Technologies development. E3 will bring together engineers alongside natural scientists and computer scientists to strive for solutions to some of the greatest challenges facing our planet today. Martin and Carmel Naughton and their family invest in excellence in many fields including education, science, technology, engineering and the arts. Their support to Trinity includes the development of the Naughton Institute incorporating Trinity's nanoscience institute, CRANN, and the Science Gallery, the Seamus Heaney Professorship in Irish Writing, the Naughtons Scholarships programme and now the development of the E3 Initiative at Trinity.

Other philanthropic highlights this year included a contribution by Nobel laureate and Trinity alumnus, Professor William Campbell, who donated to the Department of Zoology from his Nobel Prize fund. Trinity used this donation to establish the W. C. Campbell Moderatorship Prize, Undergraduate Research Prize, and Postgraduate Teaching Inspiration Award. Trinity also received a significant legacy from Professor John Byrne to support Computer Science and Engineering students through the Student Hardship Fund.

The Irish Longitudinal Study in Ageing (TILDA) was awarded continued funding from the Department of Health, The Atlantic Philanthropies and Irish Life. This new round of funding enables TILDA to continue its valuable work as Ireland and the world face the challenge of an ageing population.

The Samuel H. Kress Foundation Conservation Fellowship was awarded to Trinity to fund a ten-month placement in the Conservation Department of the Library. This enabled the appointment of Lauren Buttle to conserve and rehouse papyri, including Books of the Dead, Mythologies and legal documents from the collection donated in 1838 by Edward King, viscount of Kingsborough.

The Ryanair Foundation announced €1.5 million funding of a Professorship of Entrepreneurship. The new professorship will drive and direct entrepreneurship and innovation at the Trinity Business School and across the university.

With over 140,000 alumni in 150 countries worldwide, Trinity is committed to staying in touch with all graduates in order to provide opportunities for them to engage with, and support, their alma mater.

Alumni were very generous with their support of Trinity during the year. Two hundred and twenty two alumni mentors connected with 720 student mentees during a series of alumni to student mentoring events on campus. In addition, many alumni abroad have supported international student recruitment as well as being host to many Trinity students studying abroad. Over 1,000 alumni volunteered during the year and more than 2,500 alumni donated to the university

10. Financial Statements for the Year-ended 30 September 2018

Please access link below:

https://www.tcd.ie/financial-services/external-assets/pdfs/Consol_Financial_Statements_1718.pdf

Appendix I

Attendance at Board meetings 2017/18

There were 11 meetings of the Board (Governing Authority) in 2017/18, attendance noted below.

Ex-officio members:

Provost (Dr Patrick Prendergast) (11), Vice-Provost/Chief Academic Officer (Professor Chris Morash) (10), Senior Lecturer/Dean of Undergraduate Studies (Professor Gillian Martin) (10), Registrar (Professor Paula Murphy) (10), Bursar/Director of Strategic Innovation (Professor Veronica Campbell) (11).

Elected members:

Professor Deirdre Ahern (11), Professor Sarah Alyn Stacey (8), Professor Sylvia Draper (8), Ms Sheila Dunphy (3¹, Ms Stephanie Farrell (9), Dr Darren Fayne (10), Ms Mary Foody (3)², Professor Robert Gilligan (9), Mr James Keogh (9), Professor Claire Laudet (11), Professor Brian Lucey (6), Professor Catherine McCabe (10), Professor Rachel Moss (10), Professor Eunan O’Halpin (8), Professor Diarmuid R. Phelan (9), Professor Aiden Seery (10), Professor Richard Timoney (11).

External Members:

Dr Olive Braiden (9), Mr Tony Keohane (1)³.

Student Members:

Mr Shane Collins (11), Mr Kevin Keane (11), Ms Damien McClean (10), Mr Alice MacPherson (10)

Appendix II

Board Expenses 2017/18

No fees are paid to members of the Board (Governing Authority). The external Board members are entitled to Senior Common Room membership fees of €279. No other expenses were claimed by Board members for in the academic year 2017/18.

1 Eligible to attend 6 meetings.

2 Eligible to attend 4 meetings.

3 Eligible to attend 5 meetings.



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Annual Report **2017-18**

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