

A LIVING RESEARCH EXCELLENCE STRATEGY



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

FOREWORD



Research is at the heart of what we do in Trinity. It is part of our core mission along with teaching. In preparing this Research Excellence Strategy the passion of our staff and students for their work has been evident in the huge input that has been made to this document, and to the accompanying Research Charter. The wealth of ideas and suggestions that were forthcoming speak to the real desire to be research leaders and to continue to build and improve our research culture.

We do live in challenging times, and they are no less challenging for research. In one sense, research always involves a struggle – a struggle on the individual level to uncover new knowledge, make the breakthroughs, or create something new, and a struggle at the system level to defend the value of research and to fight for its full support.

This research excellence strategy seeks to address both the opportunities and the challenges we face and build on the great strengths and talents of the people in Trinity. Sincere thanks go to the many colleagues who helped shape this plan.

Linda Doyle

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THE ESSENCE OF THE RESEARCH EXCELLENCE STRATEGY

With the right supports and the freedom to act, we as researchers can continue to make enormous contributions to knowledge and significant breakthroughs.

Introduction

Research is an essential part of what we do in Trinity. We are driven by a passion for research and scholarship. Our research has a fundamental influence on our teaching. Research, along with teaching, forms our identity. It is one of the factors that makes Trinity the leading university in Ireland. And our standing in the research world contributes significantly to our international reputation.

With the right supports and the freedom to act, we as researchers can continue to make enormous contributions to knowledge and significant breakthroughs that will have great impact upon the world and humanity. However, we operate in a country in which investment in the Third Level sector, and in research even more so, has suffered significantly over the last decade. We are working at a time when political threats such as Brexit dominate for our economy and society. We also live in a world in which the demands on each individual researcher, and on all staff in the university as a whole, continue to grow. Yet despite the constraints and challenges, it is our desire always to do better, to continue to address burning questions that advance knowledge for its own sake and for the sake of society.

It is against this backdrop that this Research Excellence Strategy is written. It recognises the challenges we face but aims to be a document that inspires a way forward, encourages us to further excel, and carry out the very best research in Trinity.

A Living Research Excellence Strategy

The research world is a dynamic one that is frequently challenging and often changing. This Research Excellence Strategy echoes that. The strategy described here aims to provide a clear and strong framework to drive our ambitions while at the same time allowing a dynamic approach to its implementation. The idea of a 'living' Research Excellence Strategy recognizes the expansive nature of research. All parts of Trinity, and all staff and students, have a role to play in the future of our research, and the ownership of the actions contained within this plan need to be taken on by many. It is about giving a strong voice to research and keeping the conversations around research alive and vibrant. It is about learning by doing and updating and refining our actions as we do. It is about constantly striving for excellence together.

The Foundations of the Strategy – the Research Charter

This plan is built on our Research Charter. Over the first half of 2018, a Research Charter that listed key principles underpinning our approach to research was created. The Charter was the result of a highly consultative process that engaged people from different disciplines and divisions across Trinity. Over 60 different meetings took place.

In the Charter our vision is set out as one that is about engaging in research with the quality, intensity, depth, diversity, and openness that leads to fundamental breakthroughs, new understandings, key insights, and that can make translational and transformative advances – so that we can build a world in which we want to live.

The seven principles that emerged are seen as a means of developing the kind of research environment that will allow us to deliver on this vision. The Charter describes each principle in turn and sets out a high-level goal associated with each.

Principles from the Research Charter and the High-level Goals

Principle	High-Level Goal
Cherish academic freedom, diversity of scholarship and pursuit of truth	<i>To be synonymous with a culture of academic freedom, diversity of scholarship, the pursuit of truth, and the highest level of academic standards.</i>
Position research at the heart of Trinity	<i>To fully reflect the research intensity of the institution in our governance, structures, and operational practices.</i>
Foster and grow research talent and leadership	<i>To develop the kind of research environment that attracts and nourishes the very best research talent, and allows our researchers to excel at all stages of their career.</i>
Harness our collective expertise for the greater good	<i>To be bold in defining and taking the lead in multidisciplinary initiatives or emerging fields of research that leverage our expertise, for the long-term benefit of humanity.</i>
Broaden our local and global impact	<i>To identify and deliver opportunities for local and global impact that exemplify the diverse forms of scholarship that are part of the Trinity research landscape and drive impact to new heights.</i>
Engage profoundly with our publics	<i>To be a world leader in how we communicate our research to our multiple audiences.</i>
Stand up for research	<i>To be a champion for a balanced research ecosystem in Ireland and Europe, one that has excellence as a foundation, and influence how research policy is developed to achieve this.</i>

The table above captures those principles and goals. The Charter is our public commitment to the values that underpin our research and is the starting point for the Research Excellence Strategy. This Research Excellence Strategy is the internal document that provides a framework to guide our actions.

From High-Level Charter Goals to Detailed Actions

The Research Excellence Strategy is about actions we need to take to make the Charter a reality. To move from that starting point, a detailed process of mapping the principles and high-level goals to actions was undertaken. Many of the ideas and recommendations that arose during the consultation phase for the Charter played a role at this stage of the process as well.

The mapping process led to the identification of a whole range of actions that we need to undertake. The Research Excellence strategy is written from the perspective of the resulting actions that stem from our analysis. These actions break down as follows:

- 1 *Stimulate and build strategic research collaborations*
- 2 *Make it easier to do research*
- 3 *Generate the funding and resources we need*
- 4 *Radically revise how we do research communications*
- 5 *Join the dots on all policies relating to our research*
- 6 *Be bold in planning our long-term research future*

A chapter will be devoted to each type of action. More detailed action plans will be mapped out in implementation plans and these will be updated as needed to reflect the dynamic nature of the strategy.

The Wider Strategic Landscape in Trinity

Before proceeding, it is important to recognise that this Research Excellence Strategy does not operate in a vacuum. There are many other areas in Trinity which have worked on their own strategic plans. It makes sense that any resonances and linkages with those plans should be leveraged.

Currently there are three existing strategies which have implications for this Research Excellence Strategy and vice-versa. The Trinity Education Project is the first of those. The graduate attributes in TEP are ones that are very much the kind of attributes that our PhD candidates, and indeed all involved in research, should have: namely to act responsibly, to think independently, to develop continuously and to communicate effectively. While research always informs our teaching, TEP explicitly recognises this to the benefit of all undergraduates in the TEP electives.

The newly launched Estates and Facilities Strategy is of huge importance when it comes to thinking about how we use space in this university. A number of plans within that strategy are directly related to research expansion. More broadly, being able to use the space we have more efficiently is crucial. The Global Relations Strategy 3, GRS3, also resonates as we aim to further build our global reach and develop strong networks that can work in harmony with research goals.

There are also strategies in the making. The future Digital Trinity strategy will have implications for research, both in terms of general support for research administration as well as support for learning and development. Over 2019 a new Strategic Plan for the university is being developed and the Research Excellence Strategy will inform that. In fact, the new Trinity Strategic Plan is very explicitly building on the ongoing work in all of the areas mentioned above. It can, therefore, also provide an opportunity for linking between areas, such as in the area of the integration of research and teaching. It is worth emphasising that research-led teaching is and will remain a central principle of our activities.

The Wider Cultural Landscape in Trinity

Finally, Trinity also has a unique cultural landscape in which our research takes place, and this should not be overlooked when working on our research future. These institutions offer us many opportunities for differentiation and growth.

Our Library dates back to the establishment of the College in 1592 and it is the largest library in Ireland. It has over 6 million printed volumes with extensive collections of journals, manuscripts, maps and music reflecting over 400 years of academic development. The Library is central to much of the research we do in Trinity and will continue to play a major role.

We also have newer cultural institutions that play a part and are growing on the research front. The Douglas Hyde Gallery is renowned for excellence and has a 40 year history of first class exhibitions. On the opposite corner of the main campus is the Science Gallery that has carried out cutting-edge programmes for over ten years, and draws audiences in huge numbers. The Science Gallery is growing its research activities and is also at the heart of Science Gallery International – a global network that grew from the efforts here in Trinity.

Conclusion

This living Research Excellence Strategy will contain a number of already well-defined actions which sit within the different categories. More importantly it will also consist of emerging actions that will require more research and discussion to pin down. Ideally, it will also grow to contain new ideas that push us to do things very differently.

There are objectives that need to be balanced. In a research world of increased complexity and demands we need to find more ways to allow staff and students to simply get on with their research and to excel. But we also need to make sure, to use a well-worn but useful phrase, that the whole of our activities is greater than the sum of the parts. The latter is especially important in a highly competitive research environment.

01. STIMULATE AND BUILD STRATEGIC RESEARCH COLLABORATIONS

In deciding our path, we need to make the best use of the research expertise and research support we have. We also need to look outwards, at external opportunities and at societal needs.

CONTEXT

Research in Trinity is based on individual curiosity-driven endeavour as well as on collective effort. As individuals, we have academic freedom to pursue our own research paths. We trust our staff and students in their individual endeavours. Much of the excellent research that has emerged in Trinity is driven by individuals.

The set of actions in this part of the Research Excellence strategy focus on collaborations. Increasingly, we face research challenges that either require critical mass to make progress, or are of a nature that cannot be solved from one perspective alone. These call for collective effort. We also work together because by bringing together different researchers and diverse forms of research we open up the possibility of identifying new research questions, new opportunities, and new fields of study.

As an institution, we need to decide what opportunities make most sense for us. It goes without saying that any collaborative endeavour requires individuals who are themselves excellent. In deciding our path, we need to make the best use of the research expertise and research support we have. We also need to look outwards, at external opportunities and at societal needs. We need to be responsive, and we need to be ready for change. We need to take risks in going in bold new directions that can lead the way in research internationally.

This section of the strategy focuses on the collective efforts that draw us together. The actions address our desire to be at the forefront of new disciplines, and to work with each other on larger-scale initiatives that seek to build critical mass in specific areas, and revolve around multidisciplinary research challenges. The actions help us set out the direction for our university.

Link to the Charter Principles

The key principle to which these actions apply is Principle 4, to harness our collective expertise for the greater good. The actions described are also part of Principle 3, fostering and growing research talent as the collaborative initiatives described here both provide environments which can be supportive of staff and also attract new staff. Moreover, large-scale and highly visible initiatives, as well as initiatives that focus on societal challenges, contribute to Principle 5 of expanding impact locally and globally.

Key Actions

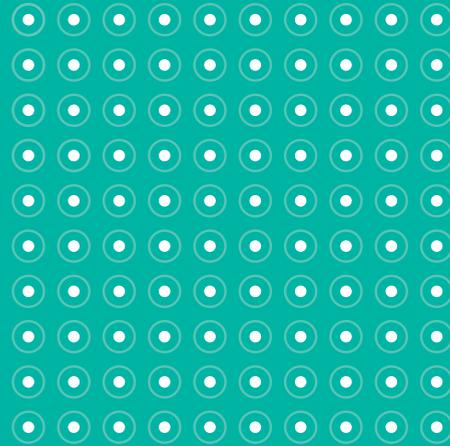
The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

1.1 Systematically develop, advance and refresh our collaborative research initiatives within Trinity

Trinity already has a strong and long history of research collaborations within and across disciplines in the university and is well known for interdisciplinary research. In planning where we go next it is important to stand back and look at all of our Trinity-based collaborations. While of course collaborative work happens in many guises, for example, within Schools, what is of relevance here are the more formal structures we have created in Trinity to support collaboration. To plan effectively, we need to look collectively at these initiatives and understand their reach.

Trinity research centres, of which there are more than 50, are the smallest formal scale at which collaborations occur. There are 19 themes which bring researchers together at a larger scale. The five Trinity Research Institutes (CRANN, TBSI, TCIN, TLRH and TTM) are more formal structures for focusing on areas of great strength in the university. Trinity also currently hosts three SFI Research Centres in Trinity (AMBER, ADAPT, and CONNECT), and is a participant in many others. The figure overleaf attempts to capture the range and breadth of scales of how we currently collaborate. There are also other collaborative initiatives beyond these groupings.

Different modes of Collaborative Initiatives in Trinity

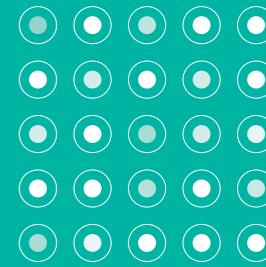


01 Trinity Research Centres →

Ageing and Intellectual Disability (TCAID)
Asian Studies
Beckett Studies
Biblical Studies
Biodiversity Research (TCBR)
Bioengineering (TCBE)
Computing and Language Studies
Contemporary Irish History
Creative Technologies and Media Engineering
Digital Business
Digital Humanities
Early Modern History
Environmental Humanities
Gender Equality and Leadership
Gender and Women's Studies
High Performance Computing (TCHPC)
Literary and Cultural Translation
Maternity Care Research
Medieval and Renaissance Studies
Mediterranean and Near Eastern Studies (MNES)
New Irish Studies

Non-profit Management
People with Intellectual Disabilities (TCPID)
Post-Conflict Justice
Practice and Healthcare Innovation
Psychological Health
Social Innovation
Environment (TCE)
Study of Immunology (TCI)
Urban and Regional Studies
War Studies
Advanced Medical Imaging (CAMI)
Global Health
Innovative Human Systems
Research in IT in Education (CRITE)
Transport Research and Innovation for People (TRIP)
Hamilton Mathematics Institute
Houghton Institute
Institute of Population Health
Irish Centre for European Law
Centre for Health Policy and Management
Trinity Plato Centre

Academic Gastroenterology Group Research Centre (TAGG)
Cancer Research Centre (TCRC)
EngAGE - Centre for Research in Ageing
Trinity Future Cities: Centre for Smart and Sustainable Cities
TrinityHaus Research Centre
Trinity Health Kidney Centre
Trinity Impact Evaluation Unit (TIME)
Trinity Institute of Cardiovascular Science
Trinity Irish Art Research Centre (TRIARC)
Trinity Medieval History Research Centre
Trinity Migration and Employment Research Centre
Trinity Oscar Wilde Centre for Irish Writing
Trinity Research Centre for Cultures, Academic Values and Education (CAVE)
Trinity Research in Childhood Centre (TRICC)



02 Trinity Themes →

Ageing
Cancer
Creative Arts Practices
Creative Technologies
Digital Engagement
Digital Humanities
Genes & Society
Identities in Transformation
Immunology Inflammation & Infection
Inclusive Societies
International Development
International Integration
Making Ireland
Manuscript, Book & Print Cultures
Nanoscience
Neuroscience
Next Generation Medical Devices
Smart Sustainable Planet
Telecommunications



03 Trinity Research Institutes →

Crann
Trinity Biomedical Sciences Institute
Trinity College Institute for Neuroscience
Trinity Long Room Hub
Trinity Translational Medicine Institute



04 Multi-Institutional

SFI Research Centres & Spokes Led by Trinity

Adapt
Amber
Connect
Fintech
J&J
Enable

National Initiatives Co-Funded by Trinity

The Irish Longitudinal Study on Ageing (Tilda)
IDS-Tilda
Growing Up in Ireland

Other Significant Initiatives

Mercer's Institute for successful ageing
Trinity St James Cancer Institute
Nature +

Trinity Research in Social Sciences
Trinity International Development Initiative

Armed with this knowledge, we can look at the university from a big picture perspective, build on the firm foundations of what we have already created, and seek to understand gaps, trends, connections and opportunities.

- 1 We can understand existing plans and commitments to future endeavours (e.g. E3, TTEC, Cancer) and see where they fit.
- 2 We can, from a top-down perspective, identify further gaps and areas that are primed for expansion and growth. The areas that are ripe for this are ones in which we already have expertise, have people willing to take on leadership, and in which there are opportunities for supporting growth. This combination is very important.
- 3 We can use existing entities as foundations for building initiatives at greater scale. For example, it may be useful to explore how existing Trinity Research Centres which resonate with each other might form some kind of cluster and, over time, develop into a theme or an institute as appropriate.

- 4 We can use other approaches¹ that encourage out of the box thinking to bring research domains in Trinity together. We can continue the pairing of researchers from different fields to spark new ideas. We can define clear mechanisms that allow ideas to percolate upwards, and that support all interested staff and students to make suggestions and take the lead.
- 5 We can regularly challenge and refresh existing initiatives. Collaborative initiatives take time to establish and grow. They require commitment and dedication. It is, however, important that we stand back at intervals and look at the ongoing initiatives to ensure they are still relevant, excellent and cutting-edge. It is important that we do not rest on our laurels. We also need to close down activities that are not functioning, and look for new opportunities: for example, for Trinity Research Centres to reinvent themselves. A quick view of all the collaborative platforms above, will quickly lead to the conclusion that a certain amount of triage is needed. Actions here include light touch reviews of all Trinity Research Centres, an analysis of the status of the themes with a view to closing down inactive themes or expanding in new areas if appropriate, and regularly questioning the role, fitness for purpose, trajectory and identity of our Trinity Research Institutes.

1.2 Bring the identified initiatives to fruition in an open and collaborative manner

Once initiatives are identified, through whatever mechanism (top-down/bottom-up), the work begins in making those initiatives thrive and excel. We should be transparent with our plans so that all in the university can see the overall direction of travel and can get involved where appropriate. The different initiatives themselves will require different actions in order to bear fruit. Depending on the state of development, they call for actions which range from building buy-in, identifying participants, developing the research ideas, identifying mechanisms for funding, matching hiring strategies to the initiative, and other more specific actions that depend on the exact type of initiative.

The tables that follow show the current direction of travel. The tables include initiatives that are already firmly on the agenda, as well as really strong elements of Trinity research that could be harnessed much more systematically and at scale.

The latter are the result of an initial scanning exercise that has coincided with the development of this strategic plan and should be read in that context. Much more work needs to be carried out to collectively flesh out target areas. Undoubtedly, there are other areas in which we have expertise, we have people willing to take on leadership, and in which there are opportunities for supporting growth. The table below will also be updated as initiatives are delivered and new opportunities arise.

1.3 Build the wider collaborative networks we need to do our research

Trinity is a very outward facing university, engaging nationally and globally, and our collaborations go beyond the walls of the university. We collaborate on research with colleagues across Ireland and with colleagues all over the world. The research networks in which we operate are important in establishing us as significant global research players. It is important we continue to build research networks that help us to deliver our research goals.

We can be strategic in deciding the new key institutional networks with which we engage at an institutional level.² These can be driven by the key areas of interest previously identified above, as well as other concerns such as Brexit. In creating and building networks for collaboration at an institutional level, we need to be more strategic in planning how we go forward, and how we make best use of the limited resources we have. Actions here include mapping current networks and identifying gaps, working more closely with Global Relations and others to get a better sense of all of the concerns for Trinity in building networks, and creating mechanisms for systematically choosing where to collaborate.

We need to make more strategic use of the networks we already have built. These include, for example, our EIT Knowledge and Innovation Community (KIC)³ networks which facilitate collaboration that is particularly useful for how we translate research into wider impacts, and how we create opportunities for innovation and entrepreneurship. The newly emerging EU University Networks also affords us the opportunity to build our research collaborations, as well as make further strong connections between research and joint degrees that could be offered across the network. The EU University Network may have increased importance in a post-Brexit context.

¹ Schrödinger at 75 – The Future of Biology was a major gathering in Sept 2018 and brought leading experts from around the world together to consider the future of biology. It was followed up by seminars for Trinity postdocs who gave their responses to the event to tease out directions of study for their work. www.tcd.ie/biosciences/whatislife/

² Academic freedom allows our researchers to pursue the kinds of research networks that support their work and allow them to contribute to the wider body of research, and this will always be the case

³ A Knowledge and Innovation Community (KIC), is a highly autonomous partnership of leading higher education institutions, research organisations, companies and other stakeholders in the innovation process that tackles societal challenges through the development of products, services and processes and by nurturing innovative entrepreneurial people

Planned Initiatives (with much opportunity for shaping and development)

Initiative	Comment
<p>The E3 Research Institute will follow on from the coming together of Engineering, Computer Science and Statistics and Natural Sciences in the E3 Learning Foundry. At the heart of E3 is a desire to solve the world's challenges through designing technical solutions that can work in harmony with the planet. The E3 tag line 'balanced solutions for a better world' encapsulates this. Rather than setting technology in tension with the planet, we are working together to create the balance that will create a better world.</p>	<p><i>The E3 Research Institute will be a highly interdisciplinary institute. It will draw on research expertise of the three schools involved in E3. It will also draw on our SFI Research centres, ADAPT, CONNECT, AMBER and ICRA. Currently, there are broad themes to guide the research - resources, production, environment, data, well-being and cities. This up-ending of disciplines allows us to tackle the mega trends that are shaping our world, such as changing demographics, urbanisation, depletion of resources, or shifting global powers.</i></p>
<p>The Grand Canal Innovation District will be Ireland's Innovation District. It will see the emergence of a new Trinity campus on the TTEC site. It will be a mixed development focused on academic and industry endeavours. It will be constructed to encourage and facilitate wide spread collaboration between academia, industry, start-ups, and the community. It will also retain its strong cultural elements (e.g. The Lir)</p>	<p><i>From a research perspective the GCID will open up many opportunities for Trinity and will draw on relevant research initiatives across three faculties. The E3 Research Institute will be an anchor tenant but the opportunities beyond that are huge. While the GCID is at an early stage, it is imperative we start to think about the research principles on which GCID will be built as well as the type of research that will happen in that location.</i></p>
<p>The Trinity St James's Cancer Institute aims to be the first comprehensive cancer care centre in Ireland and will focus on cutting-edge cancer research, extensive clinical trials, and first-class cancer education. It will be located on the St James's Hospital campus.</p>	<p><i>The Cancer Institute will open opportunities for bringing the cancer research we do together and growing it strategically. There are opportunities here for researchers in Health Science and in the Life Sciences more generally. There is potential here as well to build on our strengths in Immunology.</i></p>

Key Emerging Opportunities (which will require much input)

Trends	Comment
<p>The Whole Life (Lifecourse)</p>	<p><i>Trinity is already well established in the area of ageing research (TILDA, Mercer Institute for Successful Ageing, Global Brain Health Initiative, IDS TILDA etc.). We also have substantial research in the area of children. As with the case of ageing, it is highly interdisciplinary and brings together researchers from across AHSS, HS and EMS. We, in fact, take a very distinctive holistic approach that spans children's literature and their cultural well-being to health, education, policy and more. Many of the researchers involved across these different domains are already actively collaborating with each other.</i></p> <p><i>The building of the Children's Hospital at St James's offers further opportunities.</i></p> <p><i>The arc of our research essentially extends from birth to death. It is one that we can build on substantially and that lends itself exceptionally well to a multi-disciplinary perspective. What form such a joined-up endeavour may take is yet to be explored.</i></p>

Key Emerging Opportunities (which will require much input) *Continued from previous page*

Trends	Comment
<p>United Nations Sustainable Development Goals</p>	<p><i>We already have expertise in Trinity focusing on the Sustainable Development Goals. That expertise is deep and world class. However, our collective work on SDGs is not as visible as it should be and there is potential to deepen and add scale. A Sustainable Development Goal Hub is needed to, in the first instance, draw attention to the SDG related work we do, and in the second instance really push our SDG work forward. We already know of the huge opportunities that will exist in Horizon Europe and elsewhere. Even more importantly, SDGs represent a desire to make the world a better place and are aligned with our vision and mission.</i></p> <p><i>In driving the SDG agenda forward, there is opportunity across all faculties and disciplines. However, the SDG Hub will not be about re-badging research activity under SDG headings. Our aim will be to make parts of the SDG initiatives distinctly Trinity.</i></p> <p><i>There are many potential areas for growth. One such example is at the intersection of Gender, Climate Justice and Conflict. Here we can draw on a rich range of research from AHSS, through HS to EMS. We can resist with memory, understand through current conditions, work towards a different future. We already have a number of Trinity Research Centres that resonate with this concept, such as the Centre for Environmental Humanities and Cultural Trauma, and could work together to further these ideas. In addition, we have powerful international collaborators that we can work with should we go in this direction. This is the kind of collaborative endeavour that brings a unique opportunity for Trinity. Another example is the work of Nature+ which aims to understand the feedbacks between natural capital and climate systems, to design future-proof solutions to ensure economic growth.</i></p>
<p>Social Change/ Improving Lives/ Making Policy</p>	<p><i>Social science research is a large part of our research focus in Trinity, exemplified by the very active Trinity Research in Social Sciences (TRISS) initiative. There is significant involvement from many schools and there is much to build on here.</i></p> <p><i>We have many more staff throughout the university whose research is about effecting change through policy or drawing on their expertise to influence policy development. In terms of the latter the role of Arts and Humanities colleagues in influencing state policy towards the Decade of Commemorations comes to mind. Both of the categories mentioned above (Lifecourse and SDG), also have significant policy related aspects. We certainly need to capture all of the broader work in Trinity that is responsible for driving policy, locally and internationally.</i></p> <p><i>We also have opportunities to build on Trinity's strong relationship with the Institute of European and International Affairs (IIEA). We already have rich and varied ongoing activities including those coordinated through TRISS, TLRH, and the Business School with potential for wider engagement.</i></p> <p><i>Influencing and making policy through research is a hugely impactful activity. We have the potential to focus on the 'RESEARCH-POLICY interface' and take a leadership role. We see LERU and other leading universities driving this kind of agenda and there is a real opportunity for Trinity to excel.</i></p>

Potential Externally Driven Large-Scale Opportunities

Initiative	Comment
<p>Scaled Doctoral Initiatives There is an increasing trend in the research funding ecosystem to support PhD education at scale. These initiatives typically call for a cohort of PhD students to be hired loosely or tightly based on a topic or area, depending on the funding call. These kinds of initiatives allow us to further build collaborations across the university.</p>	<p><i>The SFI call for Centres for Research Training (CRT) will see an additional 700 PhD students come into the Irish system. The growth of the role of data science/machine learning/artificial intelligence in all areas of research was addressed through this call.</i></p> <p><i>Six Centres for Research Training have been funded. Trinity leads the 'Digitally Empowered Human Engagement in the Real World' CRT and has strong involvement in the others.</i></p> <p><i>Other funding bodies have opportunities which we will also aim to leverage if suited to our research goals.</i></p>
<p>Scaled Postdoctoral Initiatives There are also opportunities to fund large-scale postdoctoral initiatives – as in the PhD case. These types of initiatives can support postdoctoral researchers from all areas but typically require matched funding.</p>	<p><i>Currently we have a number of these in operation through the MCSA Cofund programme. Our existing programmes support researchers across the faculties. We will seek to leverage more of these types of opportunities. There is increasing scope to leverage advances in Arts and Humanities linkages with industry in this context as well.</i></p>
<p>SFI Centres and Spokes A future call for additional SFI Research Centres is currently still on the agenda. If that call is forthcoming, Trinity needs to be prepared for it.</p> <p>We also need to continue to exploit opportunities for spokes (large scale initiatives that are attached to one or more centres).</p>	<p><i>There are a number of areas which could build on existing exceptional research strengths in Trinity and which could fill gaps in the Irish landscape. Potential candidates include Creative Technologies, Nature+, Personalised Medicine/ Cancer + and next generation Neuroscience, Future Biology. An exploration of these options will get underway in 2019.</i></p> <p><i>There is also an option for leading on new spokes. Spokes are mechanisms for growing existing centres. Currently we have a number of spokes led out of Trinity with room for identifying additional ones.</i></p>

1.4 Recruit to match our ambitions

As we grow existing and new research initiatives, we need to recruit the very highest calibre academics to strengthen them. We need to ensure that research excellence is at the heart of all our academic hires. We will need to continue to innovate in hiring practices to achieve this.

We can use our collaborative initiatives as part of the process of attracting the best. When it comes to hiring staff, we have a great university as an incentive. However, we compete in an ever-growing global market, from a country that needs much more investment in research, and from a city that is expensive and has issues around housing that make these challenges all the greater. Initiatives like E3 and the Trinity St James's Cancer Institute are already affording us the opportunity to collectively advertise posts across all the schools involved. In so doing, we can signal to prospective candidates the array of opportunities that come with the post, and that there is room for growth and leadership. This type of approach that signals opportunity for leadership needs to be embedded in our practices.

The Ussher Programme has been successful in recruiting high calibre Assistant Professors. We should now review existing hiring practices at Chair level to ensure we are doing everything to attract the best field of candidates. We must look at starting packages for new Chairs and explore how we offer supports such as temporary accommodation when first moving here, and also consider post-recruitment support for all new academic hires. We must open up new recruitment possibilities. The Ussher Programme was a strategic, centrally-driven programme that led to large-scale hiring of highly-motivated individuals and was linked to major initiatives across the university. It is important for us to look at how we might run a similar centrally-driven programme at Chair level. A centrally-driven programme is not there to usurp the role of the schools in their own hiring plans. Rather, the aim of any centrally run hiring scheme is to recruit in ways that brings additional value and leadership, and can have significant impact on our collaborative initiatives. The challenge here, of course, is 'with what funds?' The answer is that funds will have to be sourced. A connected answer is that opportunities for sourcing funds will tend to be linked to the types of large initiatives laid out here. We should aim to source funding for 25 Chair positions over the next decade that can respond to the call for research leadership, and that will ensure we stay at the forefront of research.

02. MAKE IT EASIER TO DO RESEARCH

We need to use the resources we have in more effective ways, and find innovative solutions to the various challenges we face.

Context

The challenges of the research environment grow yearly. In the face of growing demands on time, greater expectations on individuals, and tightening resources we need to find ways to make it easier to ‘just get on’ with research. To make this happen we need to come together across the university.

Working together to make research happen more effectively and with greater ease involves providing access to all of the training and upskilling researchers and research support staff need over the lifetime of their careers. It means making the research processes as streamlined as possible. It means providing the time, space and infrastructure needed to do research. As a research-led university we are also interested in sowing the seeds of research at an early stage. For us, the research career begins with the undergraduate – every student has potential to be a researcher – so it means making it easier to do research at this level too.

These are no small goals in a world in which the demands on individuals are ever-increasing and in which time and space for research become increasingly scarce. We need to use the resources we have in more effective ways, and find innovative solutions to the various challenges we face.

Link to the Charter Principles

The key principle to which these actions apply is Principle 3, to foster and grow research talent, and Principle 2, putting research at the heart of Trinity. However, many of the actions described are also part of cherishing academic freedom, diversity of research and the pursuit of truth, and developing the skills to communicate with our publics, among others.

Key Actions

The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

2.1 Drive a major college wide initiative that delivers a single point of access to all research related training and upskilling

There have been ongoing demands in Trinity for dedicated support for Early Career Researchers (ECR). This must be addressed with urgency. The ECR, especially at postdoctoral level, is particularly exposed to many challenges given the precarious nature of their employment, and the lack of academic career opportunities. We as a community need to do much more in supporting their wellbeing. We can do this through finding a better way of supporting all staff to develop all of the skills needed over the lifetime of their research careers in Trinity.

The challenge for us is to do this in a way that makes it easy for staff to upskill for research purposes. Various worthy initiatives do already exist across college to support researchers at different stages in their careers. While there are examples of great practice, in general the initiatives are disjointed and the support that exists tends to be patchy and inconsistent. There is no single location from which to get all information relating to career support. There is much reinventing of the wheel as individuals, driven by laudable aims, provide courses for specific cohorts of researchers. There are different and confusing pathways to creating content for career support. There is limited use of various career support tools in which the college has invested. The resource issues that arise in delivering support are exacerbated by this highly fragmented approach.

The key initiative recommended here is that a complete reorganization of all career support takes place so that it is managed by one entity and is accessible in one location.

There are many sub-actions which fall under this action. The most important is to explore where that single point should be. Previous initiatives need to be re-examined with this in mind (e.g. The Teaching, Learning and Research Academy which would see an expansion of CAPSL). There is a need to map out existing research career offerings, map out the needs of researchers, consolidate the different entities which offer support into one, create a mechanism for deciding what new career supports need to be added to the offerings centrally provided, provide mechanisms for better leveraging many of the highly creative research supports that are dispersed around college, provide ways for all to navigate what is on offer, and more. While these actions will be for the benefit of all staff, priority will be given to modules that are specifically relevant for ECRs.

While this action is demanding and calls for much work, it offers us an opportunity to really begin to differentiate ourselves in terms of how we support all our staff in the university. The same imagination and creativity that has been applied to thinking about the qualities of our graduates can be applied to that of our staff.

2.2 Build a deeper culture of support for research career development

The formalizing of career support through one single venue can be complimented with initiatives taken and led by staff. There is a huge opportunity for building a more collegiate environment through these kinds of initiatives, and more importantly building a culture in which self-development is encouraged. There are a range of actions which are relevant here.

The first set of actions revolve around recognising the increasing burden on staff that comes with an increased focus on research ethics, research integrity, GDPR, data management more generally, the role of gender in research etc. and the need to upskill as a result. It is important that upskilling is seen as a means to becoming a better researcher and not just a box-ticking exercise, and that the culture we foster here is one in which the various training requirements are seen as valuable. The actions here very much lie across the university, especially among more senior staff who can lead by example.

The second set of actions revolve around the creation of more informal networks that can be focal points of support. These actions are motivated by the success of the ERC Club which was set up by staff members to support each other in fulfilling the demands of their ERC award, as well as to help others wishing to win an ERC award. There is potential for clubs that focus on issues such as getting started in research, researching with industry, reinventing your research career, as well as a retired researchers' network among others. The latter, for example, gives us the opportunity to keep connected to a community of researchers who have much to offer Trinity post-retirement and who can continue to contribute to building our culture of research.

The third set of actions revolve around valuing the strengths of the individual researcher. Research is a very competitive endeavour and can lead to imposter syndrome. It is important that all staff are encouraged to be ambitious and to strive for new goals. The more systematic nominating of colleagues for different research awards is one way of promoting our colleagues' careers, and of course we need to celebrate all individual and group wins.

2.3 Bolster mechanisms for providing pre- and post- award support

The Research Development Office (RDO) provides critical support for researchers applying for funding. The addition of a number of Research Programme Officers (RPOs) assigned to different areas, but working in tight collaboration with the RDO, added greatly to this capacity. The current RPO programme is nearing an end and a number of positions have already been mainstreamed. We need to look at new areas that could benefit from this approach. We also need to think about post-award support. Exploring how a post-award Research Programme Officer programme might be created, resourced, put in place and ultimately mainstreamed are key actions here.

2.4 Simplify practices around research administration

All of the practices around research (research project management, financial management, data management, recruitment, performance management etc.) have become more complex in the past decade. While we fully respect the requirements for proper oversight and the necessity to take a completely professional approach to our research, many have become very onerous. It is, therefore, timely that we would look at all the practices involved in research with a view to simplifying where possible. This will require us to work as a community and call for strong engagement across different areas of college. It will require us to look at all administration around research much more collectively. The actions here resonate with other parts of this Research Excellence Strategy, in particular the sections on 'joining the dots' on policies relating to research as well as the #ResearchMatters communication campaign.

2.5 Make it easier for large-scale research initiatives to work within our structures

Our university is organised into faculties and schools, and this structure works well. However, it can be the case that large-scale collaborative research efforts that sit across schools do not always sit in perfect harmony with the college structures. We need to completely eliminate any friction that occurs so that our collaborative research initiatives, our schools, and faculties can all thrive. Actions here include identifying issues and creating structures so that all relevant parties can work through any issues that might arise.

2.6 Rethink time, space and infrastructure

In creating this plan one of the prevailing issues that arises is the lack of time for research. Simplifying administration and upskilling staff can help in this regard. However, we need to do more. As a starting point, it is important to take stock of where we are across the university, to look at how work-load models across the schools are designed and put into action, to compare sabbatical policy and how it is executed, and to bring a bigger picture perspective to bear.

Space is also an issue. It is an issue for current staff and plays a significant role in our ability to attract new staff. The recent Estates and Facilities Strategy launched by the Bursar will provide a starting point for how we might better manage space. The Bursar and Dean of Research need to work together to more systematically address research space issues. There are two broad categories under which we need to operate. Firstly, we need to think about research space needs for now and secondly, we need to think about how differently we might do things in the future. The development of the Grand Canal Innovation District, for example, affords us the opportunity to not repeat the same mistakes about research space and to plan for the future in different ways.

We also have challenges when it comes to infrastructure. We face particular problems when it comes to equipment that needs replacing and for which no research grants exist. There are again no easy solutions to this. We can, however, seek to optimise the use of the equipment and infrastructure we have, as well as find new means of sharing or redistributing existing equipment. The longer-term solution, of course, involves #StandingUpForResearch and increasing investment in research.

Ultimately, what is needed from colleagues across all of these domains is leadership of the kind that can build a research culture that provides for the time, space, and wider environment that is conducive to excellent research.

2.7 Increase opportunities for undergraduates to engage in research

It is never too early to start people on the research path. Opportunities for undergraduates to engage in research are already in existence in college, such as the Laidlaw Scholarships. These kinds of initiatives need to be better publicized. Different disciplines include research projects at undergraduate level. The TEP initiative calls for all undergraduates to engage in a research project and actions to deliver on this are necessary. Initiatives such as the Laidlaw Scholars open up opportunities for undergraduates to apply for and secure research funding. Actions that focus on identifying wider opportunities and communicating these to undergraduates are needed. The TEP electives need to be harnessed as exemplary showcases of research-led teaching.

03. GENERATE THE RESEARCH FUNDING AND RESOURCES WE NEED

We need to unlock existing resources within Trinity and refocus them on research activities which are important for driving the research agenda forward.

Context

While it is the case that there are areas of research in which we are engaged where funding does not play a major role, a significant proportion of the research we do is dependent on funding. We need to unlock existing resources within Trinity and refocus them on research activities which are important for driving the research agenda forward. We need funding to continue for existing work and we need funding for new ideas. We must bear in mind that we are judged internationally and rated by our ability to attract competitive research funding and, therefore, a significant effort needs to be spent generating the resources we need to do our work.

The task of generating the research funding and resources we need is made more challenging by the constraints of the research investment environment in which we operate. Consequently, we also need to continue striving to unlock funding resources nationally and internationally. In Ireland, in particular, we need to work with others to achieve change.

The actions here relate to how we organise ourselves internally in relation to funding and how we set our funding goals, as well as how we can work to change the funding landscape from a policy perspective into the more balanced system we desire.

Link to the Charter Principles

The actions here have implications for all seven of the principles and high-level goals in the Charter.

Key Actions

The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

3.1 Work with Trinity Research & Innovation to stress test funding scenarios, set targets for research funding and maximise our ability to deliver

Trinity has a strong track record in securing research funding and has performed exceptionally well in recent years and as can be seen from the table on page 22.

We are, however, currently at a moment in which the state of the research funding system is of great concern. As mentioned in the introduction to this document, the State invests 1.2% of GDP in research, well below the 2.4% average of the OECD. This lack of investment has been ongoing for some time and affects all universities. There are additional issues for Trinity:

- 1 SFI funding has typically accounted for almost 50% of Trinity research income. In 2018, and most likely in 2019, calls such as the SFI IvP will not be held. The typical level of income from such a call for Trinity is in the region of €16 million. The fact that this and other calls will not take place has a significant impact on our income, not to mention the academics whose research depends on this type of income.
- 2 While Trinity has performed exceptionally in Horizon 2020, out-performing all of the other Irish institutions by tens of millions, the challenge for Trinity is capacity. This manifests itself in two ways. Firstly, it is important to note that a large part of that success is due to ERC activity, including incoming ERCs. While ERC award holders come with research funds, it ultimately remains the case that the school needs to support them and there is only a certain amount of capacity in the system. Our success more widely in H2020 is dependent on many researchers who are already at maximum capacity and do not have scope for new projects.

Research Income Per Source over the Past Five Years

*European Commission

Year ending	EC*	Irish State	Industry	Other	Total
2010/11	11,454,262	66,584,928	3,847,386	9,862,771	91,749,347
2011/12	12,737,313	56,327,763	2,184,526	6,225,934	77,475,536
2012/13	17,873,325	66,332,145	2,024,109	7,344,332	93,573,911
2013/14	14,102,052	47,511,862	2,159,531	7,262,445	71,035,890
2014/15	18,053,207	60,610,257	2,276,037	10,150,494	91,089,995
2015/16	15,845,722	67,163,907	4,653,126	9,264,453	96,927,208
2016/17	19,737,679	66,324,063	4,609,476	11,527,358	102,198,576

We also need to keep a focus on generating full costs for the research we carry out. While we will always compete for prestigious funding – an essential activity for a leading research university – we also need to pay attention to how overheads can be maximised.

The actions here are actions that must be carried out closely in collaboration with Trinity Research and Innovation (TR&I) as we collectively develop funding diversification plans. Actions include stress testing research income through mapping the changing patterns of funders, looking at academic retirements and the impact on funding income, exploring new sources of funding (non H2020 EU opportunities, industry, foundations etc.). We need to make sure that our structures within TR&I best reflect our targets and needs, and that staff in TR&I are supported in their endeavours. This may call for a remapping of functions or sourcing of new resources. It is crucial that these actions be carried out in close collaboration with TR&I.

3.2 Expand the base of eligible researchers applying for funding through external hires as well as from within

Of great importance is the need to expand the base of applicants for research funding. The caveat here, of course, is the areas and domains in which no funding exists or funding is not needed for the work. This section should be read as calling for a focus on researchers that would benefit from this approach and not as a set of actions that force a solution on those not looking for it. There are, broadly speaking, two approaches to expanding the base of researchers involved in attracting funding.

The first approach is about growing the academic staff through the continued recruitment of world-class researchers. We have made great progress to date, especially in the context of ERC holders moving to Trinity. Expertise for supporting this kind of activity has been built into the system and the number of incoming academics has increased significantly. Between incoming candidates and home-grown success, currently we have almost 50% of all ERC awardees in Ireland. Based on our learnings to date, much more refining and streamlining of the process is needed. There are issues on the ground in terms of capacity, as previously mentioned, and these must be addressed. The approach we take to ERC awards also needs to be expanded to include other prestigious awards. We have had less success in bringing in SFI Professorships for example, and we need to re-examine the issues here and weigh up efforts versus success.

The second approach is about making sure that every member of staff in Trinity who has the kind of research that lends itself to attracting funding is engaged in this kind of activity. Actions here include proactively encouraging staff to apply for funding and working with them to this end. These activities are already ongoing but there is room for further expansion. We also need to work much more proactively on the H2020 front. There is also scope for postdoctoral researchers to engage more widely. Mechanisms for ensuring proper and official recognition of the role of the postdoctoral researchers in securing grants are also needed. More generally, however, where it is relevant for their research we need to get all staff actively pursuing research grants.

3.3 Identify mechanisms for growing internal research funding

We also need to find ways to provide more funds internally in Trinity for research. While it is unlikely that any internal funds will address all of the many needs we have, these funds can be used wisely to make progress. The following actions are possible:

- 1 We can create a strategic Dean of Research fund for seeding and supporting research. Over the last decade, different holders of the DoR office have argued for such a strategic fund. Previous DoRs have made much progress in providing evidence for the requirement of this fund and have garnered support. The main actions here revolve around specifying the details of such a fund and identifying a source. The main recommendation is that the fund come from the overheads that are directed to the central divisions of the university rather than from those returning to the academic units. This makes sense in that the Office of the Dean of Research is a central service in Trinity. It signals that research is at the heart of Trinity, in line with Principle 2 of the Charter, and it also does not de-incentivise research activity through reducing overheads set aside to support research at academic unit level. To roll out the fund, mechanisms will need to be put in place that optimise its use. No fund will be large enough to address all of what is needed in Trinity. The core principles of how the fund should be spent will need to be developed with a focus on how the fund can be used to seed new initiatives, and leverage or bridge between opportunities. Oversight of expenditure will be carried out by the Finance Committee.
- 2 We can look to grow central schemes such as the Provost's PhD awards.
- 3 We can explore options for applying for funding at a central level – there is potential on the MCSA co-fund front for example.
- 4 We can work more closely with the Trinity Campaign to look at philanthropic options.

3.4 Work to increase available resources in the research system in Ireland

This is all about standing up for research and maintaining pressure to increase the funding in the research system in Ireland. Not only must we keep up the pressure to increase the pot of funding, but we must also ensure that investigator-led research becomes a significant part of the landscape, and make certain that research funding is available across disciplines. In other words, we must strive for a balanced research eco-system.

The actions here are varied. In the first instance we must continue to develop our own voice on these issues. Secondly, and most importantly, we must work with colleagues in the third-level sector and with collaborators from other sectors who realise the importance of open-ended and non-directed research to the long-term sustainability of Ireland. Thirdly, we must build networks with industry, academia, agencies, civil society, alumni, visiting researchers and other groups who matter to us and can inform as well as help with our research objectives. The actions here relate to building and maintaining these networks. The actions also include developing better understanding of how we can, through these networks, better influence research policy and better set research agendas.

We also have work to do internally in explaining why research matters. If we want freedom to work on research topics that we see as important we have an obligation to explain to the tax-payer why funds should be spent on our work. One way we do this is through becoming much more adept at showcasing our research impact. We are at a very good time to do this as the understanding of what impact means has become increasingly sophisticated. There is a greater understanding of the types of impact that can be made across all disciplines, and the different and varied time scales involved. There is also an increased focus on how we get research out beyond the journal article to the wider world. We need to work on systematically harvesting all of our impact, and we need to better build this type of activity into career progression to ensure it becomes embedded in the system.

04. RADICALLY REVISE HOW WE DO RESEARCH COMMUNICATIONS

How effectively we communicate the research we do to the outside world has a profound effect on our standing, our influence, our rankings, and our ability to attract funding.

Context

Communication of research ideals, research goals and research achievements are key aspects of every principle in our Charter. How effectively we communicate the research we do to the outside world has a profound effect on our standing, our influence, our rankings, and our ability to attract funding. How we communicate research successes matters to the individuals we seek to recognize. How we communicate our research and research goals to each other has a significant effect on our ability to collaborate and engage and build communities.

Link to the Charter Principles

The main principle of focus here is Principle 6, to engage profoundly with our publics. However, all of the other principles call for better communications, whether that be in reflecting the diversity of our research, positioning research at the heart of Trinity, and more. Our goal here is ambitious – to be a world leader in how we communicate our research to our multiple audiences.

Key Actions

The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

4.1 Overhaul our digital research presence

One of the basic actions is to address our central online research presence through updating the website and social media platforms. In the longer-term a content-based management system is essential for Trinity to more effectively manage our online profile with ease, speed, and in a manner that provides the kind of metrics needed to properly analyse engagement. The absence of such a system has to be considered a very high risk. However, in the medium-term work will need to be carried out within the limits of the existing structures. As a result, a number of the actions here focus on improving our website and evolving our social media presence for research. We will draw on the expertise in Public Relations and Communications (PAC) for this.

Updating our digital presence will make no difference unless there is a consistent flow of material that can be used. We aim to develop more sophisticated ways of telling our research stories, to provide material about any one research topic in different styles and formats for different types of audiences, to better draw on the diversity of research that happens in Trinity, and to feature work from every researcher in the university.

To aid in this process we will put in place a Research Story Curation Team. This team will draw on expertise in Public Relations and Communications (PAC) and others interested in communications in Trinity. The team will plan research communications for the year ahead. Each quarter will be dedicated to a broad theme that can be widely interpreted and that will be used to guide the creation of content for that quarter. The Research Story Curation Team will also set out the parameters for selecting material to ensure a spread of research stories, a diversity of research modes, and a variety of established, upcoming and student researchers are included. Actions will need to be taken to secure any necessary funds for content creation.

The themes for each quarter will be chosen in consultation with different groups in Trinity. However, this approach will be piloted with Trinity Brain Power as the first theme.

4.2 Harness the power of the wider community to communicate research

The online research presence of course is not just the one that is centrally managed. Throughout the university we have a host of excellent communicators who are in the best position to disseminate their own research.

There are a number of key actions here. Firstly, we need to harness much more effectively the skills of our community. Secondly, we need to provide information and training for those wishing to enhance their own skills. This has benefits for the university as a whole as well as the individual researcher. There are now far more opportunities for dissemination in new fora that are suited to academic discourse that we can exploit.⁴ The focus on altmetrics⁵ is driving some of these methods of dissemination. We can also consider rewarding individuals who contribute significantly to research communication, and draw in the undergraduate body to write about research through writing competitions and more.

A very important area in research these days is the area of co-creation of research with the wider public. While this does not impact all areas of research, it is of growing interest across the university. In Trinity, we have a number of projects focused on Public and Patient Involvement (PPI) which are leading the way internationally in research. We should learn from these. We also have Campus Engage initiatives that are building expertise in reflexivity and more so that we can become more skilled in two-way communications around research.

During the creation of this strategy there have been many suggestions by individuals for events and mechanisms through which we can communicate our research. We must do a much better job of collecting these and acting on those suggestions that make most strategic sense.

4.3 Ensure that face-to-face communications remains part of how we work

While a significant part of this section of the research strategic plan has been dedicated to digital communications, it is important to stress that face-to-face communications are essential. We need to ensure that there are more opportunities for colleagues to come together around research. We must hold more research events that allow our researchers to get together. We must celebrate all wins. We must regularly talk about research concerns. We must improve how we talk to each other across academic and administrative divides, so we can ensure that everyone is behind our research goals. Face-to-face communication is not just important for internal purposes but also in an external context. It is essential we spend time with our different audiences and stakeholders, and continue to hold regular events that allow participation and engagement.

4.4 Design and deliver strategic communications campaigns as required

In addition to improving how we communicate research more generally, it is also the case that we need to initiate more specific research campaigns. These campaigns will be aimed at different audiences, some for the general public and others more targeted. There are a number that already have been identified and undoubtedly more will materialise as needs require and resources permit, and we will work with PAC closely on these.

4.5 Initiate a series of flagship communications projects

The overall aim of the actions in this section of the plan is to become a world leader in research communications. Improving how we communicate and better harnessing the talents of our students and staff will no doubt do that. However, we need to go further and work on very big and bold initiatives. Any initiative will, of course, need resourcing and part of the challenge will be to secure resources to deliver these goals. The actions here involve exploring options, weighing up opportunities, finding resources as well as planning and delivering.

The current candidate for focus is a specific Trinity Citizen Scholarship platform. This would allow Trinity to develop a very specific engagement brand around research. Two-way engagement with the public is of increasing importance in research. This remains for the moment as a suggestion and others are welcome. A business plan for any suggestions would need to be developed for any to progress.

4.6 Secure an additional resource for the Office of the Dean of Research

The overall aim of the actions in this section of the plan is to become a world leader in how we communicate our research. It is an ambitious aim, but one we can deliver. We already have great foundations in place with many excellent researchers who are world class communicators.

To succeed in our goal, a first step in the right direction is to have a resource whose focus is research communication. This will involve coordination of the Research Story Curation Team, and the wider harnessing of communication capabilities in the university. The individual will pay special attention to modes of engagement suited for dissemination of research, and how staff and students can play a role in attaining our goals. The individual will work closely with PAC.

⁴ www.timeshighereducation.com/a-z-social-media

⁵ Altmetrics are non-traditional bibliometrics proposed as an alternative or complement to more traditional citation impact metrics

Suggested Initial Campaigns

Campaign	Description
The Standing Up for Research Campaign #StandingUpForResearch #LoveTrinityResearch #LoveIrishResearch	This campaign is about working together to ensure research remains a priority area of investment for Ireland, and that investment is made in ways that lead to a thriving research ecosystem. It is all about rebalancing the research landscape, across basic and applied research, across individual endeavour and group collaboration, across all stages of research career, across different disciplines, as well as across maintenance of existing infrastructure and investment in the new. This communications campaign is a very targeted one – targeted at stakeholders and decision-makers in the research space.
The Research Impact Campaign #TCDResearchImpact	This campaign will address the fact that many researchers across Trinity are making huge impact, but we do not always capture that impact. This campaign will focus on capturing impact for the purposes of making researchers themselves more aware of the impact they create as well as for wider dissemination. We will draw on the definitions of impact developed by the Campus Engage initiative, as well as on concepts which allow for thinking through impact from a long-term perspective more suited to basic and fundamental research (e.g. take pathways to impact approach).
The Research at the Heart of Trinity Campaign #ResearchMatters	This campaign seeks to make sure that both academic (teaching & research) and administrative sectors in Trinity understand and are part of the drive for research excellence. This campaign will be very focused on face-to-face communications to better communicate how different choices we make as a university impact our ability to excel in research. The emphasis will be on building relationships, exchanging concerns, and getting everyone behind the same goals. It is envisaged that this type of communication needs to be a constant part of how we do business.

Aspirational Flagship Project

Suggested Flagship	Description
The Trinity Citizen Scholarship Platform	<p>The concept here is to inspire the public through a Trinity Citizen Scholarship platform that allows the public to engage in Trinity research projects. Citizen Scholarship is about research conducted in whole or in part by amateurs or non-professionals. Citizen scholarship platforms already exist (see Zooniverse as one example) but the purpose of creating our own platform is to focus on research relevant to Trinity, and to make Trinity-specific material available on that platform. There are a number of reasons why this could be a flagship project:</p> <ol style="list-style-type: none"> 1 At the heart of this is research. There are whole areas of research that are very suited to a citizen engagement approach and which, in fact, cannot be carried out without significant resources spent on database analytics. Citizen Scholarship is about crowdsourcing this kind of help and, in so doing, educating and involving large groups of people. 2 We have unique content that can be made available through such a platform. One obvious source is the Trinity Library; we could base projects on internationally unique material. 3 There is a huge branding opportunity. Trinity can lead the way in Ireland and beyond with this approach.

05. JOIN THE DOTS ON ALL POLICIES RELATING TO OUR RESEARCH

The major question we need to ask of every policy we create is how does this policy enable or block research?

Context

In recent years, research has become much more professional and more regulated. Hence there are myriad policies in place that are directly related to the research we do. There are also policies related to the general running of the university which greatly impact research.

The major question we need to ask of every policies we create is how does this policy enable or block research? A follow-on question which is equally important is how can we evaluate if the different policies we have work together for research or if instead they produce counterproductive effects? Additionally, the operationalization of policy is key. It is all too often the case that policies are made but never put in practice.

Link to the Charter Principles

The actions in this section have implications for many principles. They are related to the type of professional supports needed for Principle 1 of cherishing academic freedom, diversity of research and the pursuit of truth. They also very much relate to positioning research at the heart of Trinity, and they have implications for Principle 3, to foster and grow research talent.

Key Actions

The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

5.1 Develop a system for oversight of all research policy

One of the most interesting and exciting aspects of research is that it affects, and is affected by, all areas of the university. This is also what makes it a hugely complex domain. There are, therefore, a huge number of policies that relate to research. Broadly speaking they fall under two categories.

The first are policies that directly relate to research and for which there are many external drivers. These policies are driven by new laws such as GDPR or movements such as Open Scholarship. Not only do they affect how we carry out research in the university, they also increasingly impact on our eligibility to apply for funding.

The second set of policies are those related to the more general running of the university such as hiring, promotions, school budget models and overheads etc. Again, these all have implications for how we do our research. They can enable or block research happening.

As the external drivers for new policies grow in tandem with the requirement for streamlining existing policies, we need to find a much better way of looking across the policy landscape. Firstly, we need to develop some kind of policy mapping tool that allows us to look at all the research-related policies in Trinity and their interdependencies. The oversight does not stop at making the policy, however. We need to have better assurances around how the policies are operationalized and get feedback on their effectiveness. We need to better interface with the College risk register around policy challenges. We also need to work towards making research related policies more accessible and navigable, through the right kind of documentation.

5.2 Initiate new or update existing research policies to align with external drivers

The oversight system will help us more systematically identify new policies that need to be created and those which need to be updated. There are a huge amount of external policy drivers on the horizon. The actions here involve monitoring changes coming down the line, creating policy as needed, and also taking the opportunity to be leaders in how policy might be created where necessary. Currently, we have work to do on policies relating to research ethics, research integrity, GDPR, Athena Swan, open recruitment, and open scholarship among others. It is envisaged that there will be different external policy drivers that need attention over time. As these arise, we will have to initiate new projects and actions.

5.3 Overhaul existing policies to better align with a research-intensive university

The whole purpose of this section of the Research Excellence Strategy is to ensure that we do not create policies that are counter-productive to the carrying out of research. To this end we need to revisit the different policies in operation within the university. Many policy issues were identified in the consultation phase of this Research Excellence Strategy, indicating that this is a big task and not easily resolved. The actions in section 5.1 which seek to better show dependencies between policies can potentially help in this process. More specifically, the operationalisation of policy deserves greater attention. Those which come to the fore time and time again include hiring for research, school funding models and incentivisation of research, and local policies related to teaching-buyout among others. It is not yet clear how best to approach this task in a strategic fashion. As a result, early actions here revolve around scoping exercises as well as more widespread research on how this might best be approached.

06. BE BOLD IN PLANNING OUR LONG-TERM RESEARCH FUTURE

Trinity is 427 years old. It has stood the test of time. However, we need to be able to step back and ask whether we can and should do things differently.

Context

The actions in this strategy are systematic actions that build on what we have grown in Trinity in the past decades and use mechanisms that we understand. We also need to think outside the box, however, and look at new ideas and concepts and how they might affect us, and to think about the future of research.

We also need to allow for new ways of thinking and doing things. Trinity is 427 years old. It has stood the test of time. However, we need to be able to step back and ask whether we can and should do things differently.

As stated at the beginning, this is a living Research Excellence Strategy. This final section acts as a way of constantly questioning all that is involved in strategy. It encourages us to think beyond where we are now and to plan for the long-term future. The spirit of this chapter is to set up some questions we might consider as well as structures through which they could be addressed.

Link to the Charter Principles

All of the principles in the Research Charter are connected with this section, hence the actions here are relevant for all principles.

Key Actions

The main actions are described here with more fine detail in implementation plans that will drive the execution of the strategy.

6.1 Create a Trinity Research Foresight Initiative

We need a better way to think about the longer-term research future. To this end, we propose the establishment of the Trinity Research Foresight Initiative which will operate as an internal think-tank, 'researching research' so to speak. We do not often use our own research capabilities and research methodologies for the purposes of researching our research plans and the Foresight Initiative will do just that. Foresight teams exist in agencies and industry. This will be the first foresight team of its kind in a university. This initiative is not intended in any way to displace the efforts of the individual researcher in forging their path. Rather it is intended to better leverage that talent and to push the university in bold new directions across all areas of research. There is a wealth of expertise in Trinity that can be harnessed to this effect. The Trinity Research Foresight Initiative should also allow us

to be a leading international voice in developing thinking about the future of research. In addition, the Research Foresight Initiative can be used as a means of reaching out to thought-leaders around the world, inviting them to engage with us in looking to the future, and further establishing Trinity at the forefront of research thinking.

The Foresight Initiative can look at topics of its own choosing and act as a means of bringing together input from the different actions that follow.

6.2 Understand what Trinity wants from an Open Scholarship future

Open Scholarship is an enormous area. It ranges from everything to do with open access to published research to a fundamental change of the academic system. Funders all over the world are reacting to the Open Scholarship agenda and we have greater obligations as a result. There are also enormous cost issues for how we do research business. We as a community need to consider what we want from the Open Scholarship world and how we want research to operate in an era of Open Scholarship.

We firstly need to understand our obligations under Open Scholarship: what are the areas over which we have no choice, and which need to be embedded in Trinity research activities. We need to identify areas in which we should be a follower: for example, Ireland is a small market and we may need to follow the lead of other countries around journal access. But most importantly we need to identify areas in which Trinity should be a world leader. We also, of course, need to understand the cost implications. Open Scholarship is by its nature a collective endeavour and we need to work closely with LERU, Coimbra, colleagues in Ireland and other networks.

Actions here include the setting up of an ad hoc committee to begin the work of looking at where Trinity stands; mapping all that is happening globally and nationally; the creation of the Unboxing Open Scholarship series as part of the process of more widely socialising ideas in the Open Scholarship domain. All of this work is happening in tight collaboration with the Library.

6.3 Understand how new forms of engaged research and research co-creation can drive discovery

Engaged research describes a wide range of rigorous research approaches and methodologies that share a common interest in collaborative engagement with the community. The research typically aims to improve, understand, or investigate an issue of public interest or concern. The research questions are co-created with the community and the research is advanced with that community. The term community is used liberally and tends to include public or professional service and product users, policy makers, civil and civic society organisations and actors. Trinity is already engaged in a pilot that focuses specifically on Public Patient Involvement (PPI) and is leading the way in thinking on what is seen as a paradigm shift in how research is conducted. Though the term engaged-research is already much in use by funders and other bodies, it has not really penetrated how we go about our work beyond pilot studies. The actions here are about understanding based on learning from the pilot and international best practice how this paradigm shift in approaches could and should impact our research, and how we would like this to work in Trinity.

6.4 Explore how new ideas around impact can be embedded in the university

Impact is a contested term in research. It can often make researchers uncomfortable or feel that only research with economic impact matters. In recent years, however, much wider definitions and more nuanced understanding of impact is emerging. There is an increased comprehension of the types of impact that can be made across all disciplines, and the different and varied times scales involved. There is a deeper understanding that in some cases impact can take decades to emerge, as well as the fact that research without any specific intention to make impact often does. This more nuanced and enlightened way of thinking offers much opportunity for our university. Currently we do not account for nor systematically deal with impact from this wider perspective. The actions here relate to further developing this nuanced take, learning from other countries, engaging with our key networks (e.g. LERU and Coimbra) on these topics and understanding how we leverage these approaches.

6.5 Understand how the future of work may change how we do research

The future of work is a very current topic, with conflicting information from various experts on the impact automation and technology such as artificial intelligence (AI) and robotics might have on jobs, skills, and wages. The question for us is to understand how that might affect how research is carried out and supported in a university. It may be the case that certain research functions are made easier or certain research activities may disappear.

The future of work may also have implications for laboratories. Today we struggle to invest in and maintain laboratories. Many researchers are under strain in making equipment last. Investment in new equipment is rarely for replacements. While we have made some suggestions for helping equipment go further in sections of this strategy, we might need to deal with the question of how we manage in a world of diminishing public funding – a world in which a centralised laboratory no longer exists. Or we may need to look at how we work from a climate change perspective.

The comments here are just examples, and none of the issues mentioned may prove to be a problem. However, it is important for us to begin to discuss this with the view to understanding the kind of future research world we would like to cultivate as well as to make plans.

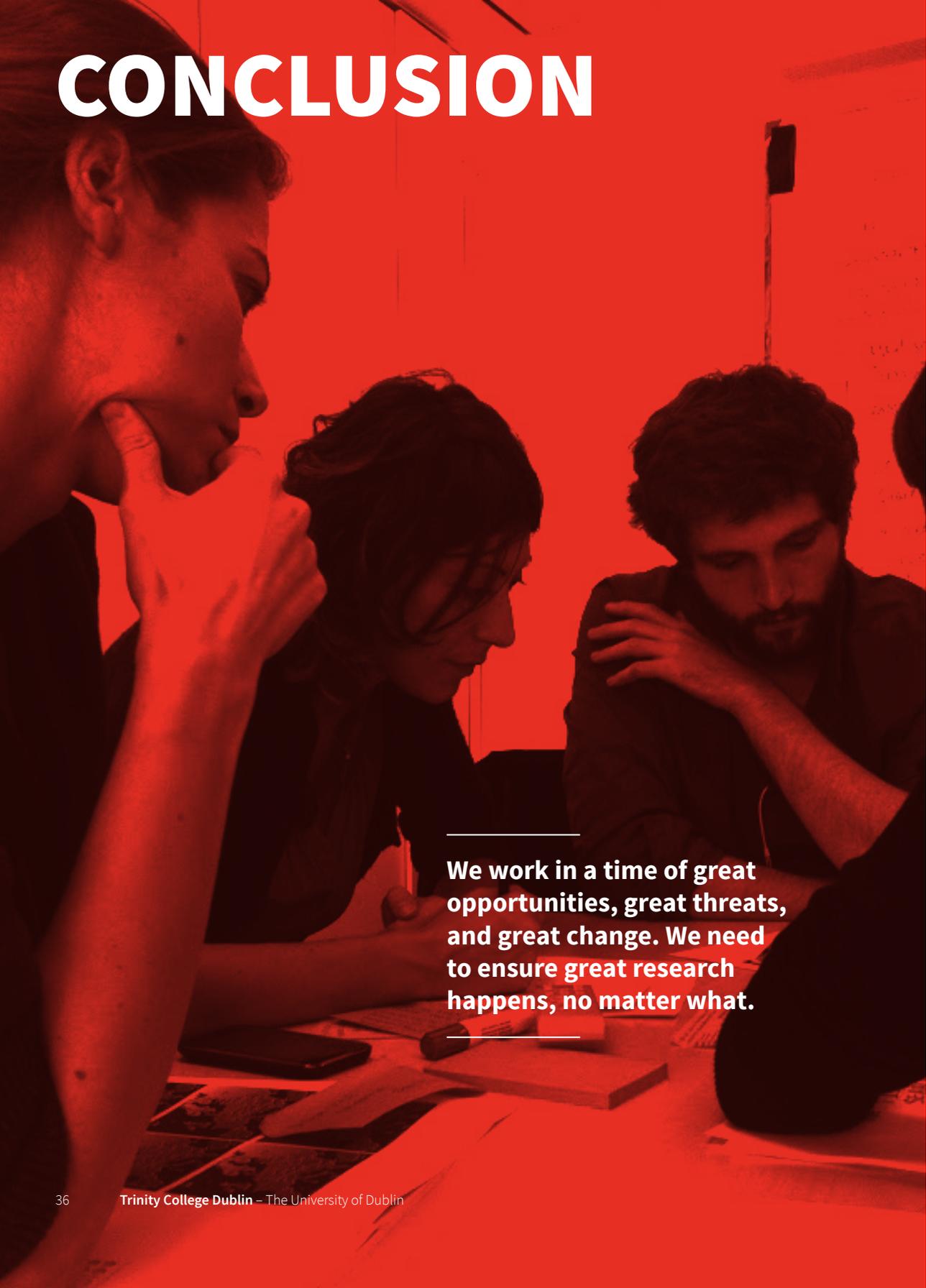
6.6 Analyse and plan in better ways

To be able to analyse and plan we need access to data. Today data is often needed for making returns to various bodies (e.g. rankings agencies, HEA etc.). Data is also needed more generally to talk about and make the case for our research to different audiences. However, it is the case that more and more data is needed to explain trends, give insights on performance, and make decisions. Some of that data involves numbers, while more of it increasingly relates to richer forms of data. Some data is required at institutional level and other data is for the individual researcher to aid with their decisions. The next diagram shows all of the kinds of qualitative and quantitative data that is potentially needed.

To look at the present, let alone the future, we need to find better ways of automatically capturing the data we need. It remains difficult, for example, to determine the basic breakdown of how PhD candidates are funded, let alone get more sophisticated data. While it may not be possible to make it as easy as we would like to gather all the data we need, we cannot move away from the need to make informed decisions, and the role data plays in strategic planning. Actions here involve classifying data in terms of whether it is currently available or not, how easy it is to collect, exploring options for automatic collection through our systems, using new types of technology to collect data etc. Actions here also include looking at various dashboards that exist now, such as the HR dashboard, and exploring what other types of dashboards can be created. To be bold in our thinking about the future and to push boundaries we need to understand the data of the past.

	Qualitative	Quantitative
Internal	<ul style="list-style-type: none"> Policies Hr Processes Decision Making Pathways Research Integrity Training Opportunities College Committees Space Strategy 	<ul style="list-style-type: none"> KPIs from relevant Strategies College Data Tools Research Data Rankings Data Innovation Data Engagement Data Networks Data and Mapping
External	<ul style="list-style-type: none"> LERU Position Papers National Policies EU Policies External Audiences Impact Stories National Funding Strategies EU and International Strategies 	<ul style="list-style-type: none"> Comparator Data National Targets EU Targets Rankings Data for Comparators Open Scholarship Goals Impact Metrics LERU Analytics

CONCLUSION



We work in a time of great opportunities, great threats, and great change. We need to ensure great research happens, no matter what.

Conclusion

This living Research Excellence Strategy is a result of significant consultation in Trinity. However, while some detail is given here, the text in no way reflects fully the range of ideas and suggestions that have come forward. It could never do so. Instead it captures the different kinds of high-level actions that are essential for our ambition to excel in the research we do. It does this as a starting point and the many suggestions and ideas that have been proposed will systematically feed in to how the strategy is implemented and put into action.

In some cases, we have well-defined goals and solutions. In others, we need to explore different avenues and try out different ideas. In all cases we need to work together.

We work in a time of great opportunities, great threats, and great change. We need to ensure great research happens, no matter what.

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