



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

TRINITY CENTRE FOR BIOMEDICAL ENGINEERING

ANNUAL REPORT

2023 - 2024

*Promoting Excellence in Biomedical Engineering Research,
Education & Next Generation Medical Devices.*

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CONOR BUCKLEY

Director of Trinity Centre for Biomedical Engineering



Welcome to the 2023/24 Annual Report of the Trinity Centre for Biomedical Engineering (TCBE)

This report provides an overview of the key educational and research activities undertaken by the Principal Investigators (PIs), postdoctoral researchers, students, and staff associated with the Trinity Centre for Biomedical Engineering (TCBE) over the past year. It highlights our collective achievements, growth, and continued commitment to advancing the field of biomedical engineering.

In 2023/24, TCBE has continued to grow, welcoming new PIs and researchers to the Centre. Our collaborative environment has allowed us to share knowledge and drive forward excellence in biomedical engineering.

The Centre has expanded significantly in terms of research output and funding, including securing several new European Research Council (ERC) grants. These grants are a key indicator of success and reflect the strength of our research, reinforcing the role of biomedical engineering as a key area of institutional and national research.


Another measure of our success is the recognition our researchers receive through awards. Several of our team members have been honoured with prestigious prizes at both national and international levels, highlighting their hard work and contributions to the field.

This year, we also celebrated the graduation of a new group of MSc and MAI students from our biomedical engineering degree programmes, alongside the successful completion of PhD studies by three students. These achievements are the result of the dedication and hard work of our PIs and the entire TCBE team.

I would like to thank all of our PIs, researchers, and staff for their commitment to the Centre and its ongoing success. I hope you find this report informative and that it gives you a clear view of the impact of the work done at TCBE.

Thank you for your support and interest in our work.

Conor Buckley



Centre Name: Trinity Centre for Biomedical Engineering
Director: Prof. Conor Buckley
Deputy Director: Prof. Brooke Tornifoglio

ESTABLISHMENT AND EARLY BEGINNINGS

The Trinity Centre for Biomedical Engineering (TCBE) at Trinity College Dublin was established in 2002 as a strategic initiative to advance multidisciplinary research in the rapidly growing field of biomedical engineering. The Centre was founded in response to the increasing recognition of biomedical engineering as a critical area of innovation, especially within Ireland's burgeoning medical device industry. At its inception, TCBE aimed to consolidate the expertise of researchers across various disciplines, including engineering, materials science, biology, and medicine, to address complex health challenges and improve patient outcomes through the development of advanced medical technologies. At present we have 34 active Principal Investigators (PIs) and 18 Clinical Investigators (CIs) from Trinity College Dublin, The Royal College of Surgeons in Ireland, University College Dublin, University of Galway and Dublin City University.

Past/present Directors of TCBE:

2002 – 2008: Prof. Patrick Prendergast

2008 – 2012: Prof. Richard Reilly

2012 – 2020: Prof. Daniel Kelly

2020 – 2024: Prof. Triona Lally

2024 – Present: Prof. Conor Buckley



EVOLUTION AND ADAPTATION TO CHANGING DEMANDS

The Centre has expanded its scope to include translational research, bridging the gap between laboratory discoveries and clinical applications. This shift was driven by the growing need for innovative solutions to global health challenges such as aging populations, chronic diseases, and the demand for personalised medicine. Since its inception, the TCBE has continuously evolved to address emerging societal challenges and research needs. Initially, the Centre focused on fundamental research in biomedical engineering, such as biomechanics, tissue engineering, and biomaterials. However, as societal concerns shifted towards more complex health issues and personalised medicine, TCBE expanded its research scope to include neural engineering, regenerative medicine, medical devices, and advanced medical imaging. At present the four major research areas include 1) Medical Devices & Drug Delivery 2) Neural Engineering 3) Biomechanics & Mechanobiology and 4) Tissue Engineering & Regenerative Medicine.

Importantly, over the last decade, TCBE has expanded its scope to include translational research, bridging the gap between laboratory discoveries and clinical applications, working closely with industry partners to ensure that research findings are rapidly translated into clinical applications. A number of spinout companies have been formed including:

1. Altach Biomedical: campus spin-out company pioneering off-the-shelf cartilage scaffolds to regenerate damaged knee joints.

Website: <https://altach.health/>

Co-founded by Prof Daniel Kelly, Prof Conor Buckley, and Dr. Dave Browe.

2. KineMo: provides a quick but accurate means to quantify exercise movement proficiency for coaches and physios to make judgements in relation to injury recovery (eg return to play following lower limb soft tissue injury), athlete/team development and skills progression.

Website: <https://www.kine-mo.com/>

Co-founded by Prof Ciaran Simms and colleagues

3. CroiValve: CroiValve is developing a Best-In-Class minimally invasive solution for severe Tricuspid Regurgitation (TR).

Website: <https://www.croi valve.com/>

Co-founded by Prof Bruce Murphy and colleagues

4. Proverum: focuses on the development of novel minimally invasive devices to treat benign prostatic hyperplasia

Website: <https://www.proverummedical.com/>

Co-founded by Prof Bruce Murphy and colleagues



EVOLUTION AND ADAPTATION TO CHANGING DEMANDS

5. Selio Medical: specialises in the development of a unique technology designed to prevent pneumothorax (collapsed lung) during lung biopsies.

Website: <https://seliomedical.com/>

Co-founded by Prof Bruce Murphy and colleagues

6. Luma Vision: developing VERAFFEYE, a highly innovative end to end platform technology, driving the future of cardiac imaging to deliver data at the point of therapy.

Website: <https://lumavision.com/>

Co-founded by Fionn Lahart and Christoph Hennersperger

7. PLIO surgical: Plio Surgical is a spin-out of Trinity College Dublin, developing an innovative and evidence-based solution to address the unmet clinical need of conducting an intestinal anastomosis (joining of two lumens together following a resection).

Website: <https://pliosurgical.com/>.

Co-founded by Prof Bruce Murphy and colleagues.

The Centre has also adapted to the increasing emphasis on interdisciplinary collaboration, both within Trinity College Dublin and with clinicians in the Dublin teaching hospitals, and external partners including industry and healthcare providers. This has led to the establishment of numerous collaborative projects, joint ventures, and partnerships with leading medical device companies and research institutions worldwide. These collaborations have not only enhanced the Centre's research capabilities but have also ensured that its work remains relevant and impactful in the context of a rapidly changing biomedical landscape.



STRATEGIC IMPORTANCE AND ECONOMIC IMPACT

The establishment of TCBE was also a strategic response to Ireland's emergence as a global hub for the medical device industry. Ireland is home to a significant number of multinational medical device companies, and the industry plays a crucial role in the national economy. By creating a Centre of excellence in biomedical engineering, Trinity College Dublin sought to support this critical sector by providing a pipeline of skilled graduates, fostering innovation, and driving research that could lead to new products and technologies.

The critical mass of expertise gathered at TCBE has been instrumental in maintaining Ireland's competitive edge in the global medical device market. The Centre has attracted significant research funding, both from national sources such as Science Foundation Ireland and the Irish Research Council and international funding agencies such as the European Union. Of note, TCBE PIs have secured 19 European Research Council Awards. This funding has enabled TCBE to conduct cutting-edge research and contribute to the development of new medical devices, diagnostics, and therapeutic technologies that have commercial potential, thereby strengthening Ireland's position in the global biomedical engineering landscape.

The Centre has also adapted to the increasing emphasis on interdisciplinary collaboration, both within Trinity College Dublin and with clinicians in the Dublin teaching hospitals, and external partners including industry and healthcare providers. This has led to the establishment of numerous collaborative projects, joint ventures, and partnerships with leading medical device companies and research institutions worldwide. These collaborations have not only enhanced the Centre's research capabilities but have also ensured that its work remains relevant and impactful in the context of a rapidly changing biomedical landscape.



GOAL AND MISSION

Trinity Centre for Biomedical Engineering is a key research Centre in Trinity College combining fundamental research with translation to clinical practice. The Trinity Centre for Biomedical Engineering provides a structure to bring biomedical engineers, basic scientists, and clinicians together to focus on important clinical needs.

KEY RESEARCH GROUPINGS/THEMES

The Centre has four main research themes. These themes based on the intersection of biomedical science and engineering, form the research foundation for enabling technologies for advances in key areas of active and passive implantable devices, surgical and medical device design, as well as informing clinical studies and interventions in ageing, neurodegeneration and rehabilitation.

1. Biomechanics and Mechanobiology
2. Tissue Engineering and Regenerative Medicine
3. Neural Engineering
4. Medical Devices & Advanced Drug Delivery



PRINCIPAL INVESTIGATOR AND CLINICAL INVESTIGATOR LIST

TCBE has a total of 34 Principal Investigators (PIs) and 18 Clinical Investigators (CIs)

Table 1 Principal Investigator list

| Name | Position/Institution |
|------------------|--|
| Ahearne, Mark | Principal Investigator, Trinity College Dublin |
| Browne, Shane | Principal Investigator, Royal College of Surgeons in Ireland |
| Buckley, Conor | Principal Investigator, Trinity College Dublin |
| Conway, Claire | Principal Investigator, Royal College of Surgeons in Ireland |
| Cryan, Sally-Ann | Principal Investigator, Royal College of Surgeons in Ireland |
| Curtin, Caroline | Principal Investigator, Royal College of Surgeons in Ireland |
| Duffy, Garry | Principal Investigator, University of Galway |
| Dunne, Nicholas | Principal Investigator, Dublin City University |
| Freeman, Fiona | Principal Investigator, University College Dublin |
| Hameed, Aamir | Principal Investigator, Royal College of Surgeons in Ireland |
| Hoey, David | Principal Investigator, Trinity College Dublin |
| Kelly, Daniel | Principal Investigator, Trinity College Dublin |



PRINCIPAL INVESTIGATOR AND CLINICAL INVESTIGATOR LIST

Table 1 Principal Investigator list

| Name | Position/Institution |
|-------------------------|--|
| Kennedy, Oran | Principal Investigator, Royal College of Surgeons in Ireland |
| Lally, Triona | Principal Investigator, Trinity College Dublin |
| Lopez Valdes, Alejandro | Principal Investigator, Trinity College Dublin |
| Monaghan, Michael | Principal Investigator, Trinity College Dublin |
| Moran, Cathal | Principal Investigator, Trinity College Dublin |
| Murphy, Bruce | Principal Investigator, Trinity College Dublin |
| Murphy, Ciara | Principal Investigator, Royal College of Surgeons in Ireland |
| Murphy, Paula | Principal Investigator, Trinity College Dublin |
| Nowlan, Niamh | Principal Investigator, University College Dublin |
| O'Brien, Fergal | Principal Investigator, Royal College of Surgeons in Ireland |
| O'Cearbhaill, Eoin | Principal Investigator, University College Dublin |
| O'Kelly, Kevin | Principal Investigator, Trinity College Dublin |



PRINCIPAL INVESTIGATOR AND CLINICAL INVESTIGATOR LIST

Table 1 Principal Investigator list

| Name | Position/Institution |
|-----------------------|---|
| O'Loughlin, Declan | Principal Investigator, Trinity College Dublin |
| Prendergast, Patrick | Honorary Principal Investigator, Trinity College Dublin |
| Reilly, Richard | Principal Investigator, Trinity College Dublin |
| Simms, Ciaran | Principal Investigator, Trinity College Dublin |
| Taylor, David | Principal Investigator, Trinity College Dublin |
| Thorpe, Stephen | Principal Investigator, University College Dublin |
| Tornifoglio, Brooke | Principal Investigator, Trinity College Dublin |
| Wetterling, Friedrich | Principal Investigator, Trinity College Dublin |
| Witney, Alice | Principal Investigator, Trinity College Dublin |

PRINCIPAL INVESTIGATOR AND CLINICAL INVESTIGATOR LIST

Table 2 Clinical Investigator List

| Name | Position/Institution |
|------------------------------|---|
| Professor Pieter Brama | Professor of Veterinary Surgery at University College Dublin |
| Professor Joseph Butler | Consultant Spine Surgeon, National Spinal Injuries Unit, Mater Misericordiae University Hospital, Mater Private Hospital & Tallaght Hospital |
| Professor Richard Costello | Consultant Physician in Respiratory Medicine at Beaumont Hospital, Dublin, and Associate Professor of Medicine at the Royal College of Surgeons Ireland |
| Dr. James Crowley | Consultant Cardiologist at Bon Secours Hospital Galway |
| Professor Orla Hardiman | Professor of Neurology/Head of Academic, Clinical Medicine Trinity College Dublin |
| Professor Michael Hutchinson | Consultant Neurologist at St Vincent's University Hospital Dublin |
| Professor Rose Anne Kenny | Professor of Medical Gerontology at Trinity College Dublin and Director of the Falls and Blackout Unit at St. James 's Hospital Dublin |
| Dr Damien Kiernan | Clinical Specialist Engineer, Gait Laboratory, Central Remedial Clinic Dublin |
| Professor Timothy Lynch | Consultant Neurologist at the Mater Misericordiae University Hospital and Beaumont Hospital Dublin |

PRINCIPAL INVESTIGATOR AND CLINICAL INVESTIGATOR LIST

Table 2 Clinical Investigator List

| Name | Position/Institution |
|--------------------------|--|
| Mr Alonso Moreno | Consultant Orthopaedic Surgeon at the Hermitage Clinic, Dublin |
| Professor Kevin Mulhall | Consultant Orthopaedic Surgeon at the Sports Surgery Clinic, Mater Misericordiae University Hospital, Mater Private Hospital and Cappagh National Orthopaedic Hospital |
| Mr Dylan Murray | Craniofacial, Plastic, and Reconstructive Surgeon at the Children’s University Hospital Temple Street and the Mater Hospital in Dublin |
| Professor John O’Byrne | Consultant Orthopaedic Surgeon at Cappagh National Orthopaedic Hospital and the Mater Private Hospital |
| Dr Faisal Sharif | Senior Lecturer School of Medicine Clinical Science Institute NUI Galway and Consultant Interventional Cardiologist, Soalta Group |
| John Tiernan | SeatTech Manager at Enable Ireland |
| Professor Niall Tubridy | Clinical Full Professor at University College Dublin School of Medicine |
| Dr. Laura Viani | Consultant Otolaryngologist/Neurotologist Beaumont Hospital, Temple Street University Children’s Hospital |
| Professor Desmond Winter | Associate Clinical Professor at Consultant General Surgeon St Vincent’s Private Hospital |

NUMBER OF RESEARCHERS, PHD STUDENTS AND OTHER STAFF

NUMBER OF RESEARCHERS (FELLOWS AND RAS)- CURRENT AND IF AVAILABLE TRAJECTORY SINCE 2019

As of September 23rd, 2024, there are 19 active postdoctoral research fellows, 4 research assistants working within TCBE. Over the five-year period (2019-2024), 47 postdoctoral research fellows and 20 research assistants were employed and have since departed research teams led by PIs within TCBE. (Data is based on TCD School of Engineering based PIs only)

NUMBER OF PHD STUDENTS - CURRENT AND IF AVAILABLE TRAJECTORY SINCE 2019

As of September 23rd, 2024, there are 43 registered PhD candidates working within TCBE. Since 2019, a total of 31 PhD students have successfully completed their studies through TCBE. (Data is based on TCD School of Engineering based PIs only)

NUMBER OF OTHER STAFF (SUPPORT)

Chief Technical Officer Specialist (Dr. Simon Carroll) and 2 project managers. (Data is based on TCD School of Engineering based PIs only)

STUDENTS THAT COMPLETED THEIR VIVA IN THE ACADEMIC YEAR

| Name | Supervisor |
|---------------------------|-------------------|
| Hayden, Conor | Bruce Murphy |
| Barceló Gallostra, Xavier | Daniel John Kelly |
| Suku, Meenakshi | Michael Monaghan |

RESEARCH OUTPUTS

Publications (Sept 2023-Aug 2024) from members of the centre – information from SciVal/Scopus

Scholarly Output: The number of publications from Centre members based in Trinity College Dublin

60

Number of citations

207 – Combined citation Count

Number of publications related to Sustainable Development Goals

13 Good Health and Well-Being (SDG3)

3 Sustainable cities and communities (SDG11)

1 Climate Action (SDG13)

Top Research Topic Clusters

Scanning Electron Microscopy

Athletes

Quality of Life

Anterior Cruciate Ligament

Computed Tomography

Electrospinning

Knee Joint

Nanofiber

Randomized Controlled Trial

Ankle Joint



RESEARCH OUTPUTS

Top Cited Publications (Sept 2023-Aug 2024)

Monaghan, M.G., Borah, R., Thomsen, C. and 1 more (...) (2023). Thou shall not heal: Overcoming the non-healing behaviour of diabetic foot ulcers by engineering the inflammatory microenvironment. *Advanced Drug Delivery Reviews*,203

Asaro, G.A., Solazzo, M., Suku, M. and 6 more (...) (2023). MXene functionalized collagen biomaterials for cardiac tissue engineering driving iPSC-derived cardiomyocyte maturation. *npj 2D Materials and Applications*,7(1)

McDonnell, E. E., Wilson, N., Barcellona, M. N., Ní Néill, T., Bagnall, J., Brama, P. A., ... & Buckley, C. T. (2023). Preclinical to clinical translation for intervertebral disc repair: Effects of species-specific scale, metabolism, and matrix synthesis rates on cell-based regeneration. *JOR spine*, 6(3), e1279.

Sadowska, J. M., Power, R. N., Genoud, K. J., Matheson, A., González-Vázquez, A., Costard, L., ... & O'Brien, F. J. (2024). A multifunctional scaffold for bone infection treatment by delivery of microRNA therapeutics combined with antimicrobial nanoparticles. *Advanced Materials*, 36(6), 2307639.

Man, K., Eisenstein, N. M., Hoey, D. A., & Cox, S. C. (2023). Bioengineering extracellular vesicles: smart nanomaterials for bone regeneration. *Journal of Nanobiotechnology*, 21(1), 137.

GRANTS AWARDED 2023/2024

Table 3 Grants Awarded 2023/2024

| PI Name | Project Title | Funding Body | Call Name |
|--------------------|--|------------------------|--|
| Brooke Tornifoglio | Novel Device for Ventilator Associated Pneumonia Prevention | Enterprise Ireland | Enterprise Ireland Commercial Case Feasibility Study |
| Brooke Tornifoglio | Investigation into device-tissue interactions in cerebral vascular tissue to provide fundamental insights for device development | Irish Research Council | IRC Employment based Postgraduate Programme |
| Bruce Murphy | The development of a dynamic transcatheter mitral valve edge-to-edge repair system | Enterprise Ireland | Enterprise Ireland Commercialisation Fund Call 2023 - Call 1 |
| Conor Buckley | Rejuvenation of the Intervertebral Disc Using Self-Healing Biomimetic Extracellular Matrix Biomaterial Tissue Adhesives | European Commission | ERC-2023-PoC3(Sep) |
| Daniel Kelly | Melt Electrowriting of Multi-layered Scaffolds for osteochondral defect repair | European Commission | ERC-2023-PoC2(Apr) |
| Daniel Kelly | A bioprinting platform for the rapid, reliable, controlled and quantifiable patterning of cellular aggregates and microtissues into macroscale regenerative grafts with programmable architectures | European Commission | HORIZON-HLTH-2024-TOOL-11 |
| Daniel Kelly | Biofabrication of Functional Meniscal Grafts using Fibrocartilage Microtissues | Irish Research Council | IRC Postdoctoral Fellowships |

GRANTS AWARDED 2023/2024

Table 3 Grants Awarded 2023/2024

| PI Name | Project Title | Funding Body | Call Name |
|------------------|---|----------------------------|--|
| Daniel Kelly | Engineering structurally anisotropic and mechanically functional musculoskeletal tissues by guiding the fusion, differentiation and (re)modelling of stem cell derived cartilage spheroids | Science Foundation Ireland | SFI Frontiers for the Future 2021 AWARDS |
| David Taylor | image-Guided computational and experimental Analysis of fractured Patients | European Commission | MSCA-2022-DN-01 |
| Michael Monaghan | ZebriSOME: Regeneration Permissive Matrisome From Zebra Fish Heart For Cardiac Healing After Heart Attack | European Commission | HORIZON-MSCA-2021-COFUND-01 |
| Michael Monaghan | Piezocetueal biomaterial scaffolds for immunomodulatory-based myocardial repair | European Commission | ERC-2023-COG |
| Michael Monaghan | BRILLFLIM – Optimised design of biomaterial implants to modulate the immunity-directed foreign body response by machine learning of single-cell macrophage stiffness and metabolic adaptations using noninvasive imaging modalities | Science Foundation Ireland | SFI Frontiers for the Future |
| Michael Monaghan | Engineering Innate Immunometabolism in the Maturation of in vitro Cardiac Models | University of Notre Dame | Naughton Graduate Fellowship |

* Data is based on TCD School of Engineering based PIs only. Grants awarded to TCBE PIs through national research centres (e.g. AMBER, ADAPT) are not captured in this list.



RESEARCH COLLABORATIONS

TCBE is actively involved in impactful collaborations at both national and international levels. One prominent partnership is the ongoing REGENEU twinning project, led by Prof. Buckley, which focuses on developing biofibers for wound healing and tissue regeneration. This project is a collaboration with Necmettin Erbakan University in Turkey, as well as Fraunhofer and Wuerzburg University in Germany (<https://regeneu.com.tr/>).

Additionally, Prof. O'Brien has an ongoing partnership with the 3Bs group at the University of Minho in Portugal, focusing on biomaterials for wound healing. Prof. Buckley recently launched a new collaboration with the Royce Institute at the University of Manchester, UK, to advance bioink and bioprinting technologies for wound healing applications.

Prof. Daniel Kelly also coordinates the recently funded m2M EU consortium project, titled "A bioprinting platform for the rapid, reliable, controlled, and quantifiable patterning of cellular aggregates and microtissues into macroscale regenerative grafts with programmable architectures." This €8 million project, funded by Horizon Europe under the Tools and Technologies for a Healthy Society call (HORIZON-HLTH-2024-TOOL-11), brings together leading academic and industrial experts in bioprinting, biomaterials, and cell therapies to develop innovative treatments for damaged synovial joints.

In terms of industry engagement and partnerships, Prof. Daniel Kelly, in collaboration with the AMBER research Centre, co-developed a state-of-the-art 3D bioprinting facility at the Trinity Biomedical Sciences Institute, in partnership with Johnson & Johnson (J&J). As part of this collaboration, Johnson & Johnson co-funded a €7 million project at the facility, exploring how 3D bioprinting innovations can impact various healthcare sectors. This completed project recruited 16 researchers and PhD students, resulting in 17 published research papers, 13 invention disclosure submissions, and 2 patent applications. Profs Buckley and Kelly have recently established a new collaborative project with J&J in the area of 3D printing of collagen lumens for surgical training. Prof Lally has an ongoing relationship with Boston Scientific, Clonmel in the areas of urology and heart valve research, supporting a number of PhD and Postdoctoral researchers.

On the national level, one of TCBE's strongest partnerships is with University College Dublin, where much of the large animal research is conducted.



AWARDS

TCBE has achieved significant success in securing prestigious grant funding, notably from the European Research Council (ERC) at all levels, including Starter, Consolidator, Advanced, and Proof of Concept awards. These accomplishments highlight the exceptional quality of research at TCBE and reinforce our reputation for world-class innovation and scientific excellence. On a national level, we have also excelled in securing awards from Science Foundation Ireland, the Health Research Board, and the Irish Research Council.

ADDED VALUE OF THE RESEARCH CENTRE

The Trinity Centre for Biomedical Engineering (TCBE) significantly amplifies research activity and excellence through its dedicated focus on advancing biomedical engineering innovations. Through interdisciplinary collaboration between engineers, scientists, and clinicians, TCBE facilitates groundbreaking research that is directly relevant to developing healthcare devices and technologies. The Centre's state-of-the-art facilities, coupled with its strong network of academic and industry partners, provide an environment conducive to high-impact research and development.

If the TCBE did not exist, several critical aspects of biomedical research and technological advancement in the region would be adversely affected. The absence of the Centre would likely result in a diminished capacity for conducting cutting-edge research that integrates engineering principles with biomedical applications. This could lead to reduced innovation in medical device development, tissue engineering, and healthcare technology, as well as a lower level of collaborative projects that bridge the gap between academia and industry.



FUTURE STRATEGY AND AREAS OF GROWTH

The future strategy of the TCBE focuses on several key areas of growth and opportunity:

- 1. Increased Non-Exchequer Funding:** The Centre aims to continue to have diversified funding sources from non-exchequer funding from private industry, foundations, and international grant bodies. This will ensure financial sustainability and support for ambitious research projects.
- 2. Information on National and European Policy:** Staying informed about and contributing to national and European policy developments will enable the TCBE to align its research priorities with broader healthcare and technological trends, thus influencing policy and securing relevant funding.
- 3. Spin-Out Enterprises:** The Centre will continue to foster the creation of spin-out companies based on its research discoveries. By nurturing startups and commercialisation opportunities, TCBE can translate research outcomes into practical applications that benefit society and the economy.
- 4. Attraction of ERC Awardees:** Attracting researchers who have received European Research Council (ERC) grants will enhance the Centre's research profile and capabilities. These awardees bring a high level of expertise and can drive innovative projects with significant impact.
- 5. Sustainable Research:** Emphasising sustainability in research practices (e.g. Green lab certification, <https://www.mygreenlab.org/>) and the development of eco-friendly technologies will align with global trends towards reducing environmental impact and promoting responsible research.



NEWS

Click on the links below to view the full story

[17 Trinity School of Engineering Researchers on Elsevier/Stanford University World's Top 2% Scientists Ranking](#)

14 Oct 2024

[School of Engineering Bioengineer, Dr Josephine Wu Secures Wellcome Funding to Develop New Tissue Engineering Approach](#)

30 Aug 2024

[Splitting hairs – Trinity Team Applies Science of Biomechanics to Understand our Bad Hair Days](#)

10 Jun 2024

[Trinity School of Engineering Professor Ciaran Simms Presents: KineMo | Athlete Movement Capture Directly from Video](#)

07 Jun 2024

[Three School of Engineering Researchers Secure SFI Frontiers for the Future Programme Funding](#)

28 May 2024

[Trinity Spinout Altach Secures €1.2 million Investment to Transform Treatments for Cartilage Injuries](#)

23 May 2024

[Congratulations to Professor Daniel Kelly on being admitted to The Royal Irish Academy \(RIA\)](#)

21 May 2024

[Introducing KineMo: Trinity College Dublin School of Engineering's Breakthrough in Athlete Kinematics Tracking](#)

06 Mar 2024

[Cristina Purtill, CEO of Plio Surgical Selected as a Finalist for the 2024 European Prize for Women Innovators](#)

23 Feb 2024



NEWS

Click on the links below to view the full story

[Trinity Professors Share Their Vision on Next-generation Biomaterials Training Human Tissue to Heal Itself](#)
22 Feb 2024

[Trinity College Dublin Centre for Biomedical Engineering Scholars Excel at Bioengineering in Ireland 2024](#)
02 Feb 2024

[Trinity Centre for Biomedical Engineering Spin-out Aims to Make Colon Cancer Surgery Safer and Improve Long-term Patient Outcomes](#)
26 Jan 2024

[Trinity School of Engineering Professor Conor Buckley wins ERC Proof of Concept Award to Develop Non-surgical Lower Back Pain Treatment](#)
18 Jan 2024

[Trinity Centre for Biomedical Engineering Research Day Showcases Innovation and Collaboration](#)
20 Dec 2023

[Trinity College Dublin School of Engineering Students Shine at Universal Design Grand Challenge 2023](#)
24 Nov 2023

[Trinity School of Engineering Professor Wins European Research Council Consolidator Grant](#)
23 Nov 2023

[Trinity Innovation Awards Celebrate Academics' Contribution to Research and Innovation](#)
08 Nov 2024

THANK YOU

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