



**UCD  
Earth  
Institute**

# **TOWARDS A SUSTAINABLE FUTURE**

**UCD EARTH INSTITUTE  
STRATEGY 2021-2024**





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The global environment is facing unprecedented challenges. Population growth and resource consumption are placing enormous pressures on the natural capital which underpins our life-support system, prosperity and well-being. Impacts of these challenges are unfairly distributed through society at local, national, regional and global scales.

It is recognised that economic activity must continue to support global aspirations for improved quality of life for all. However, it is also very clear that our economy and society must change dramatically to reduce environmental degradation, address the climate and biodiversity emergencies and enable a more just and sustainable future.

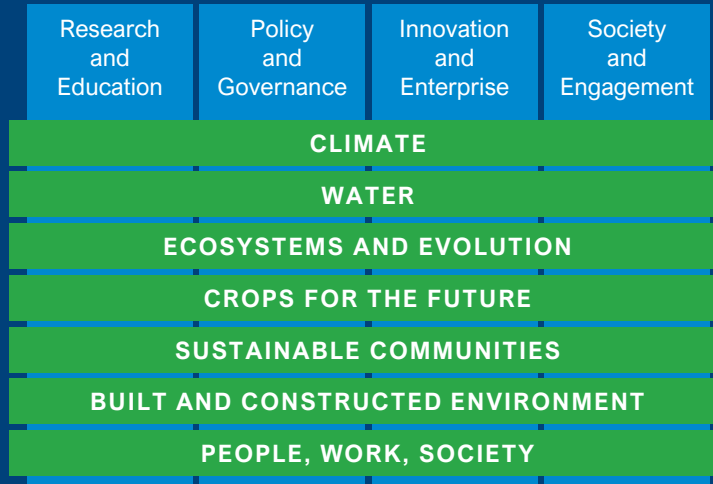
These challenges provide the impetus for global initiatives such as the United Nations Sustainable Development Goals, the Convention on Biological Diversity, the Intergovernmental Panels on Climate Change (IPCC) and on Biodiversity and Ecosystem Services (IPBES), the green and blue growth agendas and moves towards a circular economy and a just transition.

These initiatives drive Ireland's environmental innovation and stewardship through national frameworks such as the National Development Plan, the National Biodiversity Plan, Heritage Ireland 2030, the National Climate Action Plan, FoodWise 2025 and European Union (EU) agendas such as the EU Green Deal, the EU Biodiversity Strategy 2030 and the New European Bauhaus and directives such as the Nitrates Directive, the Water Framework Directive, and the Marine Strategy Framework Directive.

Covid-19 has illustrated this interconnected matrix of environmental, social and economic factors as land use change feeds into increased human-wildlife interactions, zoonotic disease and a pandemic that exacerbates existing inequalities. But out of the pandemic has come a powerful impetus for social, economic and environmental change and a demonstration that change is possible when research, enterprise, policy and society combine effectively.

To bring about change for the better, it is essential that the higher education and research sector plays its part in characterising the most pressing environmental and sustainability challenges, co-creating innovative solutions with industry and society and providing a sound knowledge base for environmental policy and management.

These challenges are necessarily complex and interdisciplinary in nature. Research must involve perspectives from a wide range of disciplines such that economic, societal and cultural dimensions are considered in combination with scientific and technological approaches. Education must nurture interdisciplinary knowledge and skills in sustainability so that the next generation can further drive the agenda now and in the future.



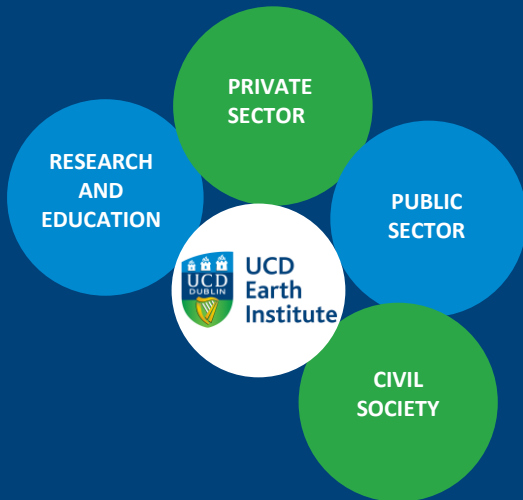
University College Dublin (UCD), as the largest third level Institution in Ireland, encompasses the full range of disciplines required to address environmental and sustainability challenges, with experts spread across 37 Schools in the Colleges of Science, Arts and Humanities, Business, Social Sciences and Law, Health and Agricultural Sciences and Engineering and Architecture. UCD also has seven research institutes which serve to foster research activity. Supported by small teams of core staff, institutes seek to complement the activities of Schools and Colleges, with whom each member has their primary affiliation.

The UCD Earth Institute provides an interdisciplinary space in which to bring together UCD's diverse expertise to address environmental and sustainability challenges. It looks to create new connections and collaborations, promote the cross-fertilisation of ideas, and actively support research that is innovative and impactful. We provide an interface to support environmental and sustainability stakeholders in identifying and partnering with our researchers.

The Institute is structured around seven multidisciplinary themes: Water, Climate, Ecosystems and Evolution, Crops for the Future, Sustainable Communities, the Built and Constructed Environment and People, Work, Society. The themes reflect key environmental and sustainability issues and the diversity of our members' expertise and interests. Cutting across these themes, we have dimensions on Research and Education, Policy and Governance, Innovation and Enterprise and Society and Engagement.

The Institute also supports two to four bottom-up strategic priority projects each year to bring together researchers from different disciplines to address the topical challenges they identify and build new collaborations. Current projects in 2021 include a collaboration with a local community group to map actions to address the UN Sustainable Development Goals, a new Centre for Irish Towns and a project identifying resilient crops for the future and examining cultural aspects of their history and uptake.





These themes, dimensions and strategic priority projects give shape to the Institute’s activities and foster interaction among members and with other institutions, organisations, sectors and wider society.

The Earth Institute contributes to the achievement of UCD’s strategic plans. In UCD’s current plan, *Rising to the Future 2020-2024*, the Institute directly feeding into theme ‘Creating a sustainable global society’ and supporting ‘building a healthy world’ and ‘empowering humanity’.

These themes relate not only to research, but also to education and institutional operations and the UCD research institutes can contribute to all three. For example, the Earth Institute has played an important role in developing UCD’s innovative new BSc in Sustainability.

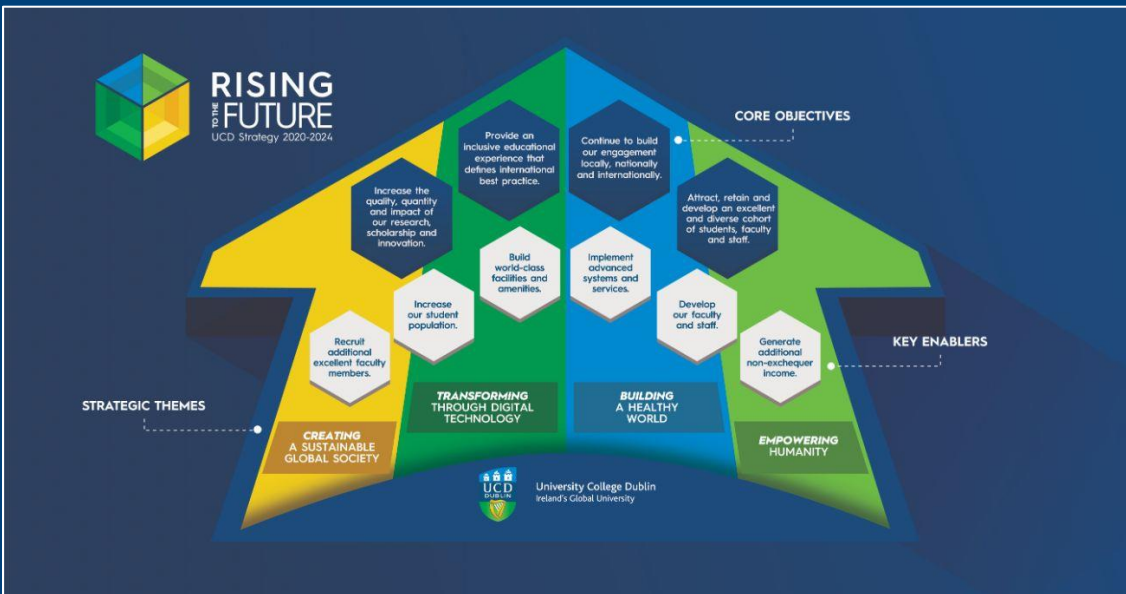
The last strategic period for the Earth Institute (2018-20) saw a number of important changes in direction. After wide consultation, we established a more inclusive membership policy, with a particular focus on early career researchers and a commitment to expansion. We sought increased engagement with researchers from the arts, humanities and social sciences (AHSS), worked on integration with our existing strengths in the science, technology, engineering and mathematics (STEM) disciplines, and focussed on building a strong sense of community for members from the full range of disciplines. Priorities included changes in governance, via the executive committee and external advisory board (see Appendix A), closer engagement with Schools, Colleges and other institutes, research centres, organisations and stakeholders, and the introduction of more bottom-up initiatives and supports to engage and benefit from the expertise and enthusiasm of the member community. Equality, diversity and inclusion were important priorities throughout and are now a focus for active research within the Institute through our People, Work and Society theme.

We also contributed substantially to the development of an innovative new cross-college BSc in sustainability and are committed to student engagement with sustainability challenges, for example by running a competition for undergraduates, partnering with the EPA on a competition for second level students and collaborating on events with student societies.

In this new plan, we highlight some of the progress made over the past three years and outline plans to build strategically on that progress. The new plan presented here outlines our strategic approaches for the next phase of activity to (a) Increase the quantity, quality and impact of environmental and sustainability research and innovation by further strengthening our interdisciplinary community and by facilitating and supporting our members and (b) Build our engagement and reputation locally, nationally and internationally by developing internal and external partnerships and further enhancing our profile and societal impact.

This plan presents an exciting vision and programme for the next four years and the Earth Institute team looks forward to working with our members, collaborators and partners to bring it to fruition.

**Professor Tasman Crowe**  
**UCD Earth Institute Director**



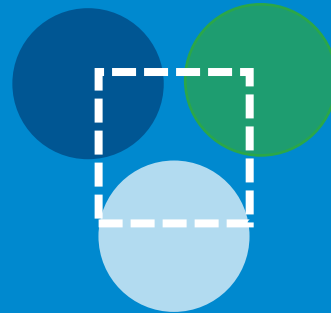


**Fostering interdisciplinarity** is central to the mission of the Earth Institute because insights and solutions to environmental and sustainability challenges generally involve more than one disciplinary perspective. Academic Schools and Colleges are generally established within disciplinary areas and the Institute serves as a bridge between them, helping to establish new conversations, ideas, insights, collaborations and innovations.

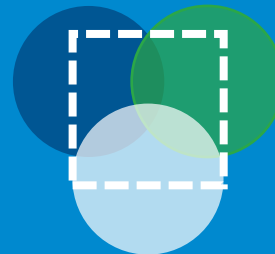
In this document, the term *interdisciplinarity* is used as a shorthand for three forms of collaboration, along a spectrum of interaction and integration. *Multidisciplinarity* combines viewpoints on a problem from the perspectives of two or more disciplines, but there is minimal interaction across disciplines. *Interdisciplinarity* implies a degree of integration between disciplines; the boundaries between them start to break down through working together and sharing ideas and approaches. *Transdisciplinarity* involves a complete breakdown of the barriers between disciplines, which integrate to become something new.

Establishing these kinds of collaborations requires connections to be made between individuals who are open to engaging with others with quite different objectives, approaches and languages. Despite the importance of interdisciplinarity, particularly in the context of sustainability, there are some systemic barriers to it in academia, such as the organizational structures of institutions and the emphasis on expertise within a discipline for publication, funding and promotion. As such, a cultural shift is needed to help promote and celebrate interdisciplinary approaches.

#### MULTIDISCIPLINARITY



#### INTERDISCIPLINARITY



#### TRANSDISCIPLINARITY









# VISION

Our vision is for a vibrant Earth Institute that combines its members' expertise to contribute to a sustainable future, integrating environmental considerations and research into decision-making and discourse at all levels.

# MISSION

Our mission is to foster research and innovation to address the environmental challenges of our time, to develop and support the environmental and sustainability research community in UCD and beyond, to forge new connections across disciplines and sectors and to help maximise the impact of our members' work.

In doing so, we will support the mission of the University to contribute to the flourishing of Ireland, Europe and the world through the excellence and impact of our research and scholarship, the quality of our graduates and our national and global engagement; providing a supportive community in which every member of the University is enabled to achieve their full potential.



# OBJECTIVES

**1. Increase the quantity, quality and impact of environmental and sustainability research, and innovation** by building interdisciplinary communities and facilitating and supporting our members.

**2. Build our engagement and reputation locally, nationally and internationally** by developing partnerships and enhancing profile and societal impact.



# OBJECTIVE 1: Increase the quantity, quality and impact of environmental and sustainability research and innovation

## 1.1 Building interdisciplinary communities

The pressing environmental issues we face today and in the future require input and expertise from a variety of disciplines and sectors if they are to be successfully addressed.

To foster interdisciplinarity, it is important to create multiple ways for our own community to come together, become aware of each other's skills and interests, interact formally and informally to spark new ideas. This can only be achieved through a culture of equality, diversity and inclusion across disciplines, career stages and roles.

The period 2018-2020 saw the development of a new model of Institute membership, encompassing a wider range of disciplines and broadening scope to include early career academics, and a new Associate Member status to acknowledge the important role in the Institute's community played by postdoctoral and doctoral researchers, as well

as technical and research support staff. We also established affiliate membership for researchers based at other institutions. The Institute has proactively sought to bring on board and support new members, especially recent arrivals to UCD, with a growth in this period from 60 members to over 130, and an associate membership of 260.

A new interdisciplinary BSc in Sustainability was launched, harnessing the research and teaching expertise of the breadth of the Institute community.

A range of new activities was developed to bring the membership together, including a new collaborative funding programme, our ever-popular coffee mornings, seminar series, career development sessions and campus walks. During the restrictions related to Covid-19, the Institute successfully moved many of these activities online and continued to build and support its community.

### In 2021-2024, we will

- continue to build on these successes, developing new ways of fostering community and interdisciplinary collaboration, both in person and remotely
- provide ready access for early career researchers and incoming early career Ad Astra academics to invaluable multidisciplinary networks
- create a supportive environment for new ideas and initiatives from our community across all career stages, with practical, financial and administrative support
- continue to cultivate an open, supportive, inclusive and collegial environment in all facets of the Institute's activities and practices
- reflect our commitment to equality, diversity and inclusion and adhere to the highest standards of integrity, dignity and respect



Geography is inherently interdisciplinary with sub-disciplines in both earth and societal aspects of today's global challenges. The Earth Institute's mandate to support networks and collaborations across both science and social sciences is a tremendous contribution to our discipline.

2020 alone has seen several members of our School discuss their research; Niamh Moore-Cheery had an interview in the Institute's *Earth Talks* series on urban development, Bradley Garrett launched his new book *Bunker*, and we co-hosted leading geographer Professor Danny Dorling (University of Oxford) talking on *Slow Down- the end of the great acceleration*.

I myself have met numerous researchers I simply wouldn't have known where to find and have forged new collaborations and some seed funding, with other members of the Institute. Most importantly, it offers early career researchers a place to meet other researchers and to share understanding. The coffee mornings for me personally were a short respite to hear about the tremendous work happening around the University – it was a vital connection in an otherwise disconnected period during Covid.

The ongoing support offered by the Institute for research collaboration and funding opportunities is beyond what one can expect of an entity like the Earth Institute and it's a credit to the whole team that they have such an engaged attitude to helping all of us work better together. I think the Earth Institute continues to grow from strength to strength and Geography considers itself very fortunate to have access to this expertise and commitment.

**Prof. Jacky Croke**  
**UCD School of Geography**

I received funding from the Small Responsive Fund in 2019 - at a time when I was working as an IRC-funded research fellow in the School of Mathematics and Statistics and the Earth Institute. The funding allowed me to travel to the UK to pursue a side project and collaborate with a researcher at the University of Reading on numerical simulations of a rotating annulus.

The collaboration resulted in software that can be used to simulate a multi-layer rotating annulus, and a still ongoing collaboration. For the future it is envisioned that this software will be used as a basis for a scientific publication or student projects. I have since progressed in my career and taken on an assistant lectureship in TU Dublin. No doubt, the network I built during my time in the Earth Institute has positively impacted my career development.

**Dr Nicole Beisiegel**  
**Technical University Dublin**



## 1.2 Facilitating and supporting our members

Excellent interdisciplinary research is underpinned by support staff, infrastructure and professional development, ensuring that new connections and ideas can develop into impactful and innovative research.

Over the period 2018-2020, bottom-up funding streams were introduced for Institute members to develop interdisciplinary collaborations on topical issues (strategic priority mechanism, Appendix C) and to support travel, events and other activities (small responsive funding scheme, Appendix D), while a number of successful interdisciplinary externally-funded awards have been supported. Institute members have had significant successes in research funding in this period, with awards

totalling over €30M (Appendix F).

The Institute has become an active facilitator of links between members, Schools and units to maximise the benefit of research equipment, facilities, and infrastructure within the University.

The Institute's base in the UCD O'Brien Centre for Science has become a hub of disciplinary diversity and activity, with an increase in the variety of disciplines represented in the space, enhanced further by the hosting of visiting academics and the provision of space for Institute members based elsewhere on campus. The Institute coordinates use of that space by researchers from eight different Schools and took a lead role in doing so during the Covid-19 restrictions.

### In 2021-2024, we will

- sustain our current funding programmes to support individual members in their research and the emergence of new strategic research areas
- further extend proactive facilitation of funding applications, targeting interdisciplinary opportunities of scale, complementing the work of staff in Schools, Colleges and UCD Research
- enhance the competitiveness of UCD environmental and sustainability researchers in securing research funding, creating impact and in developing commercial and social applications for their research outputs.
- further develop our training and support programmes for early career researchers and research support staff, based on best international practice, to support them in achieving their goals in UCD and in their careers.
- promote and support the sharing of expertise and resources across the membership, through knowledge exchange, networking, mentoring and events.





The Environmental Protection Agency competition, *The Story of Your Stuff*, invites second level students to investigate the life cycle of everyday 'stuff' through a creative medium. Students are encouraged to ground their research in the EPA's Ireland's Environment web resource, the key source of up-to-date information on Ireland's Environment. The aim of the competition is that students, and by extension their families and school communities, make everyday choices that reduce their environmental impact.

The EPA began to collaborate with the UCD Earth Institute at the UCD O'Brien Centre for Science in 2019. The competition now culminates in a showcase finale event on campus, celebrating the competition finalists and their projects. Over 100 students attend and receive special insight into innovative research projects taking place in UCD and the 2019 national finale event received fantastic feedback.

**Colette Ryan**  
**Environmental Protection Agency**

The UCD School of Archaeology has a strong and longstanding relationship with the Earth Institute. Many school staff have benefited from membership and participation in the Institute's research community.

For example, in 2019, we hosted a workshop for researchers from Ireland, Britain and Norway who studied prehistoric quarries. As part of this meeting, we received a €500 grant from the Earth Institute's Small Responsive Funding Scheme allowing us to hire a boat to take us on a field visit to Lambay Island, a quarry site for Neolithic stone axe manufacture. This trip was a highlight of the workshop and provided plenty of time for discussion and exploration of ideas.

Arising from this I became a partner on a project which had been developed by Astrid Nyland (University of Stavanger). This project examines the social impact of the last major tsunami in Northern Europe – the Storegga tsunami of 6150 BC – on the hunter-gatherer communities who settled Norway and Scotland. In early 2020 four years of funding for this project was confirmed from the Norwegian Research Council, and we start work soon on our comparative study.”

**Prof. Graeme Warren**  
**UCD School of Archaeology**



## **OBJECTIVE 2: Build our engagement and reputation locally, nationally and internationally**

### **2.1 Developing partnerships**

Intersectoral and interdisciplinary partnerships are key to developing solutions to complex environmental and sustainability challenges. Collaborating enables us to tap into complementary expertise, initiate new research partnerships, and increase the impact and benefits of our activities.

Over the period 2018-2020, we initiated and supported new relationships with government agencies, academic partners, enterprise and community groups to the benefit of our members and UCD.

We developed new initiatives and productive

partnerships nationally and internationally with organisations including the All-Ireland Climate and Biodiversity Research Network, the Environmental Protection Agency, the Environmental Science Association of Ireland, Future Earth Ireland, the United Nations Academic Impact programme and the World Universities Network.

Within the University, we collaborated with colleagues from across UCD's six Colleges and constituent Schools, with our six fellow Institutes and forged productive links with Research Centres to help deliver new and innovative initiatives and events.

### **In 2021-2024, we will**

- partner with organisations with shared values and complementary interests to maximise the impact of our research and create new opportunities for our members
- proactively develop new strategic relationships with leading universities, state agencies, enterprise, funding agencies, social and community organisations, nationally and internationally
- act as an interface to broker new collaborations between our members and stakeholders relevant to their research
- build new institutional connections through our network of Affiliate Members
- collaborate internally with relevant units to raise the profile of environmental and sustainability research and researchers across the University.



The Earth Institute was crucial in helping to develop the ideas and networks behind our successful Science Foundation Ireland Centre application in 2017 for the BiOrbic Bioeconomy Research Centre, bringing together a multidisciplinary consortium of scientists, social scientists and engineers.

BiOrbic and the Earth Institute are now co-located in the O'Brien Centre for Science, and the Institute continues to provide invaluable support for BiOrbic's growth and development.

**Prof. Kevin O'Connor**  
**Director, BiOrbic Bioeconomy SFI Research Centre**

I joined the Earth Institute in 2019, when I moved to UCD to start my research group in computer vision and machine analytics. The Institute provided our research group the opportunity to collaborate with other Institute members, thereby performing world-class environmental research.

I enjoy being a part of the Institute community because of its interdisciplinary nature, regular funding seminars and workshops, and vibrant coffee mornings organised every Thursday. I have received extensive technical and research funding support from the rich network of dedicated project management team, climate scientists and atmospheric researchers in the institute. I am looking forward to an exciting and an eventful future with the Institute in the coming years.

**Dr Soumyabrata Dev**  
**UCD School of Computer Science**



The Earth Institute was pivotal for *BioCrop: Biostimulants and Biopesticides for Crop production*, a Department of Agriculture, Food and the Marine funded project (2020-24, €1,999,000) led by UCD. This involves a multidisciplinary team from UCD, National University of Ireland Galway, Trinity College Dublin, Teagasc, the University of Seville and industry partners including Brandon Bioscience and e-Seed. Of the UCD principal investigators in BioCrop seven are Institute members.

*BioCrop* will identify new biostimulants and low risk biopesticides while engaging with industry to test existing biostimulants. BioCrop aims to find alternatives for farmers in the face of EU regulations to reduce fertiliser use and the ongoing loss of plant protection products.

**Dr Angela Feechan**  
**UCD School of Agriculture and Food Science**





## 2.2 Enhancing profile and societal impact

A strong reputation and a high profile at national and international level helps attract interest, researchers and collaborators and so further improves levels of activity, engagement and impact. Over the period 2018-2020, as our community grew in size and diversity, we started to tell the stories of our research and our researchers in new and innovative ways and to help develop members' expertise in that regard.

The Institute has reached out to researchers, stakeholders and the wider community and become more widely known. For example, it has played a central role in promoting and advocating

for the UN Sustainable Development Goals, and led the organisation of an SDG seminar series involving panels of researchers and practitioners. It routinely and visibly supports national and international workshops and conferences, both directly and through its strategic priority projects. It has attracted attention from print media for its members' work and substantially increased its following on social media.

However, we recognise that there is scope for a more substantial level of engagement to bring further benefits to the Institute's members, UCD, our collaborators, partners and stakeholders.

### In 2021-2024, we will

- promote awareness of UCD environmental and sustainability research around the world, through our research outputs, through our engagement with the media, and through our participation in and hosting of international conferences, workshops and events
- enhance the profile of our members, Institute, University and partners, as well as environmental and sustainability research in all its facets and applications
- develop new communications and engagement platforms, new relationships with key media stakeholders and providing training to equip our members to communicate and engage with different audiences.
- make the case for strong public support of environmental and sustainability research, based on clear and compelling articulation of the value and impact of interdisciplinary research
- seek to play a central role in the delivery of the University's strategic themes, with environmental and sustainability research critical to *creating a sustainable global society, building a healthy world and empowering humanity*.
- continue to champion engagement of the UCD research community with the UN Sustainable Development Goals and will support research that addresses the Goals.



An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreachta  
Department of Housing,  
Local Government and Heritage

Now more than ever in human history - as a society, as citizens of Ireland and the Earth – there is a clear need for proactive multidisciplinary and collaborative engagement in order to address the major environmental issues of our time, founded on an evidence base of the highest quality.

The UCD Earth Institute delivers in a most tangible form the range of expertise, insight, perspectives and skills necessary to harness and draw together the right resources, to address key environmental questions, to critically assess the evidence and find solutions that are workable, to get the best results out of collaboration. Through its members' active willingness to contribute expertise, ideas and data, to influence decisions and policy, to guide towards a more environmentally sustainable future for us all, the Institute is poised to play a pivotal role in shaping the evolving interface between people and our built and natural environments; not just for the better but for good.

**Richard Cronin**

**Principal Advisor, Marine, Department of Housing, Local Government and Heritage**

With the support of UCD Earth Institute Small Responsive Funding, I visited the Institute of Plant Ecology at Justus Liebig University (JLU), Germany to develop collaborative links, present research results, and provide training of a new analytical technique to researchers from JLU and the International Atomic Energy Association. This method was developed as part of my PhD research in the UCD Earth Institute's Stable Isotope Analysis lab with Dr Paul Murphy. Researchers at JLU benefitted from this hands-on training and support with their new equipment which has further strengthened collaborations between UCD and this research group. The funding was very beneficial to me as I really enjoyed providing this training and the interaction with other researchers has helped my PhD and career progress.

Since the visit to Giessen a scientific paper based on the method developed in the Stable Isotope Analysis lab, which includes some of these key collaborators as co-authors, has been published and this research work has also contributed to a recently published book chapter in 'Measuring Emission of Agricultural Greenhouse Gases and Developing Mitigation Options using Nuclear and Related Techniques'. Further potential collaborations and funding opportunities investigating soil N cycling and N<sub>2</sub>O emissions are being pursued on the basis of the methodology established at the UCD Earth Institute Stable Isotope Analysis lab with the help of this funding.



**Dr Conor Bracken**  
Teagasc



Much of my research in recent years falls under the broad heading of sustainable communities and I was drawn to volunteer to be one of the co-ordinators of the Institute Research theme on this topic, with Dr Karen Foley from the School of Architecture, Planning and Environmental Policy and the Coastal Communities Adapting Together research project. The theme brings together a number of Institute members from diverse backgrounds including agriculture, architecture, engineering, landscape architecture, geography, social policy.

My current research under this theme is on sustainable housing and community regeneration via energy (residential and transport) with a focus on poverty and social inequalities. Promotion of research in this area can help us meet several of the UN Sustainable Development Goals.

The Earth Institute facilitates and supports research collaboration in a truly interdisciplinary manner. Weekly coffee mornings by Institute members from all relevant disciplines are informative and inspiring.

**Associate Professor Nessa Winston**  
**Director of Research, School of Social Policy, Social Work and Social Justice**

The DIVERSICROP project is building an international research network to investigate underutilised crops. Today, much of our human dietary energy intake depends on a small variety of plants. With an increasing global population, we need to sustainably produce nutritious food, within the context of changing agro-climatic conditions. DIVERSICROP has selected stress-resilient and nutrient-dense crops that have a long history in Europe – stretching back thousands of years – but are not widespread nowadays due to a variety of issues, including social avoidance, perceived low yields and lack of governmental policies to encourage cultivation. Promotion of these crops can help us meet several of the UN's Sustainable Development Goals.

DIVERSICROP is funded by the Earth Institute Strategic Priority Support Mechanism, bringing together Institute members from diverse backgrounds, including crop science, nutrition, policy and archaeology. Earth Institute funding and administrative support is enabling the development of a solid framework in which European researchers can collaborate in a truly interdisciplinary manner.

**Dr Meriel McClatchie, UCD School of Archaeology**  
**Dr Sónia Negrão, UCD School of Biology and Environmental Science**







EX BUCKLEY

TRADER JOHNS

FOUR BINGO

MIXED BUNCHES 3 FOR €5

ROSES only €5 BUNCH

PE QUALITY

MAS HERMANOS

BRYAN'S

Internet Access

Almond Cream

SALE

City

UPON

STREET

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# KEY PERFORMANCE INDICATORS

- 1. Fifty events each year to help build community in the membership and the wider research ecosystem**
- 2. Ten percent year on year increase in number of instances of Institute contributions to new interdisciplinary research, innovation and impact highlighted by members\***
- 3. Three large scale member-led multidisciplinary funding applications supported per annum**
- 4. Three new partnerships with external research or stakeholder organisations initiated per annum**
- 5. Ten initiatives developed each year to foster community engagement with our research**
- 6. Ten percent year on year increase in media and social media mentions**

\* Given the primary affiliation of our members with their Schools and Colleges, we are not claiming members' publications or grant income as direct measures of our success, but only highlighting tangible contributions we have made to their successes, generally volunteered by the researchers themselves







# RESEARCH THEMES

The UCD Earth Institute's seven research themes reflect our multidisciplinary expertise, with theme members drawn from across UCD's six colleges.

Our themes aim to tackle local, national and global environmental and sustainability challenges, which necessarily require interdisciplinary and cross-sectoral approaches, and we work within framework of the United Nations Sustainable Development Goals.

1. Climate
2. Water
3. Ecosystems and Evolution
4. Crops for the Future
5. Sustainable Communities
6. Built and Constructed Environment
7. People, Work, Society

# CLIMATE

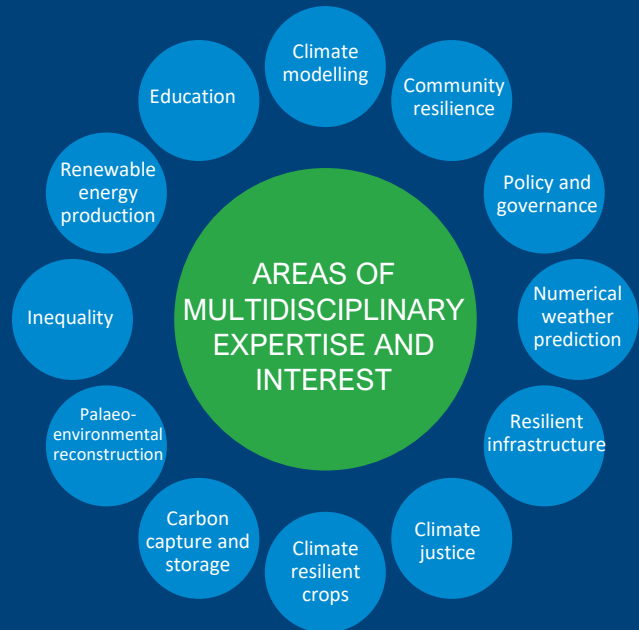




Current greenhouse gas concentrations and the rates at which they are increasing in the atmosphere because of human activities are unprecedented in recent Earth history. The resulting anthropogenic climate change is arguably the greatest challenge facing humanity. Its wide-ranging impacts affect the delivery of many of the fundamental societal needs identified in the UN SDGs such as improved health, food and water availability, elimination of poverty and inequality, access to clean energy, and the development of better infrastructure for sustainable cities and communities.

The problem of climate change is multifaceted; the climate system is highly non-linear and many of the climate system feedbacks remain poorly quantified within climate models. Solutions to climate change will require integrated interdisciplinary mitigation and adaptation strategies that are not only scientifically robust, but also deliverable by society. This in turn will require significant societal engagement, education and behavioural change, underpinned by robust national and international governance and monitoring to achieve climate resilient communities and a just transition.

Examples of current projects include the development of innovative methods for improved numerical weather prediction schemes and better validation of climate models and their projected impacts, through to activities that have a strong societal, policy, governance and outreach dimensions such as the development of improved



technologies for carbon capture and storage, decarbonisation of the energy sector, peatland management, research on adaptation to climate change by humans, plants and animals.

Researchers in the climate theme are exploring multiple opportunities that exist at the interface between traditional science- and engineering-based solutions and the social sciences and humanities, recognising that the latter are key to understanding the challenges we face, while enabling us to design and deliver a more ambitious and quantifiable plan for climate change mitigation and adaptation.

AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BIOLOGY AND ENVIRONMENTAL SCIENCE
CIVIL ENGINEERING	EARTH SCIENCE	ENGLISH, DRAMA AND FILM	GEOGRAPHY
LAW	MATHEMATICS AND STATISTICS	MECHANICAL AND MATERIALS ENGINEERING	SOCIAL POLICY, SOCIAL WORK AND SOCIAL JUSTICE

# WATER



3 GOOD HEALTH AND WELL-BEING



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



17 PARTNERSHIPS FOR THE GOALS





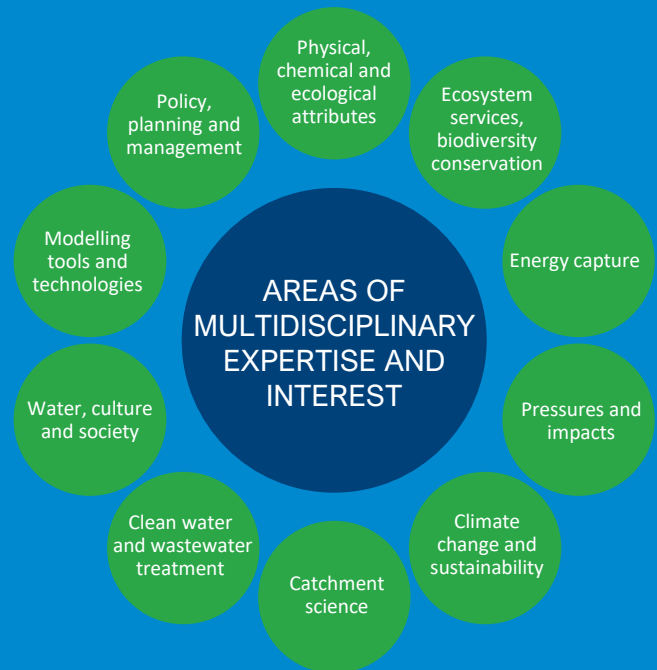
Water is essential for sustaining life on Earth and economic activities. In Ireland, we have 84,000 km of rivers, more than 12,000 lakes, 4000 km of coastline and an exclusive economic zone covering 880,000 km<sup>2</sup>, which provide essential ecosystem services and associated benefits supporting human wellbeing and economic activities.

However, over the past few decades there have been increased pressures on these water resources. The *EPA 2020 Indicators* report highlights that 43% and 45% of rivers and lakes, respectively are in moderate or worse water quality, thus they are not meeting the objectives of the Water Framework Directive. Of particular concern is the loss of the high quality river sites from 500 in the 1980s to just 22 today. In the period 2013 to 2019 just under half of monitored groundwaters have shown increasing nitrate concentrations. Although few sites exceed the drinking water standards, 22% of sites had elevated concentrations indicative of inputs relating to human activities. Loads on nitrogen and phosphorus to the marine environment have also increased in recent years. In Ireland as well as globally we have significant water quality protection challenges that urgently need to be addressed.

This theme brings together freshwater and marine researchers that are addressing the information needs of policy and practice. Research relating to water quality covers detection and mitigation of multiple anthropogenic pressures including waste

treatment and management. These topics are also investigated in the context of climate change and contaminants of emerging concern.

The contributions of aquatic resources to human wellbeing, also known as ecosystem services, is an area of growing focus and includes expertise to address how we support economic development and social concerns while protecting biodiversity and maintaining the flow of goods and services.



AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BIOLOGY AND ENVIRONMENTAL SCIENCE
BIOMOLECULAR AND BIOMEDICAL SCIENCE	BIOSYSTEMS AND FOOD ENGINEERING	CIVIL ENGINEERING	EARTH SCIENCES
ENGLISH, DRAMA AND FILM	GEOGRAPHY	MATHEMATICS AND STATISTICS	MECHANICAL AND MATERIALS ENGINEERING
SOCIAL POLICY, SOCIAL WORK AND SOCIAL JUSTICE			



# ECOSYSTEMS AND EVOLUTION





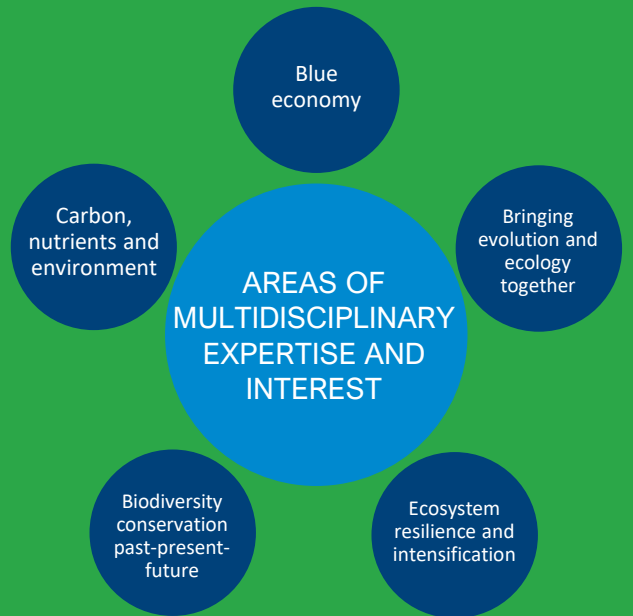
The Earth's ecosystems underpin the wellbeing of us as individuals and our society by providing essential services that range from the provision of the food we eat and the clean air we breathe, to the cultural and aesthetic values of our landscapes.

Evolution provides a foundation for our understanding of how the living world responds to a changing ecosystem. We rely on healthy and biodiverse ecosystems, and this biodiversity is increasingly under threat. Research within this theme helps us to understand the complexity of ecosystems and how we can act to protect, manage and restore them.

An ecosystem perspective is increasingly seen as part of the solution to global challenges, such as climate change adaptation, biodiversity loss, ensuring food security through resilient agricultural production and the reduction of greenhouse gas emissions. The importance of ecosystems and evolution is reflected in international policy strategies, such as the UN Sustainable Development Goals and the EU Biodiversity Strategy 2030.

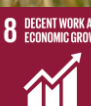
Researchers in the ecosystems and evolution theme come from many disciplinary backgrounds encompassing the sciences, social sciences, engineering and humanities. Their research addresses questions such as: How can we better understand the complex interdependencies between humans, other animals, plants and

microorganisms? How can genetic technology better be used to study biodiversity? How is shifting climate affecting plants and animals, their sources of food and their patterns of migration? How can we learn from ecosystems of the past to conserve biodiversity and ecosystems into the future?



AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BIOLOGY AND ENVIRONMENTAL SCIENCE
BIOSYSTEMS AND FOOD ENGINEERING	EARTH SCIENCE	HISTORY	LAW

# CROPS FOR THE FUTURE



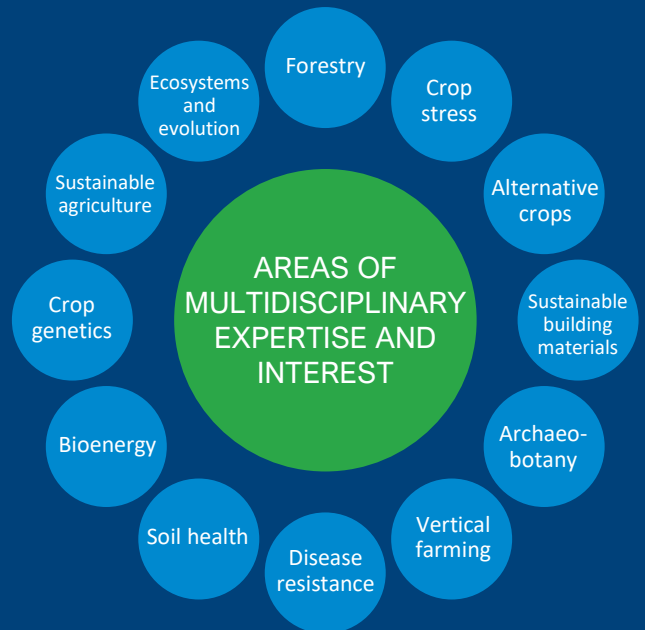


The Crops for the Future theme acknowledges the tremendous role crops play in our life and recognises the challenges that crop production faces in a changing climate, with a growing world population and increasingly limited resources. Addressing the future of crop production is fundamental to food security, sustainability and human health. In addition, crops are more than a source of human calories: they provide animal feed, clothing, medicinal compounds, biofuel, paper and building materials. Crops shape our landscape: more than one third of the land area worldwide is agricultural land. Crops also have a key impact on local economies and the communities that produce them.

The researchers within the Crops for the Future Theme work on the challenges associated with sustainable crop production such as disease, extreme weather events, yield, the environmental impact of growing crops and their interactions in ecological systems. We work on a wide range of species, from cereals to vegetable and alternative crops. Researchers use cutting edge technologies and experiment with growing techniques at UCD Rosemount Environmental Research Station and Lyons Farm.

Our researchers are drawn from different schools across the University and have expertise in forestry, crop, soil and plant sciences, genetics, molecular biology, archaeology, engineering, and mathematics.

By combining these areas we aim to go beyond studying plants as an isolated system, taking into account the influence they have had on human history, society and in shaping the world we live in. We are cooperating with farmers, industry partners and government agencies to ensure our research has impact. We raise awareness of plants via outreach activities and organise and participate in public events from school visits to 'pints of science'.



AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BIOLOGY AND ENVIRONMENTAL SCIENCE
BIOSYSTEMS AND FOOD ENGINEERING	COMPUTER SCIENCE	ECONOMICS	POLITICS AND INTERNATIONAL RELATIONS

# SUSTAINABLE COMMUNITIES

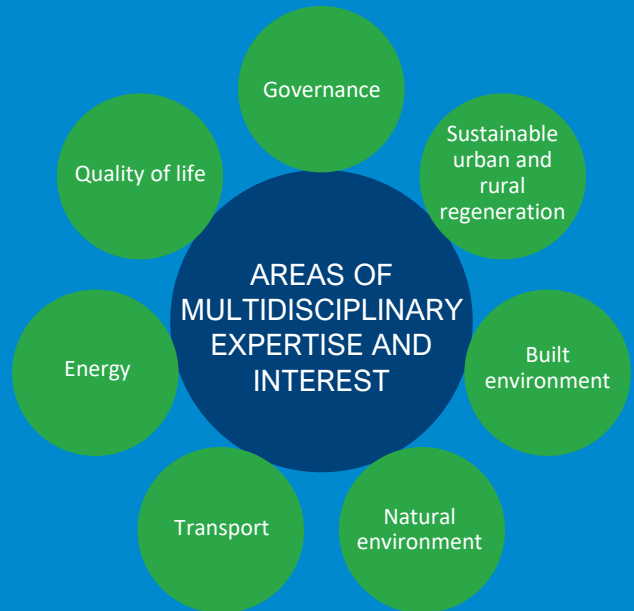


The sustainable communities research theme is concerned with environmental, economic, and social sustainability recognising that each of these is crucial for more sustainable development. How humans spatially and socially organise within communities has a huge influence on the environment and on the lives of people within those communities. Planning and design play a huge role in determining the sustainability and liveability of cities, towns and villages. From the local to the global, understanding communities is central to addressing challenges such as climate change, sustainable consumption and production, our relationship to nature, and human wellbeing.

There are several distinct but often intrinsically linked strands of research in the theme. Researchers within the theme look at sustainability in the built environment, the construction and use of buildings, housing, accommodation as well as the quality and sustainability of the natural environment in which the community is located and the ecosystem services provided. Other areas focus on sustainable transportation including issues of accessibility to essential services such as education, training and employment. Energy is key to sustainable communities, in particular ensuring access for all to an affordable, secure supply of renewable energy. Research on quality of life and well-being is also part of the theme, addressing a range of important topics such as physical and mental health, social inclusion and cohesion, and community resilience.

Progress in these areas requires improved governance and urban and rural regeneration, with projects on these topics an essential strand of the theme. Our research is also concerned with the needs of more vulnerable households including those from lower socio-economic groups, people with disabilities, some older households as well as black and ethnic minorities, ensuring an emphasis on Just Transitions.

Looking externally, the co-ordinators of the theme are in the process of establishing a formal link to the European Network for Housing Researchers Working Group on Sustainable Communities and other relevant international research groups.



AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BUSINESS	
EDUCATION	ENGLISH, DRAMA AND FILM	GEOGRAPHY	LAW	HISTORY
MECHANICAL AND MATERIALS ENGINEERING	POLITICS AND INTERNATIONAL RELATIONS	PUBLIC HEALTH, PHYSIOTHERAPY AND SPORTS SCIENCE	SOCIAL POLICY, SOCIAL WORK AND SOCIAL JUSTICE	



# BUILT AND CONSTRUCTED ENVIRONMENT

3 GOOD HEALTH AND WELL-BEING



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS





The Built and Constructed Environment theme conducts collaborative research at the interface between humans and the built environment that we have created and in which we live. Through integrated interdisciplinary research, the theme aims to find solutions to major societal challenges.

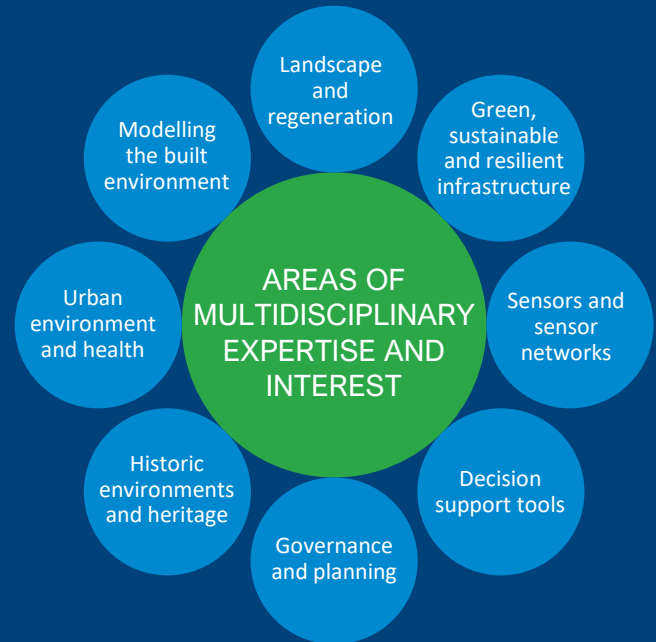
How does the built environment impact on our health, our happiness and our life chances? How can we make our cities, towns and rural landscapes smarter and more sustainable? How can our urban and rural landscapes be developed and regenerated to make them functional and stimulating places to live in whilst preserving their cultural and natural heritage? How can we make our new and existing infrastructure more resilient to natural hazards and changing climates? What are best practice planning and governance to enable these changes? What can we learn from historical and prehistorical precedents of how communities constructed their environments?

Our research has a particular focus on urban planning, sustainable design, green infrastructure, sustainable building materials, indoor environmental quality and in the analysis and optimisation of energy conversion systems. Our researchers work at the interface between civil society and policy, for example between the public and the institutions of the planning system, and model travel behaviour and transport networks in order to inform policy and behavioural economics.

The theme also has expertise in spatial data handling and in its visualisation and analysis at a

variety of scales. Through the use and development of decision support tools, sensors, advanced numerical modelling and historical perspectives in an interdisciplinary environment, researchers aim to understand and quantify risks to critical infrastructure and improve their resilience.

Long-term perspectives on the built and constructed environment show how human capacities are shaped by their environments as they shape the landscapes in which they live. The built environment extends to the materials we use and the tools we construct – the means through which we experience the world around us.



AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BIOLOGY AND ENVIRONMENTAL SCIENCE
CIVIL ENGINEERING	EARTH SCIENCE	ENGLISH, DRAMA AND FILM	GEOGRAPHY
LAW	MATHEMATICS AND STATISTICS	MECHANICAL AND MATERIALS ENGINEERING	SOCIAL POLICY, SOCIAL WORK AND SOCIAL JUSTICE

# PEOPLE, WORK, SOCIETY



4

QUALITY  
EDUCATION



5

GENDER  
EQUALITY



8

DECENT WORK AND  
ECONOMIC GROWTH



9

INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



12

RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



17

PARTNERSHIPS  
FOR THE GOALS



The People, Work, Society theme looks to foster and support new collaborations and initiatives tackling issues including fairness and equality, decent work and working conditions, care and caring, human rights, sustainable development, just transition, governance and transparency, racial justice, migration and creating a better world.

The key to achieving these objectives is raising and answering difficult questions that address critical challenges including how do we ensure people can flourish in the transition to a sustainable, regenerative system? How do we ensure the future of work, that work is fit for purpose and that people can get decent work? How do we elevate care and caring to a valued position in society? How do we ensure racial justice fundamental to collective progress? How do we motivate and create new systems that put people at the forefront of progressive thinking and action?

The theme is founded on the ideas of social, economic and ecological progress on a sustainable basis and is multidisciplinary in scope. It crosses multiple fields including arts, business, education, humanities, law, the sciences, and social sciences. We explore this at multiple levels including the level of the individual, families, groups, teams, organisations, movements, industries, governments, multi-stakeholder initiatives, and at the societal level.



As stated in the Beveridge report (1942), ‘a revolutionary moment in the world’s history is a time for revolutions, not patching,’ it is time to identify what is not working with our current ideas, structures and institutions and provide ideas and solutions to make them work for the good of humanity.

AGRICULTURE AND FOOD SCIENCE	ARCHAEOLOGY	ARCHITECTURE, PLANNING AND ENVIRONMENTAL POLICY	BUSINESS
BIOSYSTEMS AND FOOD ENGINEERING	EDUCATION		GEOGRAPHY
LAW	POLITICS AND INTERNATIONAL RELATIONS	MECHANICAL AND MATERIALS ENGINEERING	SOCIAL POLICY, SOCIAL WORK AND SOCIAL JUSTICE





# CROSS-CUTTING DIMENSIONS

The UCD Earth Institute's dimensions indicate our four main areas of activity, cutting across all our themes.

They are our mechanism by which we share knowledge and expertise across our membership and contribute to our strategic objectives.

The dimensions reflect our core strength in excellent research and education, and our ambition to enhance our engagement and impact with all sectors of society.

1. Research and education
2. Policy and governance
3. Innovation and enterprise
4. Society and engagement

# RESEARCH AND EDUCATION

The Earth Institute is at the heart of an interdisciplinary research and education ecosystem in UCD, fostering, supporting and developing the environmental and sustainability research community.

UCD is one of Europe's leading research-intensive universities and is ranked within the top 1% of higher education institutions world-wide. The state-of-the-art and unique facilities for environmental and sustainability research include the Centre for Experimental Archaeology and Material Culture, Lyons Research and Teaching Farm, the O'Brien Centre for Science, and Rosemount Environmental Research Station.

Supporting research is the core business of the UCD Earth Institute. The Institute provides the interdisciplinary space to bring together a community of researchers from across UCD's six constituent colleges, to learn and to share knowledge, to seed new ideas and initiatives, and to maximise the impact of their work. This is done in an atmosphere of collegiality and with an emphasis on supporting early career researchers.

The Institute works closely with colleagues in the University's six other research institutes and funded centres including the BiOrbic Bioeconomy SFI Research Centre and iCrag SFI Research Centre for Applied Geosciences.

UCD's unique educational offering includes the world-leading Michael Smurfit Business Graduate School, Ireland's only farm-to-fork agriculture and food department and the only higher education

institute to offer an undergraduate degree in Landscape Architecture. With the newly launched BSc Sustainability (see panel below), the University offers an interdisciplinary education to develop students equipped to face the grand societal and environmental challenges we face.



In 2020, UCD launched a **BSc in Sustainability**, the first programme of its kind in Ireland. Devised and coordinated by Institute Director Prof. Tasman Crowe (School of Biology and Environmental Science) and Prof. Jacky Croke (School of Geography), this truly interdisciplinary undergraduate course aims to give students a grounding in the key issues of sustainability across the sciences, social sciences, humanities and engineering.



# POLICY AND GOVERNANCE

Our members provide evidence-based research to policymakers and to inform public debate, from the Houses of the Oireachtas to the United Nations and the World Economic Forum in Davos.

Our expertise spans complex environmental and social issues from poverty, housing, regeneration and quality of life to climate change, the bioeconomy, marine protected areas, corporate social responsibility and the management of natural resources such as peatlands.

Institute members hold or have held senior advisory roles to governments and international organisations, have contributed their expertise to the boards of Royal Irish Academy and Science Foundation Ireland as well European Commission committees on climate and sustainable finance. Our researchers regularly make expert submissions to Oireachtas Joint Committees including those on Climate Action and Housing, Local Government and Heritage, while UCD environmental lawyers have led actions against the Irish Government to revise its national climate policy in light of its legal obligations.

The Policy and Governance dimension provides a forum for sharing the wealth of expertise of our members while programmes such as the MSc in Environmental Policy are helping to produce UCD graduates with a capacity to develop environmental policy choices, analyse them critically and to provide guidance in policy implementation.



**Prof. Patrick Paul Walsh** (UCD School of Politics and International Relations) represented thousands of universities worldwide as a member of the UN Major Group for Science and Technology during the eight months of UN intergovernmental negotiations of the 2030 Agenda for Sustainable Development and its seventeen Sustainable Development Goals (SDGs).

Prof. Walsh is a Professor of Development Studies, directs the UCD Centre for Sustainable Development Studies and is coordinator of the UCD MSc in Sustainable Development, run in partnership with the SDG Academy.

# INNOVATION AND ENTERPRISE

We work to foster creativity, innovation, social entrepreneurship and our researchers work directly with commercial partners across a range of sectors and industries.

Our researchers have established productive collaborations and partnerships with industries in the green and blue economies, provide consultancy services and have spun out companies based on their research.

The Innovation and Enterprise dimension has a particular emphasis on generating a culture of social innovation and enterprise within the Institute and University, establishing links with the not-for-profit sector in Ireland and measuring the tangible social and environmental benefits of social innovation and enterprise that have emerged from our research.

Our activities in this area include seminars showcasing leading social entrepreneurs and workshops for early stage researchers with the aim of highlighting the potential for Institute researchers to develop novel ways to address complex environmental and societal challenges through their own work.

The Institute also works closely with the Knowledge Transfer team in NovaUCD to assist our researchers in exploring the commercial potential of research outputs and to implement protection strategies, to explore commercialisation opportunities through licensing and spin-out

formation and to develop productive collaborations with industry.



**Dr Philip Crowe** (UCD School of Architecture, Planning and Environmental Policy & School of Civil Engineering) co-founded social enterprise Space Engagers, a research and co-design collective, which emerged from doctoral research on the EU TURAS project. Space Engagers is an SME partner on the H2020 +CityxChange project in Limerick and has worked with a number of organisations such as the Peter McVerry Trust to explore urban vacancy. Space Engagers recently authored a report for the Irish Government's Town Centre Living Initiative that is directly influencing the formation of a Town Centres First policy.

# SOCIETY AND ENGAGEMENT

We strive to produce research that makes a demonstrable contribution to society and our researchers work closely with the communities most affected by their work.

Environmental and sustainability challenges are complex and interlinked with other social and economic issues. They require not only interdisciplinary approaches, but also the participation of multiple stakeholders including civil society.

Co-design and co-production can increase the relevance and usability of research for society, breaking linear traditional collaboration and participation structures by harnessing local needs and knowledge.

Our researchers work closely with the communities most affected by their work on issues including access to housing and work, community resilience to climatic change and environmental degradation, environmental justice and a just transition.

Institute initiatives such as the Ecobroker platform provide new collaboration opportunities for researchers and environmental practitioners, while the Community SDG Dashboard is creating a new model for community-academic partnership in addressing the UN Sustainable Development Goals (see Appendix C).

The Institute supports our community in finding novel ways to inform and engage people in their research, through citizen science, resources for



**Dr Anita McKeown** (UCD Earth Institute) is an interdisciplinary artist, curator, scholar and educator. Anita works in the Iveragh peninsula, Co. Kerry, across the intersection of arts, technology and social change through arts-led education and outreach, co-designing projects with local communities exploring issues such as circular economies, waste as a resource and plastic pollution.

schools and events for the general public.

We are proud partners on the UCD Parity Studios artist-in-residence programme, and are currently working in collaboration with artist Mark Clare and Dun Laoghaire Rathdown County Council exploring biodiversity loss with local communities.

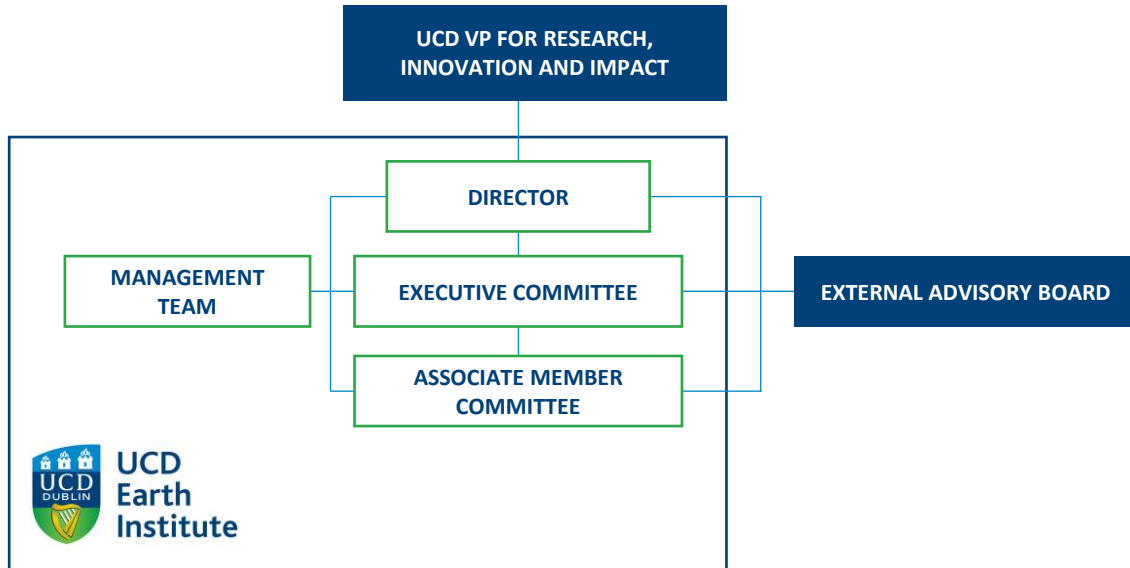




# APPENDICES

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## Appendix A Institute structure and governance



### **Institute Executive Committee**

The Director, Deputy Director, theme/dimension leads, chair of the Associate Member Committee and Management Team constitute the Institute Executive Committee, the primary decision-making body of the Institute which meets twice a trimester.

### **External Advisory Board**

The Institute External Advisory Board provides strategic advice for the Earth Institute to support it in achieving its objectives; and supports and champions its activities. It combines representation from academia, state/government agencies, enterprise, and civil society/third sector.

### **Associate Member Committee**

The Institute Associate Member Committee, established in 2020, provides strategic advice to promote and support the needs of UCD postgraduate, postdoctoral, technical and support staff involved in environmental research.



**Director** Tasman Crowe, School of Biology and Environmental Science

**Deputy Director** Emma Teeling, School of Biology and Environmental Science

### Theme leadership *(June 2021)*

**Water** Mary Kelly Quinn, School of Biology and Environmental Science  
Fiachra O’Loughlin, School of Civil Engineering

**Climate** Frank McDermott, School of Earth Sciences  
Conor Sweeney, School of Mathematics and Statistics

**Ecosystems and Evolution** Jon Yearsley, School of Biology and Environmental Science  
Sónia Negrão, School of Biology and Environmental Science

**Crops for the Future** Angela Feechan, School of Agriculture and Food Science  
Rainer Melzer, School of Biology and Environmental Science

**Built and Constructed Environment** Shane Donohue, School of Civil Engineering  
Graeme Warren, School of Archaeology

**Sustainable Communities** Karen Foley, School of Architecture, Planning and Environmental Policy  
Nessa Winston, School of Social Policy, Social Work, Social Justice

**People, Work, Society** Margaret Crean, School of Education  
Donna Marshall, School of Business  
Penelope Muzanenhamo, School of Business

### Dimension leadership *(June 2021)*

**Research and Education** Championed by the Institute Director

**Policy and Governance** Andrew Jackson, Sutherland School of Law  
Eoin O’Neill, School of Architecture, Planning and Environmental Policy

**Innovation and Enterprise** Philip Crowe, School of Architecture, Planning and Environmental Policy  
Ainhoa Gonzalez, School of Geography

**Society and Engagement** Championed by the Institute management team

**Management team**

Institute Manager: Will Fitzmaurice  
Research Manager: Caitriona Devery (80% position)  
Administrator: Emily Cassidy (50% position)

**Associate Member  
Committee  
(June 2021)**

Aparajita Bannerjee, UCD College of Business; chair  
Katie Burns, UCD School of Agriculture and Food Science  
Emily Cassidy, UCD Earth Institute  
Federico Cerrone, UCD School of Biomedical and Biomolecular Science  
Caitriona Devery, UCD Earth Institute  
Caroline Dowling, UCD School of Biology and Environmental Science  
Will Fitzmaurice, UCD Earth Institute  
Shane McGuinness, UCD School of Architecture, Planning and Environmental Policy  
Tine Ningal, UCD School of Geography  
Nick Scropton, UCD School of Earth Science  
Kate de Smeth, UCD School of Geography

**External Advisory  
Board (June 2021)**

Prof. Frank Convery, UCD and Envecon, Ireland; chair  
Dr Larry O'Connell, National Economic & Social Council, Ireland; deputy chair  
Prof. Elizabeth Bomberg, University of Edinburgh, UK  
Hans Bekker, formerly National Department of Public Works, Netherlands  
Michael Ewing, formerly Environmental Pillar, Ireland  
Lucas Joppa, Microsoft, USA  
Dr Imelda Lambkin, Enterprise Ireland, Ireland  
Prof. Marie Stenseke, University of Gothenburg, Sweden





## Appendix B Membership

The UCD Earth Institute recognises the benefits of a large membership of committed environmental researchers from across the spectrum of disciplines in UCD. Many of its activities are geared towards establishing and maintaining a diverse and vibrant community of researchers, such that connections can be formed and collaborative relationships developed, enabling rapid multi-disciplinary responses to emerging challenges and opportunities.

There are three levels of membership of the Institute:

- Full membership:** Open to all research-active academic staff working in environment/sustainability-related research in UCD.
- Associate membership:** Open to all postgraduate, postdoctoral, technical and administrative support staff working in environment/sustainability-related research in UCD
- Affiliate membership:** Open to visiting academics and others not employed by UCD to recognise contribution to the Institute

Concise application forms are available on the Institute website and are reviewed by all three members of the membership committee, usually within two weeks of submission. As of June 2021, the Institute has 138 Members, drawn from 23 of the University's 37 Schools, and an Associate Membership of over 260.

**Searchable database of Institute members available at [www.ucd.ie/earth/ourmembers](http://www.ucd.ie/earth/ourmembers)**

### Listing of current members by UCD College and School

#### College of Arts and Humanities

School of English, Drama and Film      Hannah Boast, John Brannigan, Sharae Deckard, Treasa de Loughry

School of History      Jennifer Keating

#### College of Business

Don Bredin, John Cotter, Paul Ennis, Andreas Hoepner, Donna Marshall, Gianluca Miscione, Penelope Muzanenhamo, David Nyaluke

#### College of Engineering and Architecture

School of Architecture, Planning and Environmental Policy      Finbarr Brereton, Craig Bullock, Peter Clinch, Philip Crowe, Dermot Foley, Karen Foley, Luke Kelleher, Paul Kenny, Oliver Kinnane, Mick Lennon, Orla Murphy, Eoin O'Neill, Francesco Pilla, Liana Ricci, Ellen Rowley, Paula Russell, Mark Scott, Brendan Williams

School of Biosystems and Food Engineering	Tom Curran, Nick Holden, Sharon O'Rourke
School of Chemical and Bioprocess Engineering	Don Macelroy, Ravindranathan Thampi
School of Civil Engineering	Aoife Ahern, Michael Bruen, Páraic Carroll, Sarah Cotterill, Shane Donohue, Arturo Gonzalez, Jennifer Keenahan, Daniel McCrum, Ciaran McNally, Eugene O'Brien, Fiachra O'Loughlin, John O'Sullivan, Rui Teixeira, Yaqian Zhao
School of Electrical and Electronic Engineering	Declan Delaney, John Sheridan
School of Mechanical and Materials Engineering	Donal Finn, Pezhman Ghadimi, Alojz Ivankovic, Anita McKeown
<b>College of Health and Agricultural Sciences</b>	
School of Agriculture and Food Science	Julie Ballweg, Angela Feechan, Kevin McDonnell, Barry McMahon, Paul Murphy, Olaf Schmidt, Dara Stanley, Brian Tobin, Saoirse Tracy
School of Public Health, Physiotherapy and Sports Science	Conor Buggy
<b>College of Science</b>	
School of Biology and Environmental Science	Tom Bolger, Jens Carlsson, Tancredi Caruso, Simone Ciuti, Grace Cott, Tasman Crowe, Fiona Doohan, Evelyn Doyle, Elke Eichelmann, John Finarelli, Tamara Hochstrasser, Joanna Kacprzyk, Adam Kane, Mary Kelly Quinn, Paul McCabe, Rainer Melzer, Sónia Negrão, Carl Ng, Bruce Osborne, Florence Renou Wilson, Emma Teeling
School of Biomolecular and Biomedical Science	Wim Meijer, Cormac Murphy, Kevin O'Connor
School of Chemistry	James Sullivan
Computer Science	Michela Bertolotto, Soumyabrata Dev, Gregory O'Hare, Shen Wang
Earth Sciences	Conrad Childs, Rónadh Cox, Stephen Daly, William Foster, Peter Haughton, Sam Kelley, Tom Manzocchi, Frank McDermott, Julian Menuge, Patrick Orr, John Walsh

Mathematics and Statistics	Xuefeng Cui, Frederic Dias, James Herterich, Conor Sweeney
<b>College of Social Sciences and Law</b>	
School of Archaeology	Meriel McClatchie, Barry Molloy, Brendan O'Neill, Aidan O'Sullivan, Jessica Smyth, Graeme Warren
School of Geography	Christine Bonnin, Jacky Croke, Colman Gallagher, Bradley Garrett, Ainhoa Gonzalez, Gerald Mills, Niamh Moore Cherry, Tobi Morakinyo, Jonathan Turner
School of Education	Margaret Crean, Jennifer Symonds
Sutherland School of Law	Joanne Blennerhassett, Andrew Jackson, Suzanne Kingston
School of Politics and International Relations	Patrick Paul Walsh
School of Social Policy, Social Work and Social Justice	Orla Kelly, Marie Moran, Nessa Winston





## Appendix C Strategic Priority projects, 2018-2020

The Earth Institute Strategic Priority Support Mechanism was first launched in 2018 with the aim of stimulating interdisciplinary activity across the Institute, the University and beyond, in the area of environmental and sustainability research and its cognate disciplines. Funding up to €10,000 is awarded to 2-4 multi-disciplinary teams per annum, supporting non-research costs for targeted projects that are topical, achievable and impactful and typically run for 12-18 months.

The Mechanism is open to Institute members, associate members, affiliate members and non-members, and applications are reviewed by a panel comprising the Institute Director, two members of the Institute Executive Committee, the Institute Manager and a panel member external to the Institute.

### Earth Institute Strategic Priority projects 2020

#### **Measuring Sustainable Actions at Community Level (Community SDG Dashboard)**

Community SDG Dashboard aims to create an academic-community partnership between the UCD Earth Institute researchers and the Dundrum 2030 community group to foster social engagement for systematically monitoring the implementation of the Sustainable Development Goals (SDGs) at the local level.

It seeks to develop an academic-community partnership with Dundrum 2030, to: 1) facilitate and influence national Sustainable Development Goals (SDGs) monitoring, by developing a UN-aligned local indicator set and building the capacity of communities to measure progress in the achievement of SDGs; and 2) track progress on the ground towards the achievement of SDGs. The outputs will ensure replicability in local monitoring efforts by creating an indicator-led toolkit and supporting dashboard for communities. Community SDG Dashboard will address current local data and knowledge gaps on the achievement of SDGs, feed into national and UN reporting mechanisms, and trigger similar actions in other communities.

Community SDG Dashboard is led by Ainhua Gonzalez Del Campo (School of Geography).

#### **Re-EcoNet: Reconstructing Ecological Networks to predict systemic crisis**

Network systems provide humans with essential services but can crash dramatically, a case in point being the financial collapse in 2008. Can these crises be predicted before it is too late? The answer is yes, and the key tool is network theory. Re-EcoNet is an UCD based multidisciplinary collaboration between theoretical ecologists, physicists, geomorphologists, and biologists who use network science to discover the processes that control the stability and resilience of ecosystems. The overarching goal is the formulation of a research platform to develop large scale projects and a COST Action focusing on the detection of the onset of systemic crises in ecosystems under global change threats.

Re-EcoNet is led by Tancredi Caruso (School of Biology and Environmental Science).

## Earth Institute Strategic Priority projects 2019

### Centre for Irish Towns (CfIT)

The Centre for Irish Towns (CfIT) is a transdisciplinary centre for research and collaboration in UCD focused on the towns of the island of Ireland. CfIT is led by Orla Murphy and Philip Crowe who have been involved with research and advocacy relating to towns over many years, most recently through direct involvement with the Venice Biennale 2018 [Free Market](#) National Tour and the Government's [Town Centre Living Initiative](#).

Irish towns are ideally placed to facilitate sustainable development in terms of social inclusion, environmental sustainability and economic development. However, they are generally in decline and face multiple challenges, including significant gaps in data and knowledge, a lack of investment in the physical fabric and infrastructure and a lack of coherent, evidence-based approaches to governance, policy and funding. UCD and the Earth Institute are uniquely placed to establish CfIT due to the breadth of relevant expertise and opportunities for network building and interdisciplinary activity, maximising the societal impact of research outputs, and generating public awareness and engagement.

CfIT is led by Philip Crowe (School of Architecture, Planning and Environmental Policy and School of Civil Engineering) and Orla Murphy (School of Architecture, Planning and Environmental Policy).

### DIVERSICROP

Climate change impacts food security. To minimize such impact, we need to diversify crop production and to sustainably produce nutritious food. We believe that underutilised crops produced in Europe have the potential to supply key nutrients and improve diets and risk of diet-related diseases.

DIVERSICROP is a UCD consortium that aims to: 1) encourage partners from strategic areas to explore such changes, namely from crop sciences, culture and society, nutritional impact and policy-making; and 2) Develop and submit a COST action focused on diversification of crop production in Europe.

DIVERSICROP is led by Meriel McClatchie (UCD School of Archaeology) and Sónia Negrão (UCD School of Biology and Environmental Science).



## **HempHub**

Cannabis sativa (hemp and marijuana) is an extremely versatile plant that has the potential to increase the sustainability and resource efficiency of modern agriculture. At the same time, it is a high-value yet controversial crop used to produce medicinal compounds.

HempHub is working to establish a knowledge hub focused on hemp research at UCD and other Irish institutions. We aim to establish a cross-disciplinary group of researchers that jointly focuses on investigating the environmental, genetic, pharmacological and engineering properties of hemp as well as the societal implications of its use.

We use workshops to exchange ideas and foster interactions between researchers, invite internationally recognised hemp experts to give talks, and foster collaborations with other European and international researchers by lab visits. The research network established by HempHub will form the basis of a COST action proposal.

HempHub is led by Rainer Melzer and Antoinette Perry (both UCD School of Biology and Environmental Science).

## **Earth Institute Strategic Priority projects 2018**

### **Climate-Resilient Agri-Environmental Systems (CRAES)**

[www.ucd.ie/craes](http://www.ucd.ie/craes)

Agricultural systems are large contributors to greenhouse gas production and environmental pollution. An integrated approach is required for mitigation and the creation of climate-smart and environment-friendly sustainable agricultural systems.

The Climate-Resilient Agri-Environmental Systems (CRAES) group was formed to provide the critical mass required to address the challenges by harnessing UCD's multidisciplinary expertise through integration from broad spectrum of disciplines and engaging with national and international collaborators, stakeholders and industry to build partnerships. CRAES works to improve understanding of agricultural systems, their role in climate change and environmental degradation; and the influence of management practices and climate change on the systems themselves and the wider environment to make productive and profitable ones but also sustainable at local and global scales.

In October 2020, CRAES hosted the International Symposium on Climate Resilient Agri Environmental Systems, with an opening address from Eamon Ryan TD, Minister for Minister for the Environment, Climate, Communications and Transport.

CRAES is led by Ibrahim Khalil, UCD School of Biology and Environmental Science

## **ECOBROKER: co-producing knowledge between practitioners and researchers to address complex societal problems**

[ecobroker.ucd.ie](http://ecobroker.ucd.ie)

ECOBROKER aims to develop a knowledge exchange platform and related communication tools under the UNESCO Man and the Biosphere Programme (MAB) programme to effectively link research with practice in environmental policy, management and governance. The aim of the platform is to create a systematic and accessible means for practitioners and researchers to exchange knowledge on priority questions of societal importance which will feed into best practices, research and teaching. By improving communication between stakeholders, the platform will support development of interdisciplinary activity and strengthen and create connections which help maximise impact of the research outputs and tackle complex challenges and initiatives such the Sustainable Development Goals.

Ecobroker is led by Tamara Hochstrasser, UCD School of Biology and Environmental Science..







## Appendix D Small Responsive Funding Scheme, funded projects 2018-2020

The Earth Institute Small Responsive Funding Scheme was introduced in autumn 2018 and provides small awards to Earth Institute Members, Associate Members and Affiliate Members for activities that are beneficial to the applicant and wider Institute community, including contributions to the costs for travel of the applicant, a team member or a visitor. The scheme complements the existing Institute Strategic Priority Support Mechanism, providing regular, smaller awards throughout the year, with rapid decisions to accommodate opportunities as they arise.

The scheme provides support of €200-700 for activities where other funding is either not available or where the timing of funding calls do not fit with the timeline of the proposed activity. Applications are reviewed by two members of the Institute Executive Committee and the Institute Manager.

<b>Name</b>	<b>Status</b>	<b>School/Other</b>	<b>Activity and outcomes</b>
<b>Dr Bruno de Andrade</b>	Associate Member	School of Architecture, Planning and Environmental Policy	Support for travel expenses for month long visit to UCD of Prof. Carlos Queiroz, Geography Department at the Federal University of Espírito Santo (UFES), Brazil. While in Dublin, Prof. Queiroz delivered two lectures, ran two geogames workshops, and hosted a Minecraft outreach event for 9-12 year olds in Santry, Dublin.
<b>Dr Nicole Beisiegel</b>	Associate Member	School of Mathematics and Statistics	Support for travel expenses for research visit to the Department of Meteorology at the University of Reading, UK (Host: Prof Paul D Williams) to work on the numerical software Quagmire v1.3. The collaboration resulted in software that can be used to simulate a multi-layer rotating annulus, and a still ongoing collaboration. For the future it is envisioned that this software will be used as a basis for a scientific publication.
<b>Conor Bracken</b>	Associate Member	School of Agriculture and Food Science	Support travel costs for visit to the Institute of Plant Ecology at Justus Liebig University (JLU), Giessen, Germany to provide training on a new N2O isotopomer analytical technique and present EI research outputs while building collaborative contacts in the area of greenhouse gas monitoring and N isotope studies.
<b>Katherine Burns</b>	Associate Member	School of Agriculture and Food Science	Support for a science communication event, "Get Buzzed about Bees!" The event/workshop has been organised in collaboration with the Stanley Ecology Lab and Cultivate, an Irish NGO, and was scheduled to take place at Electric Picnic 2020 as part of the Global Green Eco-Village, but has been postponed for a year.
<b>Assoc. Prof. Jens Carlsson</b>	Member	School of Biology and Environmental Science	Support for travel costs for visit to Namibia to assess two field research stations for prospective new collaboration between UCD and university contacts in Namibia.
<b>Dr Simone Ciuti</b>	Member	School of Biology and Environmental Science	Sponsorship and support of the EuroDEER XI international workshop, Dublin, June. The workshop generated in two high impact publications and led to a successful Department of Agriculture, Food and Marine funding application.

<b>Name</b>	<b>Status</b>	<b>School/Other</b>	<b>Activity and outcomes</b>
<b>Dr Pezhman Ghadimi</b>	Member	School of Materials and Mechanical Engineering	Sponsorship of 2020 International Conference on Resource Sustainability (icRS), planned to be held in University College Dublin and chaired by Dr Ghadimi. The conference has been postponed to 2021.
<b>Sophia Henegan</b>	Associate Member	UCD Biological Society	Guest lecture at the UCD Biological Society by Dr Beth Shapiro, University of California, Santa Cruz
<b>Sanni Hintikka</b>	Associate Member	School of Biology and Environmental Science	Support for travel costs of a working visit to Pwani University (PU) in Kenya, with whom UCD has a Memorandum of Agreement (MoA). Visit to collect marine environmental (e)DNA samples in Watamu National Marine Park (Kenya) for metabarcoding.
<b>Clifton Lewis</b>	Associate Member	UCD Biological Society	Sponsorship of UCD Women in Biology event, March 2019.
<b>Cliodhna Martin</b>	Associate Member	School of Geography/ School of Education	Support for travel expenses research visit to Melbourne Social Equity Institute (University of Melbourne) and develop research links related to interdisciplinary approaches to child-friendly cities.
<b>Dr Penelope Muzanenhamo</b>	Member	School of Business	Support for travel expenses of guest lecturer at 'Place, Belongingness, and International Entrepreneurship in Africa: Impact on Sustainable Development' workshop hosted in UCD.
<b>Dr Fiachra O'Loughlin</b>	Member	School of Civil Engineering	Support for travel expenses to the University of Strathclyde to prepare an EPSRC-SFI research proposal in collaboration with researchers from University of Newcastle looking at the occurrence of compound event in sub-seasonal forecasts with the aim of forecasting them.
<b>Dr Saoirse Tracy</b>	Member	School of Agriculture and Food Science	Contribution towards membership fees for UCD to continue to be a member of the International Plant Phenotyping Network (IPPN), 2018 and 2019. Membership has strengthened UCD ties with Teagasc and Trinity College Dublin, and has three successful applications to funders including Science Foundation Ireland and the Irish Research Council, with a number of further applications pending.
<b>Dr Sharon O'Rourke</b>	Member	School of Biosystems and Food Engineering	Sponsorship of SoilFest 2019 event relaunching Soil Science Society of Ireland. Public event in Dublin city centre with contributions from scientists and artists who work with soil.
<b>Alison O'Reilly</b>	Associate Member	School of Agriculture and Food Science	Support for attendance at Linear Mixed Effects Models and GLMM with R-INLA event hosted by Highland Statistics Ltd in the University of Ghent.
<b>Aisling Reilly</b>	Associate Member	School of Agriculture and Food Science	Support for travel expenses to Lublin, Poland, to complete screening experiments with colleagues at the Institute of Plant Genetics, Breeding and Biotechnology at the University of Life Sciences.
<b>Dr Anna Tiley</b>	Associate Member	School of Agriculture and Food Science	Support for attendance at chronobiology meeting at MRC Laboratory of Molecular Biology, UK, to develop collaborations.
<b>Prof. Graeme Warren</b>	Member	School of Archaeology	Support for costs of fieldtrip as part of workshop to develop collaborative international and interdisciplinary projects examining the origins of prehistoric quarrying in Mesolithic and Neolithic Europe, hosted by UCD School of Archaeology. Resulting from this, a collaboration with University of Stavanger examining the social impact of the last major tsunami in Northern Europe on hunter-gatherer communities in Norway and Scotland received 4 years of funding from the Norwegian Research Council.
<b>Dr Hannah White</b>	Associate Member	School of Biology and Environmental Science	Sponsorship of the annual Soapbox Science event in Dublin, a public outreach platform that promotes women working in science and the research they do. The 2020 event moved online as result of Covid-19.





## Appendix E Activities and Events, 2018-2020

The Institute organises, supports and sponsors a range of activities, including workshops linked to Institute research themes, seminars, lectures and outreach events, as well as a programme of training and career development sessions.

### E1 Thematic workshops

Organised over the course of 2018-2020 were a series of thematic workshops to bring together researchers from across the University who are working on complementary areas to identify potential collaborations and funding opportunities. It is planned that these will continue to run once a year.

Date	Theme	Host
25 Sep 2018	Improving interdisciplinarity to better capture the human perspective	Tasman Crowe, director, Earth Institute
12 Dec 2018	Interdisciplinary environmental research at UCD	Tasman Crowe, director, Earth Institute
9 Apr 2019	Water	Mary Kelly- Quinn, School of Biology and Environmental Science; Fiachra O'Loughlin, School of Civil Engineering
11 Apr 2019	Ecosystems and Evolution	Olaf Schmidt, School of Agriculture and Food Science; Jon Yearsley, School of Biology and Environmental Science
25 Apr 2019	Sustainable Communities	Karen Foley, School of Architecture, Planning and Environmental Policy; Nessa Winston, School of Social Policy, Social Work and Social Justice
5 July 2019	Climate	Frank McDermott, School of Earth Sciences; Conor Sweeney, School of Mathematics and Statistics
15 Oct 2019	Policy and Governance	Andrew Jackson, School of Law; Eoin O'Neill, School of Architecture, Planning and Environmental Policy
10 Dec 2020	Sustainable Communities	Karen Foley, School of Architecture, Planning and Environmental Policy; Nessa Winston, School of Social Policy, Social Work and Social Justice
11 Dec 2020	Climate	Frank McDermott, School of Earth Sciences; Conor Sweeney, School of Mathematics and Statistics
14 Dec 2020	Ecosystems and Evolution	Sónia Negrão and Jon Yearsley, both School of Biology and Environmental Science
15 Dec 2020	Water	Mary Kelly- Quinn, School of Biology and Environmental Science; Fiachra O'Loughlin, School of Civil Engineering
16 Dec 2020	Built and Constructed Environment	Shane Donohue, School of Civil Engineering; Graeme Warren, School of Archaeology
17 Dec 2020	Crops for the Future	Angela Feechan, School of Agriculture and Food Science; Rainer Melzer, School of Biology and Environmental Science

## E2 UN Sustainable Development Goal Research Seminar Series

One of the flagship activities for 2019 and into early 2020 was a seminar series focusing on UCD research that is contributing to the UN Sustainable Development Goals, delivered with support from the UCD College of Social Sciences and Law, the UCD Institute for Discovery and UCD School of Politics and International Relations.

Each of the Goals was addressed in turn, with contributions from three UCD researchers from different disciplines as well as an external speaker with relevant interests, drawn from other academic institutions, government, industry and charities to forge new links in tackling the Goals.

The seminars have provided an opportunity for the Institute to collaborate with a range of Schools, Colleges and Research Centres from across the University and take a leading role in aligning UCD's activities with the Goals.

Eight of the seminars were followed by an additional workshop in which participants explored opportunities for collaboration and funding linked to the Goal.

Date	#	Goal title	Co-host	Speakers
12 Feb 2019	1	End poverty in all its forms everywhere	UCD College of Social Sciences & Law	Dr Tricia Keilthy, Society of St Vincent de Paul; Dr Ronan McDermott, UCD School of Agriculture and Food Science; Prof. Patrick Paul Walsh, School of Politics & International Relations (chair); Assoc. Prof. Nessa Winston, UCD School of Social Policy, Social Work & Social Justice
19 Feb 2019	2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	UCD Institute of Food & Health	Prof. Jim Kinsella, School of Agriculture and Food Science; Prof. Dolores O'Riordan, UCD VP for Global Engagement, director, UCD Institute of Food & Health (chair); Dr Aifric O'Sullivan, School of Agriculture and Food Science; Paul Wagstaff, Self Help Africa
26 Feb 2019	3	Ensure healthy lives and promote well-being for all ages	UCD Conway Institute	Dr Jakub Gajewski, Royal College of Surgeons in Ireland; Dr Virginie Gautier, UCD Centre for Research in Infectious Diseases; Prof. Catherine Godson, UCD School of Medicine (chair); Ms Helen Henegan, St Vincent's University Hospital
12 Mar 2019	4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	UCD School of Education	Dr Conor Buggy, School of Public Health, Physiotherapy & Sports Science; Dr Stephan Koeppel, School of Social Policy, Social Justice & Social Work; Prof. Ciaran Sugrue, School of Education; Dr Jennifer Symonds, School of Education
28 Mar 2019	5	Achieve gender equality and empower all women and girls	UCD Centre for Gender, Feminisms and Sexualities	Ursula Barry, UCD Centre for Gender, Feminisms and Sexualities (chair); Dr Niamh Kingston, School of Agriculture and Food Science; Dr Monica O'Connor, independent academic/activist; Prof. Pat O'Connor, University of Limerick
9 April 2019	6	Ensure availability and sustainable management of water and sanitation for all		Charlie Coakley, Irish Water; Assoc. Prof. Mary Kelly-Quinn, School of Biology & Environmental Science; Prof. Wim Meijer, School of Biomolecular & Biomedical Sciences; Niall Roche, WASH

<b>Date</b>	<b>#</b>	<b>Goal title</b>	<b>Co-host</b>	<b>Speakers</b>
<b>23 April 2019</b>	7	Ensure access to affordable, reliable, sustainable and modern energy for all	UCD Energy Institute; iCrag SFI Research Centre	Dr Maeve Boland, School of Earth Sciences (chair), Prof. Murray Hitzman, iCrag SFI Centre; Dr James McAteer, Gavin & Doherty Geosolutions; Dr Geertje Schuitema, School of Business
<b>14 May 2019</b>	8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	UCD Geary Institute for Public Policy	Dr Micheal Collins, School of Social Policy, Social Work & Social Justice; Prof. Roland Erne, School of Business; Elish Kelly, Economic and Social Research Institute; Prof. Philip O'Connell, director, UCD Geary Institute for Public Policy (chair)
<b>22 Oct 2019</b>	9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		Dr Shane Donohue, School of Civil Engineering (chair); Pat Maher, Transport Infrastructure Ireland; Dr Beatriz Martinez-Pastor, School of Civil Engineering; Prof. Aisling Reynolds-Feighan, School of Economics
<b>8 Oct 2019</b>	10	Reduce inequality within and among countries		Dr Mathew Creighton, School of Sociology; Dr Hasheem Mannan, School of Nursing, Midwifery and Health Systems; Dr Emily Mark-Fitzgerald, School of Art History and Cultural Policy; Prof. Colin Scott, Dean of College of Social Sciences and Law, UCD VP for Equality, Diversity & Inclusion
<b>30 Jan 2020</b>	11	Make cities and human settlements inclusive, safe, resilient and sustainable		Dr Karen Foley, School of Architecture, Planning and Environmental Policy; Alison Harvey, Heritage Council; Prof. Gerald Mills, School of Geography; Prof. Michelle Norris, School of Social Policy, Social Work and Social Justice; Assoc Prof. Nessa Winston, School of Social Policy, Social Work and Social Justice
<b>16 Oct 2019</b>	12	Ensure sustainable consumption and production patterns	BEACON SFI Bioeconomy Research Centre	Prof. Kevin O'Connor, School of Biomolecular and Biomedical Science, director, BEACON SFI Bioeconomy Research Centre (chair)
<b>28 Nov 2019</b>	13	Take urgent action to combat climate change and its impacts		Barry Andrews, MEP; Dr Andrew Jackson, School of Law (chair); Aideen O Dochartaigh, School of Business; Sadhbh O'Neill, Climate Case Ireland
<b>18 Nov 2019</b>	14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development		Dr Jens Carlsson, School of Biology and Environmental Science; Prof. Tasman Crowe School of Biology and Environmental Science (chair); Dr Anita McKeown, School of Materials and Mechanical Engineering; Ella McSweeney, RTE/ <i>the Guardian</i>
<b>26 Nov 2019</b>	15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss		Prof. Tom Bolger, School of Biology and Environmental Science; Dr Adam Kane School of Biology and Environmental Science; Prof. Suzanne Kingston, School of Law; Dr Jon Yearsley School of Biology and Environmental Science
<b>20 Nov 2019</b>	16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	UCD School of Politics and International Relations	David Donoghue, former Permanent Representative of Ireland to the UN; Prof. Colin Scott, Dean of College of Social Sciences and Law, UCD VP for Equality, Diversity and Inclusion; Dr Dawn Walsh, School of Politics & International Relations; Prof. Patrick Paul Walsh, School of Politics & International Relations (chair); Sinead Walsh, EU Ambassador to South Sudan



## E3 Other seminars, lectures and workshops

Date	Co-organiser	Title; speaker
16 Apr 2018		End Plastic Pollution; Tanja Narancic, School of Biomolecular and Biomedical Sciences, SORCHA Kavanagh, Conscious Cup Campaign; Mindy O'Brien, VOICE
10 Oct 2018	Norwegian Embassy, An Taisce Climate Ambassador programme	Climate Change: The Empirical Strikes Back; Else Berit Eikeland, Norwegian Ambassador to Ireland; Michael John O'Mahony, An Taisce; Peter Clinch, UCD School of Architecture, Planning and Environmental Policy; Conor Sweeney, UCD School of Mathematics and Statistics
23 Oct 2018	UCD School of Geography	Strategic Environmental Assessment: How it can be effective in supporting sustainable development; Prof. Riki Therivel, Oxford Brookes University and Levett-Therivel Sustainability Consultants
13 Feb 2019	UCD Centre for Business and Society	Gender Quotas: the Holy Grail to Smashing the Glass Ceiling?
11 Apr 2019	UCD School of Biology and Environmental Science	Citizen Science and the empowerment of the individual towards a shared goal of healthy and biodiverse seas; Dr Jane Delany, Newcastle University, UK
4 Oct 2019	UCD EU Research Office	Horizon 2020 funding opportunities in Climate and Food
7 Nov 2019	UCD Research Institutes	Climate Change, Literature, and the Future of Memory; Dr Rick Crownshaw, Goldsmiths College, UK
22 Nov 2019	UCD Environmental Policy	Tipping points in the climate system and the economics of climate change; Dr Thomas Stoerk, LSE, UK
28 Nov 2019	Prof. Kevin O'Connor, School of Biomolecular and Biomedical Science	EU Mission on Adaptation to Climate Change
4 Dec 2019	UCD Energy Institute	UCD Smart Cities and Communities Symposium
5 Dec 2019	UCD Environmental Policy	Carbon taxes: a powerful tool in the fight against climate change; Prof. Thomas Sterner, Gothenburg University, Sweden
16 Jan 2020	UCD Centre for Irish Towns Strategic Priority Project	Earth Institute Showcase 2020: Workshop: Building a research community for Irish Towns
16 Jan 2020	Ecobroker Strategic Priority Project	Earth Institute Showcase 2020: Workshop: Working with local government and practitioners
16 Jan 2020		Earth Institute Showcase 2020: Plenary: Research for a sustainable future
16 Jan 2020	HempHub Strategic Priority Project	Earth Institute Showcase 2020: Workshop: Cannabis Sativa, the plant with a thousand faces
16 Jan 2020	UCD School of Physics	Earth Institute Showcase 2020: Workshop: Using Earth Observation satellite data
26 Feb 2020	UCD Geary Institute	Plotting the Future public lecture series: Climate change, inequality and sustainable wellbeing, Ian Gough, London School of Economics
8 Mar 2020		Workshop: Making a Difference: Developing social enterprise opportunities from your research, with talk from Ruairi McKiernan, social entrepreneur, hosted by Philip Crowe, School of Architecture, Planning and Environmental Policy, and Ainhoa Gonzalez, School of Geography
24 Apr 2020		Public lecture: Prof. Stephen Heard, University of New Brunswick, chaired by Rainer Melzer, School of Biology and Environmental Science
7 May 2020		Workshop: Deirdre Mortell, CEO, Social Innovation Fund Ireland, hosted by Philip Crowe, School of Architecture, Planning and Environmental Policy, and Ainhoa Gonzalez, School of Geography

<b>Date</b>	<b>Co-organiser</b>	<b>Title; speaker</b>
<b>14 May 2020</b>	UCD School of Geography	Public lecture: Prof. Danny Dorling, University of Oxford, UK, and panel discussion chaired by Jacky Croke, School of Geography, Larry O'Donnell, National Economic and Social Council, Bradley Garrett, School of Geography, Marie Moran, School of Social Policy, Social Work and Social Justice
<b>16 Jun 2020</b>	UCD Institute for Discovery	Zoom for Thought: Pádraic Fogarty, Irish Wildlife Trust, interviewed by Patricia Maguire, Institute for Discovery
<b>13 Aug 2020</b>	UCD School of Geography	Book launch: Bunker, Bradley Garrett, School of Geography, and panel discussion with Kezia Barker, Birkbeck College University of London, Ian Klinke, University of Oxford, chaired by Jacky Croke, School of Geography
<b>16 Sept 2020</b>	Fulbright Programme	Fulbright Programme information session, panel discussion with Tom Curran, School of Biosystems and Food Engineering, Patricia Kenny, School of Archaeology, Treasa de Loughry, School of English, Drama and Film, Francesco Pilla, School of Architecture, Planning and Environmental Policy
<b>10 Nov 2020</b>	UCD Research Office	IRC COALESCE Scheme, including panel discussion with Tasman Crowe, School of Biology and Environmental Science, Niamh Moore Cherry, School of Geography, Craig Bullock, School of Architecture, Planning and Environmental Policy
<b>19 Nov 2020</b>		Environment and Sustainability in the Media, panel discussion with Kayle Crosson, Green News, John Gibbons, contributor to RTE and Irish Times, Caroline O'Doherty, Irish Independent, Sylvia Thompson, Irish Times
<b>8 Dec 2020</b>	EU Office, UCD Research	Pathways to Horizon Europe – funding workshop. Including panel discussion with Tasman Crowe, School of Biology and Environmental Science, Karen Foley, Landscape Architecture, School of Architecture, Planning and Environmental Policy, Nick Holden, School of Biosystems and Food Engineering, Francesco Pilla School of Architecture, Planning and Environmental Policy
<b>17 Dec 2020</b>	UCD Research Institutes, UCD Biological Society	Public lecture and panel discussion: Prof. Richard Thompson, University of Plymouth, (panel) Noreen O'Meara, University of Surrey, Tancredi Caruso, School of Biology and Environmental Science, Treasa de Loughry, School of English, Drama and Film

## **E4 Institute coffee mornings**

A staple of the Institute's activities is a weekly coffee morning which brings the membership together in an informal setting over tea and cake, with a short presentation each week from an Institute member or guest speaker, and provides an opportunity for members to meet and make new connections. The coffee mornings attract a regular attendance of 40-50 people and have been central to developing a strong sense of community in the Institute.

<b>Date</b>	<b>Speaker(s)</b>
<b>16 Nov 2017</b>	Jon Yearsley, School of Biology and Environmental Science
<b>23 Nov 2017</b>	Philip Crowe, Aoife Corcoran, SpaceEngagers
<b>6 Dec 2017</b>	Finbarr Brereton, Eoin O'Neill, School of Architecture, Planning and Environmental Policy
<b>25 Jan 2018</b>	Tamara Hochstrasser, School of Biology and Environmental Science
<b>30 Jan 2018</b>	Ainhoa Gonzalez, School of Geography

<b>Date</b>	<b>Speaker(s)</b>
<b>8 Feb 2018</b>	Andrew Parnell, School of Mathematics and Statistics
<b>22 Feb 2018</b>	Kevin O'Connor, School of Biomolecular and Biomedical Sciences, BiOrbic Bioeconomy Research Centre
<b>8 Mar 2018</b>	Kevin McDonnell, School of Agriculture and Food Science
<b>15 Mar 2018</b>	Angela Feechan, School of Agriculture and Food Science
<b>29 Mar 2018</b>	Lars Jermiin, Australian National University
<b>5 Apr 2018</b>	Graeme Warren, School of Archaeology
<b>12 Apr 2018</b>	Bruce Osborne, School of Biology and Environmental Science
<b>26 Apr 2018</b>	Frederic Dias, School of Mathematics and Statistics
<b>3 May 2018</b>	Paddy Orr, School of Earth Science
<b>10 May 2018</b>	John Brannigan, Frances Ryfield, School of English, Drama and Film; Tasman Crowe, David Cabana, School of Biology and Environmental Science
<b>17 May 2018</b>	Niamh Moore Cherry, School of Geography
<b>31 May 2018</b>	Conor Sweeney, School of Mathematics and Statistics
<b>7 June 2018</b>	Jens Carlsson, School of Biology and Environmental Science
<b>21 June 2018</b>	Shane Donohue, Civil Engineering
<b>28 June 2018</b>	Jon Yearsley, School of Biology and Environmental Science
<b>6 Sep 2018</b>	Tasman Crowe, director, Earth Institute
<b>13 Sep 2018</b>	Fiachra O'Loughlin, School of Civil Engineering
<b>20 Sep 2018</b>	Aggie Georgopoulou, School of Earth Science
<b>27 Sep 2018</b>	Adam Kane, School of Biology and Environmental Science
<b>4 Oct 2018</b>	Brian Tobin, School of Agriculture and Food Science
<b>11 Oct 2018</b>	James Herterich, School of Mathematics and Statistics
<b>18 Oct 2018</b>	Wim Meijer, School of Biomolecular and Biomedical Science
<b>25 Oct 2018</b>	Barry McMahon, School of Agriculture and Food Science
<b>1 Nov 2018</b>	Philip Crowe, Aoife Corcoran, Ecostructure project
<b>8 Nov 2018</b>	Saoirse Tracy, School of Agriculture and Food Science
<b>15 Nov 2018</b>	Paul McCabe, School of Biology and Environmental Science
<b>22 Nov 2018</b>	Sónia Negrão, School of Biology and Environmental Science
<b>29 Nov 2018</b>	Patricia Maguire, UCD Institute for Discovery
<b>6 Dec 2018</b>	Ciaran McNally, School of Civil Engineering
<b>24 Jan 2019</b>	Dara Stanley, School of Agriculture and Food Science
<b>31 Jan 2019</b>	Meriel McClatchie, School of Archaeology
<b>7 Feb 2019</b>	Rónadh Cox, Visiting Professor, Williams College, USA
<b>21 Feb 2019</b>	Nicole Beisiegel, School of Mathematics and Statistics & Anna Tiley, School of Agriculture and Food Science
<b>28 Feb 2019</b>	Gerald Mills, School of Geography
<b>7 Mar 2019</b>	Karen Foley, School of Architecture, Planning and Environmental Policy
<b>14 Mar 2019</b>	Ronan Wall, School of Physics
<b>21 Mar 2019</b>	Mary Kelly-Quinn, School of Biology & Environmental Science
<b>28 Mar 2019</b>	Jacky Croke, School of Geography
<b>4 Apr 2019</b>	Aideen O'Dochartaigh & Orlagh Reynolds, School of Business
<b>18 Apr 2019</b>	Rainer Melzer, School of Biology & Environmental Science
<b>25 Apr 2019</b>	Jessica Smyth, School of Archaeology
<b>2 May 2019</b>	Emma Teeling, School of Biology & Environmental Science
<b>9 May 2019</b>	Frank McDermott, School of Earth Science
<b>16 May 2019</b>	Paul Murphy, School of Agriculture and Food Science
<b>23 May 2019</b>	Simone Ciuti, School of Biology & Environmental Science
<b>12 Sep 2019</b>	Anita McKeown, School of Material and Mechanical Engineering
<b>19 Sep 2019</b>	Julie Ballweg, School of Agriculture and Food Science
<b>26 Sep 2019</b>	Penelope Muzanenhamo, School of Business



<b>Date</b>	<b>Speaker(s)</b>
<b>3 Oct 2019</b>	Sharon O'Rourke, School of Biosystems and Food Engineering
<b>10 Oct 2019</b>	Joanna Kacprzyk, School of Biology & Environmental Science
<b>17 Oct 2019</b>	Barry Molloy, School of Archaeology
<b>24 Oct 2019</b>	Sam Kelley, School of Earth Science
<b>31 Oct 2019</b>	Paula Russell, School of Architecture, Planning and Environmental Policy
<b>7 Nov 2019</b>	Tom Curran, School of Biosystems and Food Engineering
<b>14 Nov 2019</b>	Grace Cott, School of Biology & Environmental Science
<b>21 Nov 2019</b>	Mick Lennon, School of Architecture, Planning and Environmental Policy
<b>28 Nov 2019</b>	James Sullivan, School of Chemistry
<b>23 Jan 2020</b>	Bruno de Andrade, School of Architecture, Planning and Environmental Policy
<b>30 Jan 2020</b>	Pezhman Ghadimi, School of Mechanical and Materials Engineering
<b>6 Feb 2020</b>	Oliver Kinnane, School of Architecture, Planning and Environmental Policy
<b>13 Feb 2020</b>	Florence Renou-Wilson, School of Biology and Environmental Science
<b>20 Feb 2020</b>	Peter Haughton, School of Earth Sciences
<b>27 Feb 2020</b>	Carlos Queiroz, Universidade Federal do Espírito Santo – UFES, Brazil
<b>5 Mar 2020</b>	Fatemeh Golpayegani, School of Computer Science
<b>12 Mar 2020</b>	Soumyabrata Dev, School of Computer Science
<b>19 Mar 2020</b>	Tasman Crowe, School of Biology and Environmental Science
<b>26 Mar 2020</b>	Barry McMahon, School of Agriculture and Food Science
<b>2 Apr 2020</b>	Orla Murphy, School of Architecture, Planning and Environmental Policy
<b>9 Apr 2020</b>	Liana Ricci, School of Architecture, Planning and Environmental Policy
<b>16 Apr 2020</b>	Graeme Warren, School of Archaeology
<b>23 Apr 2020</b>	Tobi Morakinyo, School of Geography
<b>30 Apr 2020</b>	Kevin O'Connor, School Biomolecular and Biomedical Sciences
<b>7 May 2020</b>	Tancredi Caruso, School of Biology and Environmental Science
<b>21 May 2020</b>	Craig Bullock, School of Architecture, Planning and Environmental Policy
<b>4 June 2020</b>	Elke Eichelmann, School of Biology and Environmental Science
<b>25 June 2020</b>	Paddy Orr, School of Earth Sciences
<b>9 July 2020</b>	Andreas Hoepner, School of Business
<b>23 July 2020</b>	Fiona Doohan, School of Biology and Environmental Science
<b>20 Aug 2020</b>	Patrick Paul Walsh, School of Politics and International Relations
<b>24 Sept 2020</b>	David Nyaluke, School of Business
<b>1 Oct 2020</b>	Tancredi Caruso, School of Biology and Environmental Science
<b>8 Oct 2020</b>	Mark Clare, Earth Institute artist-in-residence
<b>15 Oct 2020</b>	Sarah Cotteril, School of Civil Engineering I
<b>22 Oct 2020</b>	Philip Crowe and Orla Murphy, School of Architecture, Planning and Environmental Policy
<b>29 Oct 2020</b>	John Walsh, School of Earth Sciences
<b>5 Nov 2020</b>	Ainhoa Gonzalez and Lyn Hagin Meade
<b>12 Nov 2020</b>	Meriel McClatchie, School of Archaeology, and Sonia Negrao School of Biology and Environmental Science
<b>19 Nov 2020</b>	Md Salauddin, School of Civil Engineering
<b>26 Nov 2020</b>	Anne Murray, Dun Laoighaire Rathdown County Council
<b>3 Dec 2020</b>	Brendan O'Neill, School of Archaeology

## E5 Other events

Date	Co-host	Title
<b>22 Mar 2018</b>		World Water Day Flash Talks
<b>17 Apr 2018</b>	UCD Schools of Agriculture and Food Science; Architecture, Planning and Environmental Policy	Campus Walk: Trees of Belfield
<b>18 Apr 2018</b>	UCD Schools of Biology and Environmental Science; Mathematics and Statistics	Campus Walk: Weather and Climate: Past, present and future
<b>18 Apr 2018</b>		Earth Week Table Quiz
<b>19 Apr 2018</b>	UCD School of Archaeology	Campus Walk: UCD Centre for Experimental Archaeology and Material Culture
<b>24 May 2018</b>	Trinity College Dublin, UCD Estates	Campus Walk: World Bee Day
<b>9 June 2018</b>	UCD Schools of Agriculture and Food Science; Archaeology; Architecture, Planning and Environmental Policy	Campus Walks: UCD Festival
<b>5 July 2018</b>		Earth Institute summer party
<b>23 July 2018</b>	Dun Laoghaire Rathdown County Council, Dublin Bay Biosphere	Marine Research Expo and Beach Clean, Killiney
<b>28 Aug 2018</b>	UCD School of Archaeology	Glendalough Archaeological Dig visit
<b>10 Oct 2018</b>	Norwegian Embassy, An Taisce, UCD Institute for Discovery	Arctic climate change photography exhibition launch
<b>6 Dec 2018</b>		Earth Institute Christmas party
<b>8 Apr 2019</b>	UCD School of Biology and Environmental Science	Campus Walk: The birds of Belfield
<b>9 Apr 2019</b>	Environmental Protection Agency	Story of Your Stuff short film competition for secondary school students national final
<b>10 Apr 2019</b>	UCD Centre for Experimental Archaeology & Material Culture; UCD Sustainable Energy Community	Campus Walk: Ancient and Modern Sustainable Technologies
<b>12 Apr 2019</b>	Environmental Science Association of Ireland	UCD Environmental Undergraduate Researcher of the Year poster competition
<b>20 May 2019</b>	UCD School of Agriculture and Food Science	Campus Walk: World Bee Day: Wild pollinators, honey bees and the All Ireland Pollinator Plan at UCD
<b>20 June 2019</b>		Earth Institute summer party
<b>12 Dec 2019</b>		Earth Institute Christmas party
<b>12 Feb 2020</b>	Coastal Communities Adapting Together project	UCD GeoGames Group workshop
<b>26 Feb 2020</b>	Coastal Communities Adapting Together project	UCD GeoGames Group workshop
<b>22 Apr 2020</b>		Early career researcher flash talks competition
<b>23 Apr 2020</b>	UCD School of Archaeology	Virtual walk: UCD Centre for Experimental Archaeology and Material Culture
<b>27 Apr 2020</b>	UCD School of Biology and Environmental Science	Virtual walk: UCD Rosemount Environmental Research Station
<b>28 Apr 2020</b>	UCD Schools of Agriculture and Food Science; Archaeology; Architecture, Planning and Environmental Policy; Biology and Environmental Science; Geography	Virtual walk: The trees of Belfield
<b>29 Apr 2020</b>	UCD School of Architecture, Planning and Environmental Policy	Virtual walk: The buildings of Belfield

## E6 Training and career development workshops

Delivered in partnership with the UCD Career Development Centre and drawing on internal and external expertise, the Training and Career Development sessions target primarily early career researchers, focusing on professional skills and are an additional opportunity for researchers from different disciplines to interact and forge new connections.

Date	Co-host	Title
6 Nov 2018	UCD Career Development Centre	Early career researcher training session: The what, how and where of career planning
13 Nov 2018		Media training for researchers
29 Nov 2018	UCD Career Development Centre	Early career researcher training session: Wellbeing for PhDs
13 Dec 2018	UCD Career Development Centre	Early career researcher training session: Networking
26 Feb 2019	UCD Innovation	Early career researcher training session: Commercialising your research - Idea on a napkin innovation workshop
20 Mar 2019	Craig Slattery, UCD Conway Institute	Early career researcher training session: Communicating your research
24 Apr 2019	BEACON SFI Bioeconomy Research Centre; Irish Universities Association	Training/career development workshop: grant writing
22 Oct 2019	UCD Career Development Centre	Early career researcher training session: Career planning for PhDs
12 Nov 2019	UCD Career Development Centre	Early career researcher training session: recognising your transferable skills and identifying your USP
13 Nov 2019	UCD Energy Institute	Media training for researchers
21 Nov 2019	UCD Michael Smurfit Graduate Business School	Careers and Skills in Sustainable Finance and Responsible Business
26 Nov 2019	UCD Career Development Centre	Early career researcher training session: networking naturally
1 Apr 2020	NovaUCD and ConsultUCD	Paths to progress: environmental innovation and consultancy workshop
9 Nov 2020		Social media for researchers 1
16 Nov 2020		Social media for researchers 2





## Appendix F Member funding successes, 2018-2020

Over the period 2018-2020, UCD Earth Institute members were awarded grants totalling over €30M in research income to UCD, indicating the value of environmental and sustainability awards to the University. These diverse awards are supported by national and international funding agencies, government departments, industry partners and charitable foundations.

### Listing of member funding awards, 2018-2020

Funder	Awardee	School / Group	Project Title
All-Technology (Ireland) Ltd	<b>Angela Feechan</b>	Agriculture and Food Science	Effect of ProCrop ISR on Resistance Gene Expression in Wheat ( <i>Triticum aestivum</i> )
Atlantic Salmon Trust	<b>Jens Carlsson</b>	Biology and Environmental Science	To investigate the application of eDNA technology in the assessment of pelagic by-catch of Atlantic salmon
British Society for Plant Pathology	<b>Fiona Doohan</b>	Biology and Environmental Science	BSPP Undergraduate Lockdown Bursary
Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior	<b>James Sullivan</b>	Chemistry	Synthesis Characterisation and Application of Heterogeneous Catalysts in the Photocatalytic Reduction of CO <sub>2</sub>
Department of Communications Climate Action & Environment	<b>Kevin McDonnell</b>	Agriculture and Food Science	Future Agricultural Management for multiple outputs on climate and rural development (LIFE Farm4More)
Department of Culture Heritage and the Gaeltacht	<b>Olaf Schmidt</b>	Agriculture and Food Science	Annelid survey Killarney National Park
Department of Housing Planning and Local Government	<b>Tasman Crowe</b>	Biology and Environmental Science	Marine Protected Area (MPA) Process Research
Department of Housing Planning and Local Government	<b>Mary Kelly-Quinn</b>	Biology and Environmental Science	Strategy to operationalise coordinated citizen science freshwater monitoring LAWPRO support
Department of Agriculture Food and the Marine	<b>Olaf Schmidt</b>	Agriculture and Food Science	Signature of Irish Grass-fed Beef (BEEF-SIG)
Department of Agriculture Food and the Marine	<b>Simone Ciuti, Barry McMahon</b>	Biology and Environmental Science, Agriculture and Food Science	A smart and open-science approach to monitor and analyse deer populations in the Republic of Ireland and set the scene for evidence-based deer management.
Department of Agriculture Food and the Marine	<b>Paul Murphy, Olaf Schmidt, Saoirse Tracy</b>	Agriculture and Food Science	Farm Sustainability Tools for Efficient Nutrient management
Department of Agriculture Food and the Marine	<b>Tom Curran</b>	Biosystems and Food Engineering	Abating Ammonia in Agriculture

<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Department of Agriculture Food and the Marine	<b>Brian Tobin</b>	Agriculture and Food Science	Response of tree species to climate change
Department of Agriculture Food and the Marine	<b>Brian Tobin</b>	Agriculture and Food Science	NEXCELSIOR: Next steps in managing the impact of ash dieback
Department of Agriculture Food and the Marine	<b>Fiona Doohan, Angela Feechan, Rainer Melzer, Saoirse Tracy</b>	Biology and Environmental Science, Agriculture and Food Science	Biostimulants and Biopesticides for Crop production
Department of Agriculture Food and the Marine	<b>Mary Kelly-Quinn, Fiachra O’Loughlin, John O’Sullivan, Brian Tobin, Jonathan Turner</b>	Biology and Environmental Science, Civil Engineering, Agriculture and Food Science, Geography	Hydrological and sediment impacts of forestry operations in Ireland
Department of Arts Heritage and the Gaeltacht	<b>Barry McMahon</b>	Agriculture and Food Science	GPS tracking Barnacle Geese in Ireland
Department of Foreign Affairs and Trade	<b>Penelope Muzanehamo</b>	Business	Place Belonging International Entrepreneurship in Africa: Impact on Sustainable Development
Department of Jobs Enterprise Innovation	<b>Peter Clinch</b>	Architecture Planning and Environmental Policy	National Competitiveness Council
Dublin Airport Authority	<b>Paraic Carroll</b>	Civil Engineering	Air-cessibility - Examining land transport accessibility and mode preferences to Dublin Airport
European Regional Development Fund	<b>Gregory O’Hare</b>	Computer Science	Platform for Atlantic Geohazard Risk Management (PAGEO)
European Regional Development Fund	<b>Karen Foley</b>	Architecture Planning and Environmental Policy	CCAT
European Regional Development Fund	<b>Wim Meijer</b>	Biomolecular and Biomedical Science	ACCLIMATIZE
European Regional Development Fund	<b>Tasman Crowe, Ciaran McNally, Jens Carlsson</b>	Biology and Environmental Science, Civil Engineering	ECOSTRUCTURE: climate change adaptation through ecologically sensitive coastal infrastructure
European Regional Development Fund	<b>Ciaran Mcnally</b>	Civil Engineering	ECOSTRUCTURE: climate change adaptation through ecologically sensitive coastal infrastructure
European Regional Development Fund	<b>Gregory O’Hare, Wim Meijer</b>	Computer Science, Biomolecular and Biomedical Science	System for bathing Water quality Modelling (SWIM)
Enterprise Ireland	<b>Wim Meijer</b>	Biomolecular and Biomedical Science	Validating the value in the Total Patient Value Toolkit (TPV-T) in a formal clinical trial setting (TPV-ValidTrial)
Enterprise Ireland	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	Smart City Lighthouse Project
Enterprise Ireland	<b>Meriel McClatchie</b>	Archaeology	Agriculture along the Corridor of the Atlantic 1000â€”1 BC (AGRICORA)
Enterprise Ireland	<b>Carl Ng</b>	Biology and Environmental Science	ClimateOnGuard â€” Innovative training on the impacts of climate change on plant and crop responses
Enterprise Ireland	<b>Angela Feechan</b>	Agriculture and Food Science	Virulence Proteins of Plants and Animals
Enterprise Ireland	<b>Carl Ng</b>	Biology and Environmental Science	FutureCropAdapt: future-proofing European food and nutritional security



<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Enterprise Ireland	<b>Tom Curran</b>	Biosystems & Food Engineering	H2020 co-ordinator support - Circular bio-based business models based on pig production in rural communities
Enterprise Ireland	<b>Tom Curran</b>	Biosystems & Food Engineering	Developing solutions for Fatbergs in sewers using Sensing technology (FatbergSense)
Enterprise Ireland	<b>Eugene O'Brien</b>	Civil Engineering	Swarm Sensing of Structures
Enterprise Ireland	<b>Grace Cott</b>	Biology and Environmental Science	Investigating the sink-strength capacity of wetland plant species to global change factors
Enterprise Ireland	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	Developing a Marie Curie industry PhD co-fund application
Enterprise Ireland	<b>Meriel McClatchie</b>	Archaeology	Agriculture along the Corridor of the Atlantic 1000â€™1 BC (AGRICORA)
Enterprise Ireland	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	Talent4BBI: Developing Talent for Bio-Based Industries of Europe
Enterprise Ireland	<b>Saoirse Tracy</b>	Agriculture and Food Science	ROOT phenotyping in the Second green revolution
Enterprise Ireland	<b>Nick Holden</b>	Biosystems & Food Engineering	Coordinator support for TransCEU proposal
Enterprise Ireland	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	H2020- Proposal Preparation Support
Enterprise Ireland	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	TENURE
Enterprise Ireland	<b>Donal Finn</b>	Mechanical & Materials Eng	H2020 Travel Support
Enterprise Ireland	<b>Fiona Doohan</b>	Biology and Environmental Science	Horizon 2020 Travel Support
Enterprise Ireland	<b>Alojz Ivankovic</b>	Mechanical & Materials Eng	PANDORA
Enterprise Ireland	<b>Tom Curran</b>	Biosystems & Food Engineering	BARLEY GRAIN QUALITY
Enterprise Ireland	<b>Alojz Ivankovic</b>	Mechanical & Materials Eng	Finite Element Analysis to determine static and dynamic stresses on environmentally friendly aluminium trailers
Environmental Protection Agency	<b>Carl Ng</b>	Biology and Environmental Science	New Phytologist New Generation Scientists Symposium 2019
Environmental Protection Agency	<b>Michael Bruen, Mary Kelly-Quinn</b>	Civil Engineering, Biology and Environmental Science	ESDecide: from Ecosystem Services Framework to Application for Integrated Freshwater Resources Management
Environmental Protection Agency	<b>Michael Bruen, Mary Kelly-Quinn, Florence Renou-Wilson</b>	Civil Engineering, Biology and Environmental Science	Strategies to improve Water quality from Managed Peatlands (SWAMP)
Environmental Protection Agency	<b>Craig Bullock</b>	Architecture Planning and Environmental Policy	Advancing packaging waste statistics and recycling
Environmental Protection Agency	<b>Rainer Melzer, Jon Yearsley</b>	Biology and Environmental Science	The phenology of perennial ryegrass and its potential contribution to grassland carbon sequestration
Environmental Protection Agency	<b>Gerald Mills</b>	Geography	Greening the city
Environmental Protection Agency	<b>Michael Bruen, Tasman Crowe, Mary Kelly-Quinn</b>	Civil Engineering, Biology and Environmental Science	Land2Sea: integrated modelling of terrestrially derived and climatic impacts on freshwater and marine ecosystems

<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Environmental Protection Agency	<b>Mary Kelly-Quinn, Jonathan Turner, Michael Bruen, Jens Carlsson</b>	Biology and Environmental Science, Geography, Civil Engineering	Assessment of extent and impact of barriers on freshwater hydromorphology and connectivity in Ireland (ReCONNECT)
Environmental Protection Agency	<b>Mary Kelly-Quinn</b>	Biology and Environmental Science	Irish Natural Capital Accounting for Sustainable Environments (INCASE)
Environmental Protection Agency	<b>Michael Bruen</b>	Civil Engineering	DiffuseTools: Catchment Models and Management Tools for Diffuse Contaminants (Sediment Phosphorus and Pesticides)
Environmental Protection Agency	<b>Mary Kelly-Quinn</b>	Biology and Environmental Science	Irish Natural Capital Accounting for Sustainable Environments (INCASE)
Environmental Protection Agency	<b>Ainhoa Gonzalez Del Campo</b>	Geography	Tiering of Environmental Assessment – The Influence of SEA on Project Level EIA
Environmental Protection Agency	<b>Mark Scott</b>	Architecture Planning and Environmental Policy	BE-Resilient: Built Environment Resilient Futures. Best practice in implementing climate adaptation
Environmental Protection Agency	<b>Dara Stanley</b>	Agriculture and Food Science	Relationships between functional diversity and food production and quality under ecological intensification (FunProd)
Environmental Protection Agency	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	Sustainable biodegradable compostable and recyclable plastics for packaging and end-of-management
Environmental Protection Agency	<b>Ainhoa Gonzalez Del Campo</b>	Geography	NATIONAL ENVIRONMENTAL SENSITIVITY MAPPING (ESM)
Environmental Protection Agency	<b>Ainhoa Gonzalez Del Campo</b>	Geography	Further Development and Maintenance of the Environmental Sensitivity Mapping Webtool
Environmental Protection Agency	<b>Ainhoa Gonzalez Del Campo</b>	Geography	ESM Web Tool Illustrated Video
Environmental Protection Agency	<b>Mary Kelly-Quinn</b>	Biology and Environmental Science	To develop and test a strategy to operationalise coordinated citizen science freshwater monitoring in Ireland
Environmental Protection Agency	<b>Peter Clinch</b>	Architecture Planning and Environmental Policy	EPA Remuneration Climate Change advisory council
Environmental Protection Agency	<b>Florence Renou-Wilson</b>	Biology and Environmental Science	Reducing the Effects of Forest Management to Inland Waters
ESPON EGTC	<b>Ainhoa Gonzalez Del Campo</b>	Geography	Territorial Impact Assessment for Cross-Border Cooperation
ESPON EGTC	<b>Niamh Moore Cherry</b>	Geography	ENSURE European Sustainable Urbanisation through port city REgeneration
Eva Crane Trust	<b>Dara Stanley</b>	Agriculture and Food Science	Brilliant Bees: the importance of wild and managed pollinators to Irish agricultural systems
Eva Crane Trust	<b>Dara Stanley</b>	Agriculture and Food Science	Eva Crane Trust Pollen Reference Collection
Executive Agency for Small and Medium Sized Enterprises	<b>Kevin McDonnell</b>	Agriculture and Food Science	Future Agricultural Management for multiple outputs on climate and rural development (LIFE Farm4More)
Geological Survey of Ireland	<b>Aggeliki Georgiopolou</b>	Earth Sciences	iCRAG Environmental Geosciences PhD Programme
Geological Survey of Ireland	<b>Patrick Orr</b>	Earth Sciences	Senior Geoscience and Policy Specialist
Geological Survey of Ireland	<b>John Walsh</b>	Earth Sciences	Identification and Assessment of Deep Geothermal Heat Resources in Challenging Urban Environments (GEO_URBAN)

<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Geological Survey of Ireland	<b>Patrick Orr</b>	Earth Sciences	Blue Book - Annex 3 - Lower Carboniferous Stratigraphy of Ireland
Geological Survey of Ireland	<b>Shane Donohue</b>	Civil Engineering	Geohazards and Geotechnics
Glanbia Ireland Designated Activity Company	<b>Kevin Edward O'Connor</b>	Biomolecular and Biomed Science	Developing an integrated high yield process for converting Dairy residue to a chemical
Henkel	<b>Alojz Ivankovic</b>	Mechanical and Materials Engineering	Additive Manufacturing and Characterisation of Polymeric materials (PhD Studentship)
Higher Education Authority (HEA)	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	Impact Assessment Case Studies and Performance Funding (Project Outcome 1)
HORIZON 2020	<b>Frederic Dias</b>	Mathematics and Statistics	Breaking of highly energetic waves (HIGHWAVE)
HORIZON 2020	<b>Meriel McClatchie</b>	Archaeology	Food Culture and Identity in Ireland 1550-1650 (FOODCULT)
HORIZON 2020	<b>John Walsh</b>	Earth Sciences	Quantitative analysis of the structural controls of faults on induced seismicity magnitude (FINSEIS)
HORIZON 2020	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	MIXed plastics biodegradation and UPcycling using microbial communities (MIX-UP)
HORIZON 2020	<b>Fiona Doohan</b>	Biology and Environmental Science	Next generation variety testing for improved cropping on European farmland (Innovar)
HORIZON 2020	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	Smart Network Operator Platform enabling Shared Integrated and more Sustainable Urban Freight Logistics (SENATOR)
HORIZON 2020	<b>Julian Menuge</b>	Earth Sciences	New Exploration Tools for European Pegmatite Green-Tech Resources (GREENPEG)
HORIZON 2020	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	WeCount: Citizens Observing UrbaN Transport (WeCount)
Huawei Technologies Co. Ltd	<b>John Sheridan</b>	Electrical and Electronic Engineering	Opto-electronic beam shaping
Huawei Technologies Co. Ltd	<b>John Sheridan</b>	Electrical and Electronic Engineering	Optimised DOEs for DWDM
Invest Northern Ireland	<b>Wim Meijer</b>	Biomolecular and Biomedical Science	System for bathing Water quality Modelling (SWIM)
Irish Research Council	<b>Frank McDermott</b>	Earth Sciences	Constraining past moisture variability in sub-Saharan Africa to improve future projections and enhance resiliency under a changing climate
Irish Research Council	<b>Michela Bertolotto</b>	Computer Science	Development of Time-Robust Geospatial Information for enhancing Sustainable Mining in Northwest Ghana
Irish Research Council	<b>Emma C Teeling</b>	Biology and Environmental Science	BIOGEOBARRIERS – the role and impact of biogeographical barriers on biotic diversification and distribution
Irish Research Council	<b>Michela Bertolotto</b>	Computer Science	Development of Time-Robust Geospatial Information for enhancing Sustainable Mining in Northwest Ghana
Irish Research Council	<b>Craig H Bullock</b>	Architecture Planning and Environmental Policy	COALESCE Strand 1G - A Financial Needs Assessment Policy and Institutional Review Finance and Resource Mobilisation Strategy for Biodiversity
Irish Research Council	<b>Niamh Moore Cherry</b>	Geography	Ireland in the Metropolitan Century
Irish Research Council	<b>Olaf Schmidt</b>	Agriculture and Food Science	Green Infrastructure pilot projects in Dublin: Hydraulic efficacy biodiversity benefits experimental optimizations and flood defence modelling



<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Irish Research Council	<b>Paul McCabe</b>	Biology and Environmental Science	Pharming of high value metabolites from transplastomic plant cells using bioreactors
Irish Research Council	<b>Jacqueline Croke</b>	Geography	Remembering hydromorphology: sensitivity of past and future flooding to changes in channel capacity land use and river disturbances
Irish Research Council	<b>Paul Francis McCabe</b>	Biology and Environmental Science	One plant â€œ dozens of applications: Establishing a breeding programme for the highly versatile crop Cannabis sativa
Irish Research Council	<b>Cormac Murphy</b>	Biomolecular and Biomedical Science	Characterisation of CYP5208A2: A putative xenobiotic-transforming enzyme in Cunninghamella elegans
Irish Research Council	<b>Stephen Daly</b>	Earth Sciences	Providing chronology for ancient ocean chemistry
Irish Research Council	<b>K. Ravindranathan Thampi</b>	Chemical and Bioprocess Engineering	Round-the-clock metal-free visible-light photocatalyst polymer membrane reactor for elimination of short-chain per- and poly-fluoroalkyl substances from surface waters
Irish Research Council	<b>Jennifer Keating</b>	History	The Habitable Globe Science Geography and Environment in the Indian Sub-Empire
Irish Research Council	<b>Sharae Deckard</b>	English Drama and Film	The New Ecological Imaginary: Waste Water Energy and the Built Environment in Twenty-First Century Experimental Prose (2001-2019)
Irish Research Council	<b>Dara Stanley</b>	Agriculture and Food Science	From Roots to Pollinators: How above- and below-ground organisms interact through plants
Irish Research Council	<b>Angela Feechan</b>	Agriculture and Food Science	Investigating the role of receptor-like kinases (RLKs) in defence priming in wheat
Irish Research Council	<b>Jessica Smyth</b>	Archaeology	Peregrini: a comparative study of mobility among medieval ecclesiastics and nuns in Ireland and Wales
Irish Research Council	<b>Jessica Smyth</b>	Archaeology	What when where and why? Understanding the origins of bog butter in Ireland.
Irish Research Council	<b>Simone Ciuti</b>	Biology and Environmental Science	Social or Solo? Energetic consequences of foraging strategies amongst cooperative and solitary hunters
Irish Research Council	<b>Andrew Jackson</b>	Law	Reimagining human rights to avert dangerous climate change: an ecofeminist perspective
Irish Research Council	<b>Paul McCabe</b>	Biology and Environmental Science	Climate smart Ireland: identifying regulators of aerenchyma the 'snorkel' tissue for survival of waterlogged crops
Irish Research Council	<b>Rainer Melzer</b>	Biology and Environmental Science	Towards establishing hemp as a sustainable crop for Irish agriculture
Irish Research Council	<b>Dara Stanley</b>	Agriculture and Food Science	Pollinators and pollination in subtropical Africa: evaluating their importance for woodland habitats and sustainable livelihoods through the provision of forest products
Irish Research Council	<b>Dara Stanley</b>	Agriculture and Food Science	Cocoa and biodiversity: Interactions between pollinators cocoa production and rural livelihoods in Ghana
Irish Research Council	<b>Barry Molloy</b>	Archaeology	Out with the old in with the new? The Urnfield influence in Balkans settlement dynamics: a comparative study of Istria and Banat
Irish Research Council	<b>Jessica Smyth</b>	Archaeology	A Multi-Isotope Investigation of Faunal Remains From Newgrange Co. Meath: Deciphering Later Prehistoric Subsistence and Connectivity
Irish Research Council	<b>Sharae Deckard</b>	English Drama and Film	The Origins of Post-Truth: Neoliberalism and Epistemic Crisis in Anglo-American Fiction 1980 to the Present.

<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Irish Research Council	<b>Emma Teeling</b>	Biology and Environmental Science	The ecosystem services of Irish bats
Irish Research Council	<b>Paul McCabe</b>	Biology and Environmental Science	Pharming of high value metabolites from transplastomic plant cells using bioreactors
Irish Research Council	<b>Niamh Moore Cherry</b>	Geography	Communicating teenager's urban geographies using art-based methods
Irish Research Council	<b>Donal Finn</b>	Mechanical and Materials Engineering	Influence of demand response on energy markets: a long-term perspective
Kaggle	<b>Soumyabrata Dev</b>	Computer Science	Ground-based Imager for Continuous Atmospheric Monitoring
Marine Institute	<b>Jens Carlsson</b>	Biology and Environmental Science	CF-17-04 Piscine myocarditis virus: improved diagnostics and investigating the prevalence in farmed and wild fish in Ireland
Marine Institute	<b>Frederic Dias</b>	Mathematics and Statistics	Cullen Fellowship: Coupled wave-ocean models
Marine Institute	<b>Jens Carlsson</b>	Biology and Environmental Science	CF-17-04 Piscine myocarditis virus: improved diagnostics and investigating the prevalence in farmed and wild fish in Ireland
Marine Institute	<b>Tasman Peter Crowe</b>	Biology and Environmental Science	Modelling and Mapping Ireland's Invasive Marine Species Spread and Impact Potential
Marine Institute	<b>Jonathan Yearsley</b>	Biology and Environmental Science	Modelling and Mapping Ireland's Invasive Marine Species Spread and Impact Potential
Multicompany ITF (UK)	<b>John Joseph Walsh</b>	Earth Sciences	iCRAG_QUAFF2: Quantification of 3D fault zone geometries and their incorporation in modelling practice
Office of Public Works	<b>Simone Ciuti</b>	Biology and Environmental Science	Human - Deer Feeding interactions in the Phoenix Park Dublin
Office of Public Works	<b>Simone Ciuti</b>	Biology and Environmental Science	Behavioural ecology of fallow deer in Phoenix Park Dublin - assessing the impact of tourists feeding deer
OPTASENSE Limited	<b>Shane Donohue</b>	Civil Engineering	Optasense Industry Contribution - SFI SPOKES ROLLING PROGRAMME
Research Council of Norway (RCN)	<b>Graeme Martin Warren</b>	Archaeology	The Storegga tsunami c. 6150 BC - a wave of destruction or transformative disruption for a prehistoric society?
Royal Embassy of Saudi Arabia	<b>Gerald Mills</b>	Geography	4 year PhD
Royal Embassy of Saudi Arabia	<b>James Sullivan</b>	Chemistry	Ghadeer Almohammadi MSc project - the adsorption of pollutants onto nanostructured oxides
Royal Embassy of Saudi Arabia	<b>Niamh Moore Cherry</b>	Geography	PhD Scholarship
Royal Embassy of Saudi Arabia	<b>Olaf Schmidt</b>	Agriculture and Food Science	Biological studies on the invasive plant species <i>Gunnera tinctoria</i>
Royal Embassy of Saudi Arabia	<b>Wim Meijer</b>	Biomolecular and Biomedical Science	MSc in Infection Biology
Royal Embassy of Saudi Arabia	<b>Oliver Kinnane</b>	Architecture Planning and Environmental Policy	PhD in Architecture - Controlling Climate and Electrical energy used in Saudi Arabia
Royal Embassy of Saudi Arabia	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	Smart approaches to assess the impact of indoor environmental quality on work productivity in university open-plan research offices
Royal Embassy of Saudi Arabia	<b>K. Ravindranathan Thampi</b>	Chemical and Bioprocess Engineering	Advanced Materials for Solar Energy Conversion and Storage

<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Royal Embassy of Saudi Arabia	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	PhD studentship
Royal Embassy of Saudi Arabia	<b>Olaf Schmidt</b>	Agriculture and Food Science	Biological studies on the invasive plant species <i>Gunnera tinctoria</i>
Royal Embassy of Saudi Arabia	<b>Oliver Kinnane</b>	Architecture Planning and Environmental Policy	PhD in Architecture - Controlling Climate and Electrical energy used in Saudi Arabia
Royal Embassy of Saudi Arabia	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	Smart approaches to assess the impact of indoor environmental quality on work productivity in university open-plan research offices
Royal Embassy of Saudi Arabia	<b>K. Ravindranathan Thampi</b>	Chemical and Bioprocess Engineering	PhD in Renewable Energy
Royal Embassy of Saudi Arabia	<b>Francesco Pilla</b>	Architecture Planning and Environmental Policy	Smart approaches to assess the impact of indoor environmental quality on work productivity in university open-plan research offices
Royal Irish Academy (RIA)	<b>Meriel McClatchie</b>	Archaeology	A new scientific approach to determine agricultural management strategies in medieval Ireland
Science Foundation Ireland	<b>Dara Stanley</b>	Agriculture and Food Science	SFI Maternity Allowance
Science Foundation Ireland	<b>Emma Teeling</b>	Biology and Environmental Science	SFI Centre for Research Training in Genomics Data Science
Science Foundation Ireland	<b>Bruce Osborne</b>	Biology and Environmental Science	10th International Conference on Biological Invasions: New Directions in Invasion Biology
Science Foundation Ireland	<b>Angela Feechan</b>	Agriculture and Food Science	International Symposium on Cereal Leaf Blights 2019
Science Foundation Ireland	<b>Wim Meijer</b>	Biomolecular and Biomedical Science	SARS-CoV-2 surveillance of sewage and sewage impacted waterbodies
Science Foundation Ireland	<b>Kevin O'Connor, James Sullivan</b>	Biomolecular and Biomedical Science, Chemistry	BEACON Partnership with the University of Nottingham (CDT-2AP) Centre for Doctoral Training Atoms-to-Products - an Integrated Approach to Sustainable Chemistry
Science Foundation Ireland	<b>Emma C Teeling</b>	Biology and Environmental Science	LongHealth: The Molecular Basis and Regulation of Longer Healthspan in Mammals
Science Foundation Ireland	<b>Shane Donohue</b>	Civil Engineering	Geophysical and Earth Observation Tools for Evaluating the Condition of Slopes (GEOTECS)
Science Foundation Ireland	<b>Kevin O'Connor</b>	Biomolecular and Biomedical Science	Creating a carbon neutral resilient dairy farm
Science Foundation Ireland	<b>Sonia Negrao</b>	Biology and Environmental Science	Looking into time- how abiotic stress impacts barley production and malting quality
Science Foundation Ireland	<b>Evelyn Doyle</b>	Biology and Environmental Science	Discovering non-protein-coding vulnerabilities in lung cancer with CRISPR-Cas9
Science Foundation Ireland	<b>Aggeliki Georgiopolou</b>	Earth Sciences	iCrag Environmental Geosciences PhD Programme
Science Foundation Ireland	<b>Frederic Dias</b>	Mathematics & Statistics	Marine Renewable Energy Ireland (MaREI) The SFI Centre for Marine Renewable Energy Research
Science Foundation Ireland	<b>Frederic Dias</b>	Mathematics & Statistics	MaREI Phase 2
Science Foundation Ireland	<b>John Cotter</b>	Business	FinTech
Science Foundation Ireland	<b>Peter Clinch</b>	Architecture Planning and Environmental Policy	SFCP - Science Foundation Ireland



<b>Funder</b>	<b>Awardee</b>	<b>School / Group</b>	<b>Project Title</b>
Science Foundation Ireland	<b>Kevin McDonnell</b>	Biosystems and Food Engineering	Sustainable biomass supply chain development for the Irish bioeconomy
Science Foundation Ireland	<b>Grace Cott</b>	Biology and Environmental Science	Processes and mechanisms controlling carbon sequestration and storage in blue carbon habitats; advancing Ireland's capacity to mitigate and adapt to climate change (BlueCarbon)
Science Foundation Ireland	<b>Michela Bertolotto</b>	Computer Science	Urban ARK: Assessment Risk Management & Knowledge for Coastal Flood Risk Management in Urban Areas
Science Foundation Ireland	<b>Frank McDermott</b>	Earth Sciences	Multi-Scale Investigation of Bio-Based Mineral Precipitation in Carbonate-Bearing Granular Soils and Construction Related Waste
Straw Chip Limited	<b>Tom Curran</b>	Biosystems and Food Engineering	BARLEY GRAIN QUALITY
Sustainable Energy Authority of Ireland	<b>Frederic Dias</b>	Mathematics and Statistics	RESOURCECODE: Resource Characterisation to Reduce the Cost of Energy through Coordinated Data Enterprise
Sustainable Energy Authority of Ireland	<b>Ainhoa Gonzalez Del Campo</b>	Geography	Mapping Webtool to Support the Preparation of Local Authority Renewable Energy Strategies
Sustainable Energy Authority of Ireland	<b>Gerald Mills</b>	Geography	Urban Building Energy Model
Sustainable Energy Authority of Ireland	<b>Oliver Kinnane</b>	Architecture Planning and Environmental Policy	NZEB101
Sustainable Energy Authority of Ireland	<b>Conor Sweeney</b>	Mathematics and Statistics	IEA Task 36 - Forecasting for Wind Energy
Teagasc	<b>Kevin McDonnell</b>	Agriculture and Food Science	The impact of cultivation system intensity combined with crop rotation on soil structure quality and crop performance in a mild climate
Teagasc	<b>Eoin O'Neill</b>	Architecture Planning and Environmental Policy	Consumer understanding of the bioeconomy and bio-based products
Teagasc	<b>Olaf Schmidt</b>	Agriculture and Food Science	Soil Compaction - evaluating the effects of remediation strategies on soil nutrients plants and water
Teagasc	<b>Brian Tobin</b>	Agriculture and Food Science	Walsh Fellowship 2020 (FitForests)
Teagasc	<b>Paul Murphy</b>	Agriculture and Food Science	The role of sulphur nutrition in grassland yield quality and nutrient use efficiency optimisation
Teagasc	<b>Saoirse Tracy</b>	Agriculture and Food Science	Influence of root:soil interactions to enhance plant resilience to abiotic stress in Irish cereal crops
Teagasc	<b>Olaf Schmidt</b>	Agriculture and Food Science	Evaluating the potential of leguminous cover crops to reduce fertiliser N requirements of cereal crops
The Leverhulme Trust	<b>Saoirse Tracy</b>	Agriculture and Food Science	Friend or foe; who wins in the competition for plant resources
The Rank Prize Funds	<b>Saoirse Tracy</b>	Agriculture and Food Science	Using X-ray CT scanning to investigate plant to plant interactions
University of Limerick	<b>Alojz Ivankovic</b>	Mechanical & Materials Eng	Composite/Composite and Composite/Metal Bonding (CCM Bond2)
Wicklow County Council	<b>Graeme Warren</b>	Archaeology	Archaeological excavations at Glendalough Co.Wicklow

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