



UCD Earth Institute

Better understand today's world.
Inform solutions for tomorrow.



Where will we find answers to the world's greatest challenges?

UCD Earth Institute research helps identify, clarify, forecast and find solutions to the most pressing issues facing us today.

For the first time, we have a broad scientific understanding of how the Earth works. We have discovered that the solid Earth, the oceans, the atmosphere and even life itself are all delicately interconnected, delicately balanced.

We are the first generation to realise that human practices are upsetting this balance.





UCD Earth Institute exists to create knowledge leading to a better understanding of how different components of the Earth work together, to communicate that knowledge, to forecast long-term available energy and other resources, and to propose adaptation strategies as the environment which underpins our everyday lives continues to change.

What are the problems we need to solve?

We use resources faster than they can be replenished. For example, we rapidly unlock stored carbon through burning fossil fuels, driving the system out of equilibrium.

Such unsustainable practices are bearing unwelcome fruits: global temperature rises, changing weather patterns, changes in crop production and locally available fish stocks.

Unsustainable activities are rooted in legacy practices from a time when we did not understand how our planet works. Now that we have a better understanding, we urgently need solutions for sustainable development and living practices.

These changes cannot readily be reversed, but perhaps they can be stabilised. To do so, we require new strategies.

About UCD Earth Institute...

- We are a multidisciplinary research centre focused on creating and sharing new knowledge
- We have more than 80 active principal investigators seeking solutions to many pressing Earth-related problems
- We are supported by the latest laboratory and field equipment
- We actively engage with industry, building bridges between research and tangible industrial solutions
- We collaborate with government and agencies in policy formation
- We engage in outreach as well as education
- We are ready to engage with you to help answer your greatest challenges.

Our expertise...

We connect research across eight key themes...



UCD Earth Institute engineers, architects, planners, and policy experts are working together to make cities 'smarter' and more sustainable through energy-efficient planning and design.



To help us forecast how ecosystems and animals will evolve in response to changes, our scientists are investigating and analysing myriad ecological and evolutionary datasets.



Governments support the smart use of energy from natural resources. We are looking at ways to harness energy from hydrocarbon, wind, waves, solar, geothermal, biomass, etc.



We are working on key challenges including expansion of existing export markets, new markets based on cell factories, enhancing the horticultural industry, and maximising forestry potential.

UCD Earth Institute has a wide range of existing partnerships with other academic institutions, industry & enterprise, government and agencies.

Our researchers

Respected experts in differing fields are working across disciplines from Biology to Applied Mathematics. Threats to sustainability, our economy and our way of life can only be met through strong cross-disciplinary collaboration working together to create new knowledge.

www.ucd.ie/earth/research

Our facilities

Located in UCD's new Science District, part of Ireland's largest science hub. We have the latest laboratory facilities, leading-edge field equipment and related scientific and engineering expertise. Our facilities are available through collaborative projects.

www.ucd.ie/earth/facilities



Climate

Analysing past climate behaviour is helping our scientists better understand how our climate is changing, and how the planet's eco-systems may react in the future.



Natural Hazards & Risk

To reduce society's vulnerability our researchers are examining ways to better quantify natural hazards and develop improved risk mitigation strategies and behavioural responses.



Water

Fresh water is expected to be increasingly scarce in the future. We are exploring solutions to improve quality and sustainability, monitor supplies, and better manage resources.



Green Technology

Our researchers are exploring manufacturing processes for everyday products that are less energy intensive, less polluting, and limit harmful effects.

We can help you to source funding and connect you with experienced research teams and the best facilities.

Industry & Enterprise working with us...

We can help you find funding for university-industry collaborative research; help prepare a submission and follow through with the best team to achieve your goals.

For more about how we can help, and to see sample industry case studies, visit our website, or call us on +353 1 716 2600.

www.ucd.ie/earth/partner-with-us

Collaboration Lab

Collaboration Lab is a mechanism for Industry & Enterprise to access the expertise of our researchers.

Find out more...

www.ucd.ie/earth/partner-with-us



Our goals...

- Promote and strive for research excellence and foster an open and interdisciplinary collaborative culture
- Highlight the fundamental importance to society of Earth systems and the environment, and address sustainability challenges
- Be a source of evidence-based understanding for policy formation, media, industry and education
- Encourage multidisciplinary interaction by creating internal and external bridges for research
- Partner with enterprise to find solutions for real-world problems
- Promote and encourage interest in and curiosity about earth sciences and engineering.



For more information or
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HEA

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AN EUIDARAS um ARD-OIDEACHAS