Irish Chemical News

A Journal of the Institute of Chemistry of Ireland

Centenary Congress Celebrations Science Week November 17th held at the Royal Irish Academy, Dawson Street Dublin 2

1973 Young Scientist Exhibition

Tadhg Begley aged 18 winner of the 1973 Young Scientist Exhibition and as Prof Tadhg Begley Texas A&M University winner of the Boyle Higgins Gold Medal Award 2021 being presented with the medal on the 17th of November 2022 by Prof Pat Guiry during the ICI Centenary Congress in the Royal Irish Academy.

Watch the archieve video here: RTÉ Archives | Technology | Young Scientist Exhibition (rte.ie)

Institiúid Ceimice na hÉireann
The Institute of Chemistry of Ireland
ICI Centenary 1922-2022
Patron: Michael D. Higgins, President of Ireland
The Professional Body Representing Chemists in Ireland

Ravensdale Road, Dublin D03 CY66. **Web:** www.instituteofchemistry.org

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A Message from the President

Dear Fellows, Members, Graduates and Associates,

Happy New Year to you all.

The cover of this issue gives you to a link to a super RTE interview with the winner of the Young Scientist Exhibition in 1973, our Boyle-Higgins Medallist in 2021 Professor Tadhg Begley. You will see that the rigour and clarity so obvious in Tadhg's lecture in the Royal Irish Academy was obvious even at such a young age and the interviewer comes off a clear second best.

Planning continues for ECC9 in July 2024 and I will represent the ICI as an Executive Board member of EuChemS in February where we will agree upon the personnel on the Scientific Committee which will be chaired by Professor David Leigh from the University of Manchester. Theme convenors will then be chosen and invitations will be sent to Plenary and Invited Lecturers.

The Local Organising Committee, co-chaired by Professors Thorri Gunnlaugsson and Celine Marmion, includes many chemists from across Ireland, namely Professors Steven Bell, Susan Quinn, Paul Murphy, Isabel Rozas, Rob Elmes, John Wenger, Silvia Giordani, Colm McKeever, Odilla Finlayson Mike Zaworotko, John Cassidy, Sarah Hayes and John Keegan.

We will have an interesting programme across our eight themes: Energy, Environment and Sustainability; Physical, Analytical and Computational Chemistry; Advances in Synthetic Organic Chemistry; Chemistry Meets Biology; Catalysis; Supramolecular Chemistry; Nanochemistry/Materials; and Chemistry (Education, History, Cultural Heritage, Ethics). In addition, we will have a one-day special symposium on industrial chemistry.

We have sent out a call for nominations for the Boyle-Higgins Medal, the Eva Philbin Award and the Postgraduate Award for 2023 and those selected for these prestigious awards will present at the ICI Awards Day which will be held in UCD on Thursday April 20th with the AGM of the ICI held afterwards.

Many thanks to the ICI Young Chemists' Network (YCN) who continue to work hard to provide support to the younger members of our community. Colm McKeever, Maynooth University, is the ICI YCN chair and do get in contact with him if there are issues you wish to highlight or events you wish to organise.

I wish to again thank our Editor, Pat Hobbs, who continues to enlighten our community on national and international topics that are of most interest to our community. This is a significant undertaking and is much appreciated and I do hope you enjoy reading it.

My thanks also to all Council members who voluntarily give of their time and expertise to support our Institute and community. A special thanks to you, our ICI Fellows, members, graduates and associates. Please do keep in touch and send us your updates. We would be delighted to showcase these on our ICI website and in future ICN issues.

With best regards,

Professor Pat Guiry PhD FRSC FICI MRIA

President, Institute of Chemistry of Ireland

6th February, 2023

Editorial

The New Year brings exciting developments and innovation in chemistries and related technologies with huge spending and efforts aimed at climate change remediation. In chemistry, issues retractions and questions of Open Access are highlighted. Roman cement with its low carbon footprint in comparison to Portland cement has garnered much attention.

Since the last Issue of ICN a RTE interview with Tadhg Begley has come to light. The front cover features two photos of Tadhg Begley, one at 18 years old as winner of the 1973 Young Scientist Exhibition and another as Prof Tadhg Begley, Texas A&M University, as recipient of the ICI Boyle Higgins Gold Medal Award 2021. The 1st photo of Tadhg is a screen shot from the RTE Achieve. The video depicts a confident, self-assured and focused young man destined to go places. A link to the footage is provided.

A second international conference COP15, focused on biodiversity, was held in Montreal, Canada, in December 2022. Despite its significance, it received less media attention than the COP27 conference in Egypt earlier in the year, and its conclusions are less clear.

The RIA Kathleen Lonsdale RIA Chemistry Prize 2023 was awarded to Dr Chunchun Li, of Queen's University Belfast. The Boyle Higgins Gold Medal, the ICI Annual Award for Chemistry, and Postgraduate Awards are now open for nominations.

The Irish Research Council section has expanded with lots happening there.

EuChemS have published a new journal. The EuChemS Magazine was launched in January replacing Chemistry in Europe and Brussels News Updates. EuChemS have announced changes to the Executive Board and the appointment of five new members including Prof Pat Guiry UCD, Chair of EuChemS Division of Organic Chemistry, to the Executive Board. Under Professional Networks, the list of EuChemS Divisions/Working Parties is presented. Some exciting fore coming EuChemS events are announced.

The ERC, European Research Council have made new appointments of distinguished scientists and scholars including Prof Luke O'Neill TCD, to join the ERC Scientific Council effective from January 1st 2023.

Gene editing technologies, particularly CRISPR now 10 years old, continue to make progress with new applications. The name of this topic has been changed to include gene editing technologies other than just CRISPR. These technologies will have huge impact for medicine and agriculture just to mention two applications.

Battery chemistry and technology continues to get attention. Green hydrogen and closely associated Green Ammonia is making headlines as it is a source of hydrogen and more easily stored and transported. However, these topics also have their challenges.

Artificial Intelligence software **ChatGPT** is generating buzz in the media, with massive implications for education, and the potential to write research papers. This ground breaking AI application is only a few months old and has the potential to be a game changer. Further coverage is deferred until the next Issue.

Nuclear Fusion grabbed the headlines in December with the announcement by the US National Ignition Facility of a net fusion energy gain, claiming a world first. Although the reality is more complex than the headlines suggest, it is still decades away from practical use.

Finally this is the last time covering **SARS CoV-2 Virus Updates and Developments** because new publications have become much more medical and health care in nature with little chemistry focus. It has run its course. The section stands as a record of this unprecedented time in our lives. As the WHO warns, it is not over yet. Vaccinations and immunity through exposure have greatly benefited the majority in developed countries, making the virus no longer life-threatening.

Note: Key topics in the main section are highlighted in colour to emphasize subjects that generated significant attention during the period covered.

Last but not least is a big thank you to Dr John Keegan our Treasurer who diligently proof reads each issue of ICN over the last number of years.

Editorial Notes: In endeavouring to publish links to open access articles that readers can click on and read, American Chemical Society (ACS) articles general are not open access and readers have to buy, pay a subscription or access through a university or subscribed institution. As these ACS publications are very important, not including them would be a loss so links included. Probably most readers interested in these topics will have institutional access. Readers can read the abstract and supplementary material. The DOIs are provided. Some Nature articles come under this as well but generally Nature is very generous with open access. These comments apply to this Issue and the last few Issues.

Comments, Feedback and Responses are welcome and can be sent to the **Editor Email address: -**

editor@instituteofchemistry.org

Institute of Chemistry of Ireland (chemistryireland.org)

Patrick Hobbs MSc, FICI, CChem, CSci, MRSC.
Editor
Irish Chemical News

6th January 2023

Note: Opinions expressed in this Journal are those of the authors and not necessarily those of the Institute.


9th EuChemS
CHEMISTRY CONGRESS
Dublin, Ireland 7–11 July 2024
Save the Date!
For regular e-updates about the 9th EuChemS 2024 please sign-up at
www.EUCHEMS2024.org
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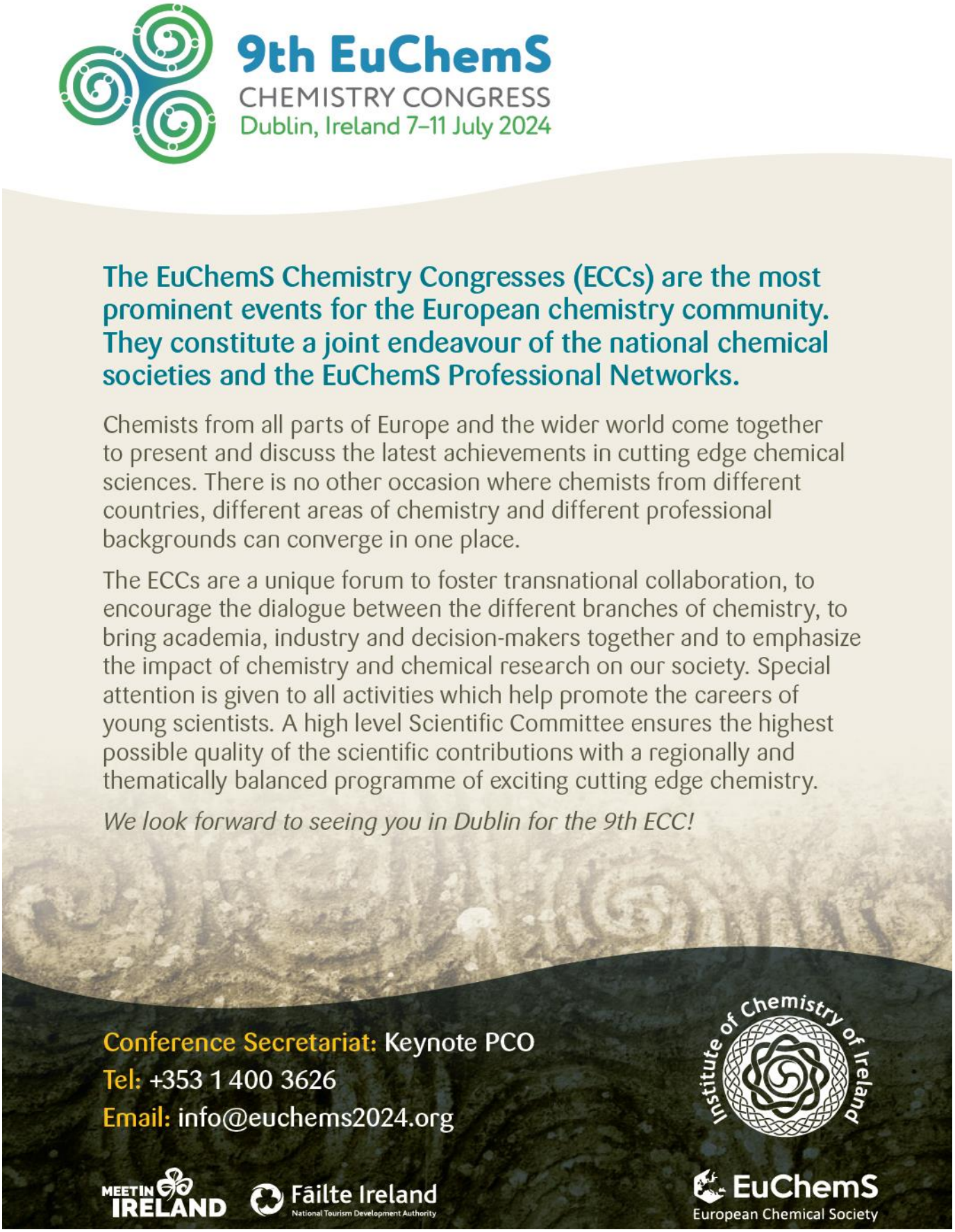
European Chemical Society
Institute of Chemistry of Ireland


9th EuChemS
CHEMISTRY CONGRESS
Dublin, Ireland 7–11 July 2024
The EuChemS Chemistry Congresses (ECCs) are the most prominent events for the European chemistry community. They constitute a joint endeavour of the national chemical societies and the EuChemS Professional Networks.
Chemists from all parts of Europe and the wider world come together to present and discuss the latest achievements in cutting edge chemical sciences. There is no other occasion where chemists from different countries, different areas of chemistry and different professional backgrounds can converge in one place.
The ECCs are a unique forum to foster transnational collaboration, to encourage the dialogue between the different branches of chemistry, to bring academia, industry and decision-makers together and to emphasize the impact of chemistry and chemical research on our society. Special attention is given to all activities which help promote the careers of young scientists. A high level Scientific Committee ensures the highest possible quality of the scientific contributions with a regionally and thematically balanced programme of exciting cutting edge chemistry.
We look forward to seeing you in Dublin for the 9th ECC!
Conference Secretariat: Keynote PCO
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EuChemS
European Chemical Society

The Institute of Chemistry of Ireland Awards

The ICI Boyle Higgins Gold Medal and Lecture Award
The ICI Annual Award for Chemistry (Eva Philbin Public Lecture Series)
The ICI Postgraduate Award

The Boyle Higgins Gold Medal and Lecture Award

The Boyle Higgins Gold Medal and Lecture Award, instituted in 1985, is an award for research work carried out in chemistry under the headings: (a) Pure Chemistry, (b) Applied and Industrial Chemistry or (c) Chemical Education. The award recognizes a chemist **of any nationality working in Ireland or a chemist who is an Irish citizen working overseas** who has made **an outstanding and internationally recognised research contribution to the advancement of chemistry.** A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

Nomination process: The nominator shall indicate in writing to the President of the Institute the category which applies to their nominee and they shall submit by email one electronic copy which will include a brief statement outlining the reasons for the nomination, together with a CV (maximum 3 pages) of the nominee. Nominations will be externally reviewed by two independent referees, who are recognised experts in the category and who are not nominators.

The ICI Annual Award for Chemistry (Eva Philbin Public Lecture Series)

This award is for a practising chemist, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner. **The recipient, who may be an Irish or international chemist of repute,** will present lectures in three locations in Ireland (including Dublin), which will be open to the public. A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

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The ICI Postgraduate Award

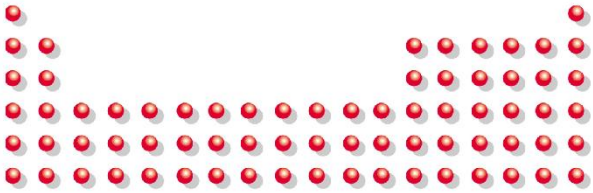
The nominee must be **a registered PhD student in any Chemistry discipline working in an Irish Higher Education Institution**. They must have demonstrated excellence in research through publications. They must also have demonstrated a commitment to supporting and promoting Chemistry within their Institution (e.g. through active participation in public engagement initiatives). A person nominated for this award must be a member of the Institute at the time of nomination or upon receipt of the award.

Nomination Process: The nominator, who must be the student's PhD supervisor, shall send one electronic copy of their nomination by email to the President of the Institute, which will include a cover letter providing a brief resume of the reasons for the nomination, together with a CV (maximum 2 pages) of the nominee.

For these awards and others see ICI website [*https://www.chemistryireland.org/awards-events*](https://www.chemistryireland.org/awards-events)

Nominations to be sent to the ICI President at: president@instituteofchemistry.org

We wish to thank the following sponsors/exhibitors.



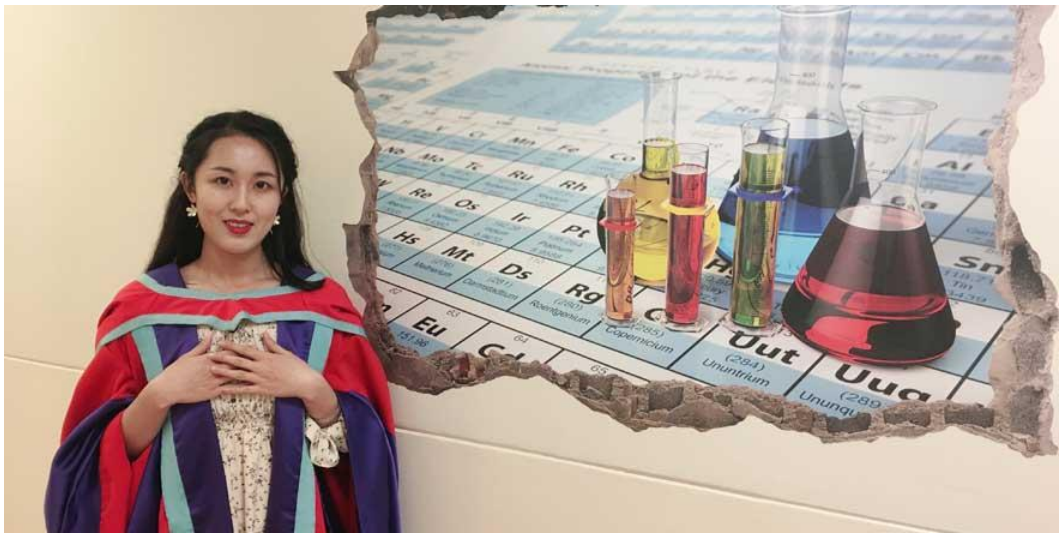
CSCB
Centre for Synthesis
& Chemical Biology

Royal Irish Academy

The Kathleen Lonsdale RIA Chemistry Prize 2023

Dr Chunchun Li wins the Kathleen Lonsdale RIA Chemistry Prize 2023

Recent Queen's University Belfast graduate wins prize for best chemistry PhD in Ireland.



Dr Chunchun Li, a recent PhD graduate of **Queen's University Belfast**, has been awarded the **2023 Kathleen Lonsdale RIA Chemistry Prize** for the best chemistry PhD thesis in Ireland. This prestigious prize is named in honour of the famous Irish x-ray crystallographer Kathleen Lonsdale and announced in January every year to mark her birthday.

Dr Li's PhD research focused on understanding and controlling the surface properties of nanomaterials. Understanding how the surfaces of nanomaterials interact with the environment and chemical substances in the environment is key to designing nanomaterials for use in applications such as sensing and catalysis. The principal technique Dr Li used to understand and control nanosurfaces was surface-enhanced Raman spectroscopy (SERS) which can give useful information on interactions on nanomaterials' surfaces.

The basis to studying the interactions between nanomaterials and the environment is to have surface-accessible nanomaterials. Besides putting up a method to synthesize surface-accessible colloidal nanoparticles with required morphology in a bottom-up manor, Dr Li also untangled the role of CTAB in inducing self-assembly of colloidal nanoparticles into multi-dimensional interfacial nanoarrays. This is significant since CTAB is commonly present in nanoparticle colloids but their role in the assembly of colloidal nanoparticles have been elusive.

The success on understanding and designing surface-accessible nanomaterials leads to another ground-breaking discovery of Dr Li's research, in which SERS combined with surface-accessible nanomaterials were used to reveal the existence of π-metal interactions between aryl molecules and IB metals under

ambient conditions. This broke the common perception and can potentially change the way people think when designing and applying metal nanomaterials.

In addition, the nanomaterials that Dr Li developed could be used for SERS sensing of pollutants, pharmaceuticals and illegal drugs. More generally, the new understandings from her PhD research will enable the rational design of sensors and catalysts with enormously enhanced performance important applications, such as therapeutic monitoring of anticancer drugs and environmental analysis.

Dr Li described her reaction to the news that she had been selected for the Kathleen Lonsdale RIA Chemistry Prize 2022:

“I am very excited and honoured to receive the prestigious Kathleen Lonsdale Prize from the Royal Irish Academy. I first heard of the prize in the second year of my PhD from Dr Yikai Xu who won the award in 2019. At the time I also learnt about Dr Kathleen Lonsdale, who became one of my inspirations as a woman in science. Therefore, being awarded this prize is extremely special to me, since it is not only a testament to my efforts during my PhD but also a huge confidence boost for me to continue to pursue even bigger goals in my research in the future. Looking at the impressive resume of previous winners, I am extremely humbled and would like to once more express my gratitude towards the Royal Irish Academy and the panel members of the Kathleen Lonsdale Prize for taking the time to read my application and for selecting me for this year's award.”

Professor Christine O’Connor, TU Dublin, chair of the assessment panel for the prize, commended the quality of this year’s competition entries:

“This year there were 13 applicants for the Kathleen Lonsdale Chemistry Prize which is the largest pool of applicants we have had in the past 5 years. As always, the standard of applications was extremely high. The applications were a real showcase of the high quality and impactful research being carried out nationally in the Chemical Sciences. It was interesting to see that many of the research projects had a focus on sustainability.”

Dr Li will receive the winner’s certificate and the €2,000 prize at a special ceremony of the Royal Irish Academy later this year. She will also be nominated by the Royal Irish Academy to represent Ireland in the 2023 IUPAC-Solvay International Award for Young Chemists. The Kathleen Lonsdale RIA Chemistry Prize is kindly supported by Henkel.

SCIENCE COMMITTEESPHYSICAL, CHEMICAL AND MATHEMATICAL SCIENCES COMMITTEEGRANTS AND AWARDS

Save the Date

AGM, ICI Awards Ceremonies and Lectures

April 20th 2023

Boyle-Higgins Gold Medal

Annual Lecture Award (Eva Philbin)

Post Graduate Award

Details of venue & times to follow.

The Institute of Chemistry of Ireland
is delighted to announce the call for nominations for the following prestigious ICI award:
The ICI Boyle Higgins Gold Medal and Lecture Award 2023

Deadline for receipt of nominations: Friday, 24th March, 2023

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Nominations to be addressed to the ICI President, Professor Pat Guiry and sent by email to: p.guiry@ucd.ie and secretary@instituteofchemistry.org

ICI website: http://www.chemistryireland.org/

Recent Past Recipients

- **2022** Professor Grace Morgan (Pure Chemistry)
- **2021** Professor Tadhg Begley (Pure Chemistry)
- **2020** Professor Amilra P. de Silva (Applied Chemistry)
- **2019** Professor Suresh Pillai (Applied Chemistry)
- **2018** Professor John Kelly (Applied Chemistry)
- **2017** Professor Henry Curran (Applied Chemistry)
- **2016** Professor Kieran Hodnett (Applied Chemistry)
- **2015** Professor Dermot Diamond (Applied Chemistry)
- **2014** Professor Pat Guiry (Pure Chemistry)
- **2013** Doctor Sheila Willis (Applied Chemistry)
- **2012** Professor Malcolm R. Smyth (Applied Chemistry)
- **2011** Professor Frank Hegarty (Pure Chemistry)
- **2009** Professor Seán Corish (Pure Chemistry)
- **2008** Professor Albert Pratt (Pure Chemistry)
- **2007** Professor Rory More O'Ferrall (Pure Chemistry)
- **2005** Professor Donald Fitzmaurice (Pure Chemistry)
- **2002** Doctor John F. O'Sullivan (Applied Chemistry)
- **2000** Professor Dervilla M.X. Donnelly (Pure Chemistry)

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Nomination process: The nominator shall send one electronic copy of their nomination by email to the President of the Institute, Professor Pat Guiry (p.guiry@ucd.ie), which will include a cover letter providing a brief statement outlining the reasons for the nomination, together with a CV (maximum 3 pages) of the nominee. Nominations for this award will be externally reviewed. Please note that self-nominations are also allowed.

Past Recipients

- **2005** Professor David A. Leigh
- **2006** Professor A. Prasanna de Silva
- **2007** Dr Mary Archer
- **2008** Professor Peter Atkins
- **2009** Professor Martyn Poliakoff
- **2011** Dr Malachy McCann
- **2012** Professor Lesley Yellowlees
- **2013** Professor Herbert W. Roeskey
- **2014** Professor Thorfinnur Gunnlaugsson
- **2015** Professor Michael J. Zaworotko
- **2016** Professor John Sodeau
- **2017** Professor Donal O'Shea
- **2018** Professor Anita Maguire
- **2019** Professor Declan McCormack
- **2020** Professor Declan Gilheany
- **2021** Professor Paula Colavita
- **2022** Professor Carmel Breslin

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Nomination Process: The nominator, who must be the student's PhD supervisor, shall send one electronic copy of their nomination by email to the President of the Institute, which will include a cover letter providing a brief resume of the reasons for the nomination, together with a CV (maximum 2 pages) of the nominee.

Nominations to be addressed to the ICI President, Professor Celine Marmion and sent to: p.guiry@ucd.ie

ICI website: http://www.chemistryireland.org

ICI Postgraduate Awardees To Date:

2022: Dr Niamh O'Mahoney (UCC) (Supervisor: Dr Dara Fitzpatrick)
2021: Dr Ioannis Mylonas Margaritis (NUIG) (Supervisor: Dr Constantina Papatriantafyllopoulou)
2020: Dr Priyanka Ganguly (Sligo IT) (Supervisor: Professor Suresh Pillai)
2020: Dr Conor Crawford (UCD) (Supervisor: Professor Stefan Oscarson)
2019: Dr Saoirse Dervin (Sligo IT) (Supervisor: Professor Suresh Pillai)
2018: Dr Adele Gabba (NUIG) (Supervisor: Professor Paul Murphy)

23rd February 2023 | The Leopardstown Pavilion, Leopardstown Racecourse

Registration Free at: Register | National Sustainability Summit

The **National Sustainability Summit**, being held on the **23rd February** in **The Leopardstown Pavilion, Leopardstown Racecourse,** will focus on the new opportunities for businesses and enterprising individuals arising from the Government's recently published Climate Action Plan, which aims to achieve a cleaner, safer and more sustainable future for Ireland.

Embracing every relevant sector – electricity, enterprise, housing, heating, transport, agriculture, waste, and the public sector – the Climate Action Plan identifies how Ireland will achieve its 2030 targets for carbon emissions, and puts the country on a trajectory to achieve net zero carbon emissions by 2050. Adopting the same model as the Government's Action Plan for Jobs, it sets out over 180 actions, together with hundreds of sub-actions that need to be taken.

For example, the Climate Action Plan aims to: move to 70% renewable electricity by 2030 – currently only 30% of our electricity comes from renewable sources; introduce 950,000 electric vehicles onto our roads and deliver a nationwide charging network; ban the sale of petrol/diesel cars from 2030; deliver reductions in greenhouse gas emissions in agriculture; and eliminate non-recyclable plastic while imposing higher fees on the production of materials which are difficult to recycle.

Other actions include: the delivery of an intensive programme of retrofitting to install 400,000 heat pumps in homes and businesses, replacing existing carbon-intensive heating systems; the establishment of a new Microgeneration Scheme, allowing homeowners to generate their own electricity and sell any excess back to the National Grid; a new Retrofit Plan to retrofit 500,000 homes, with large groups of houses being retrofitted by the same contractor to reduce costs, smart finance, and easy pay back methods; and the expansion of the network of cycling paths and 'Park and Ride' facilities to ease congestion.

Irish companies across all industrial and commercial sectors are looking to reduce their ecological footprints and are already pursuing sustainability strategies. Of course, the adoption of sustainability practices can also lead to improving operational efficiency by reducing costs, such as water and energy, and waste.

The Key Areas Focused on Include

- Energy Efficiency
- Reenable Energy
- Sustainable Packaging
- Waste & Recycling

- Water
- Circular Economy
- ESG
- Sustainable Buildings
- Sustainable Transport
- Environmental Protection
- Biodiversity

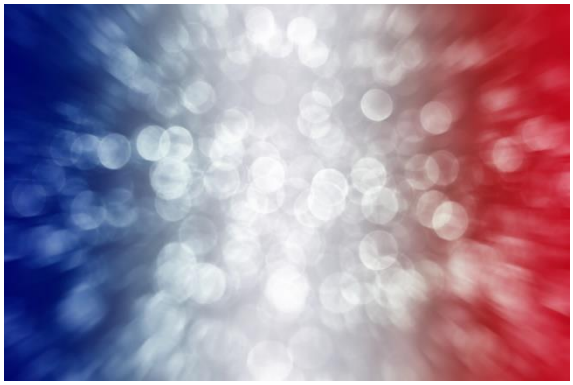
Sectors Attending

- Manufacturing
- Retail
- Food & Agriculture
- Transport & Logistics
- Public Sector
- Construction & Built Environment

National Sustainability Summit

Contact | National Sustainability Summit

Ulysses Funding Call



The Ulysses scheme fosters new collaborations between Ireland and France-based researchers by providing seed funding for reciprocal travel visits.

The 2023 call opens on the 15/02/2023.

Background

The aim of the Ulysses scheme is to foster new collaborations between Ireland and France-based researchers by providing seed funding for reciprocal travel visits. The scheme thus facilitates the exchange of innovative ideas and approaches **across all disciplines**.
In order to facilitate more collaborative engagements, funding is now provided over the course of 2 calendar years and has been increased to €5,000 each to Ireland and France-based research partners.

The Irish Research Council and the Embassy of France in Ireland are committed to supporting continued knowledge exchange between Irish and French researchers through appropriate forms of collaboration.

This year, selected research projects will also be supported by the following strategic partners:

- Electricity transmission system operator **EirGrid** will partner with France-based **Réseau de Transport d'Électricité** to support suitably aligned research projects in the area of renewable energies and smart grids.

- The **Sustainable Energy Authority of Ireland** and **ADEME**, the French Environment and Energy Management Agency, will provide support to research projects exploring topics relating to sustainable energies.

What we offer

A Ulysses award will involve researcher(s) based in Ireland travelling to France and researcher(s) based in France travelling to Ireland. Awards will be up to a maximum of €5,000 each to the lead Ireland and the

lead France-based research partner to cover travel and living expenses. These awards are simultaneously receivable and must be used by end of the 2025 calendar year.

How to apply

One electronic copy of the application form and all related attachments must be submitted via email to **ulysses@research.ie** by a person authorised by their institution to hold responsibility for research grants.
Queries not addressed in the Call Document or **Terms and Conditions** will be answered using a frequently asked questions process. Research offices may send any queries they are unable to clarify to **ulysses@research.ie**.

Key Dates

Activities	Dates
Call Open	16:00 (Irish time) 15 February 2023
FAQ Deadline	16:00 (Irish time) 6 April 2023
Applicant deadline	16:00 (Irish time) 13 April 2023
Expected call outcome	September 2023

Celebrating 25 Years of the Ulysses Scheme

In order to celebrate the 25th anniversary of the Ulysses Scheme researchers who were awarded funding in the latest round of the scheme were honoured at a special Bloomsday-themed reception hosted by the French Ambassador to Ireland, H.E. Mr. Vincent Guérend, at his Dublin residence. Since its establishment in 1997 the Ulysses scheme has funded over 700 awardees across all research disciplines, from humanities and social sciences through to engineering, earth and life sciences, mathematics, biotechnology and computer science.

Video Link: Celebrating 25 Years of the Ulysses Scheme - YouTube

In Ireland, Ulysses is funded and administered by the Irish Research Council. In France, it is funded by the French Ministry of Foreign Affairs and administered by the Embassy of France in Ireland and Campus France, the leading French agency for international mobility.

Minister Simon Harris TD appoints Professor Sinéad Ryan to the Irish Research Council

22 December, 2022

Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, has appointed leading academic, Professor Sinéad Ryan, to the Irish Research Council.

Professor Sinéad Ryan is Professor and Chair of Theoretical High Energy Physics at Trinity College Dublin. She is chair of the EuroHPC Infrastructure Advisory Group, a member of the International Advisory Board of the Mainz Institute for Theoretical Physics, and she has held Distinguished Visiting Professorships at the Institute for Advanced Study at the Technische Universität München, Germany and Institut des Hautes Études Scientifiques, France. Her research is in high energy particle physics and with a focus on Quantum Chromodynamics.

Chair of the Irish Research Council, Professor Daniel Carey, said *"We are delighted to welcome Professor Sinéad Ryan to the Irish Research Council. Professor Ryan brings very valuable expertise to the Irish Research Council at a particularly important time in its evolution in the context of major changes in the Irish research funding landscape associated with Ireland's research and innovation strategy, Impact 2030. We look forward to working with Professor Ryan as we progress the ambitions in Impact 2030 and continue to promote the value of public funded research across all disciplines"*.

Professor Kieran Conboy concludes his time on the Council after two three-year terms

Professor Carey also thanked Professor Kieran Conboy (University of Galway) for his contribution to the Irish Research Council during his two terms. He added: *"The Irish Research Council greatly benefitted from the insights of Professor Conboy over his six years of membership, in relation to strategy, our work with industry and enterprise, and many other areas. On behalf of the Irish*

Research Council, I extend our warmest thanks for his commitment and generosity in the sharing of his expertise".

Professor Robert Gerwarth named Irish Research Council Researcher of the Year

6 December, 2022

Dr. Edoardo Celeste wins Early Career Researcher of the Year, with Professor Judith Harford named as Impact Award winner

Modern history expert and author, **Professor Robert Gerwarth**, University College Dublin, has won the distinguished Irish Research Council Researcher of the Year Award for 2022.

"The Researcher of the Year Awards provide an important opportunity to recognise the very best of the excellent researchers supported by the Irish Research Council and to highlight the tangible impact of public investment in research across all disciplines. The Irish Research Council is very proud to have provided vital support to the work of our awardees at various stages of their research careers. We extend our congratulations to each of our awardees as we acknowledge their significant contributions to the understanding of our shared past, present, and future from a diversity of perspectives."

Director of the Irish Research Council, Dr Louise Callinan

Now in their sixth year, the Researcher of the Year Awards commend the exceptional Irish Research Council funded researchers making considerable contributions to knowledge, society, culture, or innovation. The winners announced today were selected by an independent expert panel, chaired by Professor Áine Hyland.

Winner of the overall Researcher of the Year Award, Robert Gerwarth, is Professor of Modern History at University College Dublin and Director of the UCD Centre for War Studies. His field of expertise is 20th-century Europe, with a particular emphasis on the history of political violence and armed conflict.

While Professor Gerwarth's principal area of interest lies in World War I, World II and German history, one of his main objectives as a scholar has been to connect different national experiences in European countries. His research has seen him examine how the Irish War of Independence and Irish Civil War relate to other examples of extreme violence in Europe, in particular in the first half of the twentieth century.

Professor Gerwarth is the author of several acclaimed popular history books, and his work has been translated into 30 languages.

Professor Gerwarth says that his first IRC award, a 2008 Major Thematic Research Grant held jointly with Professor John Horne (Trinity College Dublin), helped establish the UCD Centre for War Studies, and led to his 2009 ERC Starting Grant, the first for a humanities scholar in Ireland. He has had many funding successes subsequently, including further IRC funding, and in 2022 was awarded a highly prestigious ERC Advanced Grant.

Highly commended in the Researcher of the Year category were **Professor Maria Baghramian**, University College Dublin, and **Professor John Atkins**, University College Cork.

In addition to the overall Researcher of the Year Award, winners of the Early Career Researcher of the Year and the Impact Award were also announced today.

Dr. Edoardo Celeste, Dublin City University, won the Early Career Researcher of the Year Award. He is Assistant Professor of Law, Technology and Innovation at DCU.
His research expertise is in the new field of data law, with a special focus on the impact of the digital revolution on legal systems. He studies how fundamental rights are evolving to face the challenges of the digital age.

Among all digital rights, he specialises in the analysis of the rights to privacy and to data protection, and the regulation of mass surveillance and data retention in Europe. One of his projects involved investigating the impact of Covid-19 tracker apps on privacy rights.

He further specialises in the law and governance of social media platforms. To date, he has investigated what the constitutional rules are that can bind the actions of private multinational organisations, such as social media companies.

Highly commended in this category were **Dr. Madhusanka Liyanage** of University College Dublin, and **Dr. Giovanni Di Liberto** of Trinity College Dublin.

Professor Judith Harford, University College Dublin, was awarded this year's Impact Award. This award is given to a current or former Irish Research Council awardee who is making a highly significant impact outside of academia.
Professor Harford is Professor of Education and Deputy Head of the School of Education, UCD. Her research focus is on gender, social class and inequalities in relation to education, particularly in the Irish context.

She has applied her research to raise awareness at national level of gender and social class inequalities in education, working with policy makers to achieve greater equity in and through education.

Her most impactful public projects include a study into the under-representation of women in senior positions in higher education, funded by the IRC, which led to a symposium on gender equality in higher education held in the Royal Irish Academy.

She is leading a project called Power2Progress which is providing a dedicated programme to more than 600 senior cycle students in 21 designated disadvantaged schools nationally. She has also led a study into the participation of girls in STEM subjects in DEIS Schools.

Director of the Irish Research Council, Dr Louise Callinan, congratulated this year's winners, saying: "The Researcher of the Year Awards provide an important opportunity to recognise the very best of the excellent researchers supported by the Irish Research Council and to highlight the tangible impact of public investment in research across all disciplines. The Irish Research Council is very proud to have provided vital support to the work of our awardees at various stages of their research careers. We extend our congratulations to each of our awardees as we acknowledge their significant contributions to the understanding of our shared past, present, and future from a diversity of perspectives."

Medals of Excellence
As well as the Researcher of the Year awards, the Irish Research Council also announced today the four early career researchers who have won Medals of Excellence. The medals recognise excellence in the 2022 Government of Ireland postgraduate and postdoctoral funding calls run by the Irish Research Council in the arts, humanities and social sciences (AHSS) and science, technology, engineering and mathematics (STEM). The medals are named for former IRC Council Chairs.

Dr Claudia Dellacasa (UCD) is the winner of the Maurice J. Bric Medal for her AHSS postdoctoral proposal: 'Intersectional Eco-Polyphony: Cross-Cultural and Cross-Species Dialogues in Contemporary

Women's Writing (1960s-2020s)'. **Dr Amiya Pandit** (UCD) was awarded the Thomas Mitchell Medal for his STEM postdoctoral project: 'A Novel Combination of Tuned Mass Dampers and Sloped Wall Tuned Liquid Dampers for Vibration Control of Offshore Wind Turbines.'
The Eda Sagarra Medal was awarded to **Charitha Marcus** (Technological University Dublin) for her planned AHSS doctoral work on 'Women's Political Identity Construction through Social Media'. Finally, the Jane Crimson Medal was won by **Jack Murray** (UCC) for his STEM doctoral proposal on 'Applying AI Tools in Drug Formation Development'.

Taoiseach Micheál Martin T.D. and Minister Simon Harris T.D. announce funding for new research projects to contribute to the Government's Shared Island initiative

1 December, 2022

Projects will bring researchers together to inform development of political, policy and economic cooperation, as well as deepening social and cultural understandings on the island of Ireland.

The Taoiseach Micheál Martin T.D. and Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris T.D., have announced funding for eight new research projects under the Shared Island strand of the Irish Research Council's New Foundations programme.

The projects bring researchers North and South together to examine political, economic, civic and social cooperation and connection on the island of Ireland, and are funded by the Shared Island unit in the Department of the Taoiseach.

The awards, totalling €150,000, focus on the Shared Island priorities set by Government as part of the revised National Development Plan (2021-2030) and key issues from the Shared Island Dialogue series convened by the Government to foster inclusive civic dialogue on a shared future on the island, across two themes:

Theme 1: Political, policy and economic cooperation on the island
Theme 2: Civic, social and cultural connections and understanding on the island
The Shared Island strand of the New Foundations programme sees researchers develop partnerships either North/South on the island of Ireland, East/West between Ireland and Britain, or through an international collaboration relevant to the island of Ireland and the Good Friday Agreement.

This is the second funding announcement under the Shared Island unit and Irish Research Council partnership.

Among the research projects being funded are:

• **Dr. Conor Little, University of Limerick** who will lead a project examining the development of the policy agendas of the shared institutions of the Good Friday Agreement, and legislatures and political parties in Ireland and Northern Ireland. This project will identify what policy issues receive political attention, and how agenda-setting shapes politics and policymaking on the island of Ireland.
• **Dr. Maebh Harding, University College Dublin** project will bring together a network of legal scholars across Ireland, Northern Ireland and Britain to address emerging and complex issues of gender and law in both the immediate and long term.

• **Professor Sheila O'Donohoe, South East Technological University** is to establish a research partnership between two universities on the island of Ireland focused on sustainable finance solutions to tackle biodiversity loss. This partnership will work at the intersection of these two disciplines to make policy recommendations while strengthening North-South research links.

• **Dr Steven Hadley, Trinity College Dublin** is bringing together academics, cultural data specialists and arts sector organisations from England, Ireland and Northern Ireland to develop a data system for enhancing how cultural engagement is understood, which aims to impact on the development of policy, tourism and creative industries.

Shared Island New Foundations Programme to date:
11 projects were funded under the first call of Shared Island New Foundations awards in 2021, and these reports are now being finalised and published. These include the North-South Legal Mapping Project led by Professor Oran Doyle of Trinity College Dublin which brought together legal experts from North and South to benchmark and assess divergence and convergence across legal systems, legal knowledge and legal networks across the two jurisdictions.

The project published a **report** in October 2022, identifying high-level trends of legal convergence and divergence. Since its launch, the report has been discussed at the Irish Association of Law Teachers conference in Belfast (12 November 2022) and is also due to be discussed at a conference hosted by the Bar Council of Ireland. Eight detailed papers are also expected to be published as part of the continuation of the project in 2023.

Commenting today, **Taoiseach Micheál Martin TD**, said:
"I am pleased to announce eight new projects funded by the Government's Shared Island initiative and the Irish Research Council. This is part of a wide-ranging research programme under Shared Island, which looks to the future of this island in an inclusive, practical way, underpinned by the Good Friday Agreement. These research projects will help light the way on how we deepen beneficial cooperation and connections between people and communities in culture, science, education, law and on equality concerns. I look forward to the evidence and insights that these research projects will bring forward as they are completed next year."

Minister for Further and Higher Education, Research, Innovation and Science Simon Harris TD added: *"Research can play a significant role in building links between communities by finding solutions to common problems. The Irish Research Council's New Foundations Programme will tap into the expertise and talent in the research systems of this island – north and south – for the benefit of Shared Island goals. The funded projects will see researchers examine issues including the circular economy, cancer treatment, and post-pandemic recovery in the performing arts industry. My Department is proud to support this initiative."*

Director of the Irish Research Council, Dr Louise Callinan, added: *"The Irish Research Council is delighted to partner for the second time with the Shared Island unit of the Department of the Taoiseach. The North South Legal Mapping Project led by Professor Oran Doyle, previously funded through this scheme, is one such project which highlights how the Department of the Taoiseach's Shared Island New Foundations Awards are already contributing to the Shared Island Initiative."*
The eight projects selected for the 2022 Shared Island New Foundations Awards were funded by the Shared Island unit in the Department of the Taoiseach under strand 8 of the IRC New Foundations Programme. Full details of each project can be found **here** on the IRC website.

Irish Research Council to invest €24 million in ground-breaking, 'curiosity-driven' research

10 October, 2022

Ukrainian researcher who came to Ireland due to the war to collaborate on one of the newly awarded projects

An investment of almost €24 million in 'curiosity-driven' frontier research was announced today by Minister for Further and Higher Education, Research, Innovation and Science Simon Harris, T.D. The investment will fund 48 ground-breaking research projects under the Irish Research Council's Starting and Consolidator Laureate Awards Programme.

Under the scheme, researchers will receive funding for cutting-edge projects equally divided across the fields of the humanities; physical sciences and engineering; life sciences; and social sciences. Their research areas range from new approaches to treatment for diseases such as cancers and chronic obstructive pulmonary disease, 6G technology development, interculturalism in rural Ireland, changing storm patterns and the communication of climate science.

The Laureate programme encompasses two streams of funding, namely 'starting' funding for early-career researchers who are to receive €400,000 each and 'consolidator' funding for mid-career researchers who are to receive €600,000 each.

A Ukrainian researcher will collaborate on one of the newly awarded projects in UCD as part of the IRC's Ukrainian Researcher Scheme. The scheme was established so that researchers from Ukraine who are arriving in Ireland due to the war could be supported by the Irish research system.

Announcing the awards, Minister Harris said:

"I am delighted to announce the winners of the second round of the Irish Research Council's Starting and Consolidator Laureate Awards Programme and I congratulate each of the awardees. It is a pleasure to also welcome the Ukrainian researcher who came to Ireland from the war in Ukraine, and who will collaborate on one of the newly funded projects through the IRC's innovative Ukrainian Researchers Scheme.
These talented researchers will no doubt contribute hugely towards the world-class excellence that is the bedrock of our research system in Ireland, pushing the boundaries of research knowledge and finding new discoveries that deepen our understanding of the world around us, by looking to the past, questioning the present, and unlocking our future potential."
Also commenting, Dr Louise Callinan, Director of the Irish Research Council, said: *"The 48 researchers who will receive funding under the Starting and Consolidator Laureate Awards Programme have the potential to make ground-breaking advances in their respective fields and to bolster Ireland's competitiveness in European research funding.*
This is the second round of Laureate funding and many of the first-round awardees will be completing their research next year. It is testament to the success of the programme that three of the first-round

awardees have already gone on to receive European Research Council funding, one as part of Ireland's first ERC Synergy grant worth €10 million.
The winning projects were awarded on the basis solely of excellence, and applications were assessed through a rigorous and independent international peer-review process.

Successful Projects

Among the research projects receiving funding are:

- **'Non-communicable diseases including cancer (and except disorders of the nervous system and immunity-related diseases)', Dr Tríona Ní Chonghaile, RCSI University of Medicine and Health Sciences:**

Taking age as being the biggest risk factor for cancer, this project will investigate the dynamic effect that age has on tumour biology and treatment responses, in an effort to make this risk factor better understood.

- **'Imaginative Literature and Social Trust, 1990-2025', Dr Adam Kelly, UCD:**

By comparing contemporary imaginative literature from the US, Russia and Ireland, this project will look at how social trust functions and how it fails, with a view to identifying better, more justified, and more sustainable forms of trust.

- '**Rural Villages, Migration, and Intercultural Communication', Dr Andrea Ciribuco, University of Galway:**

This project will work with rural communities in Ireland to understand how different languages and cultures coexist in these environments, investigating the obstacles and opportunities for intercultural interaction in rural areas.

- **'The battle for iron in the alveolar space underlies susceptibility to Chronic Obstructive Pulmonary Disease', Prof Suzanne Cloonan, Trinity College Dublin:**

The link between iron overload in the lung with susceptibility to the inflammatory lung disease known as chronic obstructive pulmonary disease (COPD) will be examined in this project.

- **'Gene Editing with Nucleic Acid Click Chemistry', Dr Andrew Kellett, DCU:**

This research project seeks to develop a new type of gene technology that will be tested against cancer causing genes that are present in aggressive human cancers.

- **'Holocene Storminess in Ireland', Dr Lisa Orme, Maynooth University:**

This project will examine how periods with intense or frequent storms can cause societal challenges in Ireland, particularly for coastal communities, and seek to discover whether storminess in Ireland increased or decreased during past warm periods.

- '**Examining the Potential of Communicative Deliberation for Climate Action', Dr Jane Suiter, DCU:**

This project will seek to bridge the communicative mismatch between climate science, citizens and policymakers utilising insights from three disciplines: deliberative democracy; science communication; and political psychology.

Download the full list of Laureate awardees 2022

The Institute of Chemistry of Ireland

Irish Young Chemists' Network (IYCN)

After the ICI Postgraduate Chemistry Research Symposium held online in September 2020 was a success, an idea was put forward to establish an Irish Young Chemists' Network (IYCN) as part of the Institute of Chemistry of Ireland (ICI). This initiative was highly welcomed and encouraged by both the postgraduates in attendance of the online symposium and approved by the ICI Council Members during their Council meeting on the 1st October 2020.

The committee of the online research symposium was made up of postgraduate students from various institutions in Ireland. As this committee worked in great harmony together, and had already established connections while organising the symposium, it was suggested to keep this committee for the IYCN. The members were all happy and motivated to be part of the IYCN committee. Together, we have summarised some of the benefits of establishing the Irish Young Chemists' Network to include:

1) **Community, network and connection of young chemists**
2) **More opportunities for collaboration between early stage researchers**
3) **Organisation of conferences and events for young chemists**
4) **Opportunity for postgraduate students to present and discuss their work**
5) **A platform to promote upcoming positions suited for young chemists**

The committee feel strongly about the first benefit especially during these times. We feel that the mental health of young chemists, including postgraduate students, is critical and essential. A sense of community and closeness, particularly during moments like these, would surely be beneficial to their mental health. As the chair of the committee, I will work together with the wonderful team of postgraduate students to establish the IYCN, while liaising and updating the ICI Council periodically as well as continue to avail of their expertise and support.

Mark Kelada, B.Sc. MICI Ph.D.

ICI Young Chemist Representative and Chair of Irish Young Chemists' Network

Are you a chemist in Ireland aged between 18-35 years old? Want to be part of an exciting new network of young chemists and be part of a growing community? Join us today by emailing youngchemists@instituteofchemistry.org with your name, age, and where you study or work. If your institution is not listed below, you could even be part of our incredible committee.

New Committee 2023:

Name	Position	Representation
Colm McKeever	Chairperson	MU
Jessica O'Neill	Vice-Chairperson	DCU
Sean Byrne	Secretary	UCD
Liam Fitzgerald	Treasurer	NUIG
Cathal Kelly	PRO	QUB
Siobhán O'Flaherty	Committee member	RCSI
Hong Ann Gan	Committee member	TUS
Matthew McCole	Committee member	ATU
Wiktoria Brytan	Committee member	UL
Neil Curtis	Committee member	UCC
Joseph Byrne	Advisor (non-voting)	UCD

ICI-YCN Quiz

On the 24th of November, teams from up and down the country competed in the first ICI-YCN Interdepartmental Quiz. This hybrid event featured 16 teams from MU, QUB, DCU, UL, AIT, NUIG and ATU, and covered topics ranging from bond angles to Heath Ledger films. With several competitive teams, the final round proved to be decisive, with UL's "Ion the Prize" scoring maximum points and taking home the prize. The ICI-YCN would like to thank all our competitors for helping us make a thoroughly enjoyable event, and we look forward to next year's quiz!

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Physical Chemistry Chemical Physics
21 December 2022,
Issue 47, Number 47
Page 28643 to 29242

Support our Institute by publishing your new research results in this prestigious peer reviewed journal.

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Scope

PCCP (*Physical Chemistry Chemical Physics*) is an international journal for the publication of cutting-edge original work in physical chemistry, chemical physics and biophysical chemistry. To be suitable for publication in *PCCP*, articles must include significant new physical insights; this is the prime criterion that referees and the Editors will judge against when evaluating submissions.

The journal has a broad scope which includes spectroscopy, dynamics, kinetics, statistical mechanics, thermodynamics, electrochemistry, catalysis, surface science, quantum mechanics and theoretical developments play an important part in the journal. Interdisciplinary research areas such as polymers and soft matter, materials, nanoscience, surfaces/interfaces, and biophysical chemistry are especially welcomed whenever they include a physico-chemical approach.

PCCP is proud to be a Society journal and is co-owned by 19 national chemical societies. The journal is published by the Royal Society of Chemistry on a not-for-profit basis for the benefit of the whole scientific community.

Impact factor: 4.493*
Publishing frequency: 48 per year
Indexed in MEDLINE and Web of Science

Chemistry and related Sciences around the World

Chemistry & Related Technologies

Pfizer to invest €1.2bn in Dublin and hire for hundreds of jobs
1 December
Pfizer to invest €1.2bn in Dublin and hire for hundreds of jobs (siliconrepublic.com)

"Ultra-shock-absorbing" foam packs a plethora of carbon nanotubes
2 December
"Ultra-shock-absorbing" foam packs a plethora of carbon nanotubes (newatlas.com)

Photoinduced β-fragmentation of aliphatic alcohol derivatives for forging C–C bonds | Nature Communications
2 December
Photoinduced β-fragmentation of aliphatic alcohol derivatives for forging C–C bonds | Nature Communications
DOI https://doi.org/10.1038/s41467-022-35249-7

Metallurgist explains the surprising properties of aluminium
2 December
Metallurgist explains the surprising properties of aluminum (phys.org)
More information: Zero-waste production of alumina in Europe: cordis.europa.eu/article/id/44 … of-alumina-in-europe

Going back to basics yields a printable, transparent plastic that's highly conductive
2 December
Going back to basics yields a printable, transparent plastic that's highly conductive (phys.org)
DOI: 10.1002/anie.202211600

New theory explains magnetic trends in high-temperature superconductors
1 December
New theory explains magnetic trends in high-temperature superconductors (phys.org)
DOI: 10.1126/science.abm2295

Zapped, infrared-heated lentils are more nutritious and 'greener' to process
2 December
Zapped, infrared-heated lentils are more nutritious and 'greener' to process (phys.org)
DOI: 10.1016/j.focha.2022.100091

Earth's Oxygen Came From an Unexpectedly Deep And Hot Source, Study Suggests : ScienceAlert

3 December

Earth's Oxygen Came From an Unexpectedly Deep And Hot Source, Study Suggests : ScienceAlert

Anisotropic phenanthroline-based ruthenium polymers grafted on a titanium metal-organic framework for efficient photocatalytic hydrogen evolution | Communications Chemistry

3 December

Anisotropic phenanthroline-based ruthenium polymers grafted on a titanium metal-organic framework for efficient photocatalytic hydrogen evolution | Communications Chemistry (nature.com)

DOI https://doi.org/10.1038/s42004-022-00763-8

Broadly Tunable Atmospheric Water Harvesting in Multivariate Metal–Organic Frameworks | Journal of the American Chemical Society

29 November

Broadly Tunable Atmospheric Water Harvesting in Multivariate Metal–Organic Frameworks | Journal of the American Chemical Society (acs.org)

https://doi.org/10.1021/jacs.2c09756

General Synthesis of MOF Nanotubes via Hydrogen-Bonded Organic Frameworks toward Efficient Hydrogen Evolution Electrocatalysts | ACS Nano

2 December

General Synthesis of MOF Nanotubes via Hydrogen-Bonded Organic Frameworks toward Efficient Hydrogen Evolution Electrocatalysts | ACS Nano

https://doi.org/10.1021/acsnano.2c08245

Single-molecule characterization of subtype-specific β1 integrin mechanics | Nature Communications

3 December

Single-molecule characterization of subtype-specific β1 integrin mechanics | Nature Communications

DOI https://doi.org/10.1038/s41467-022-35173-w

Chemists Discover Why Synonymous DNA Mutations Are Not Always Silent

5 December

Chemists Discover Why Synonymous DNA Mutations Are Not Always Silent (scitechdaily.com)

DOI: 10.1038/s41557-022-01091-z

Paper-mill detector put to the test in push to stamp out fake science

2 December

Paper-mill detector put to the test in push to stamp out fake science (nature.com)

doi: https://doi.org/10.1038/d41586-022-04245-8

Inside the Proton, the 'Most Complicated Thing You Could Possibly Imagine'

19 October

Inside the Proton, the 'Most Complicated Thing' Imaginable | Quanta Magazine

New Catalyst Can Turn a Smelly Gas Byproduct Into a Cash Cow

3 December

https://scitechdaily.com/new-catalyst-can-turn-a-smelly-gas-byproduct-into-a-cash-cow

A growth selection system for the directed evolution of amine-forming or converting enzymes | Nature Communications

3 December
A growth selection system for the directed evolution of amine-forming or converting enzymes | Nature Communications
DOI https://doi.org/10.1038/s41467-022-35228-y

Nano, it's a small world after all: how tiny are nanomaterials and why are they useful? - YP | South China Morning Post

6 December
Nano, it's a small world after all: how tiny are nanomaterials and why are they useful? - YP | South China Morning Post (scmp.com)

A new milestone for laser technology: Seeded free-electron lasers

5 December
A new milestone for laser technology: Seeded free-electron lasers (phys.org)
DOI: 10.1038/s41566-022-01104-w

A General Strategy to Install Amidine Functional Groups Along the Peptide Backbone | Journal of the American Chemical Society

5 December
A General Strategy to Install Amidine Functional Groups Along the Peptide Backbone | Journal of the American Chemical Society (acs.org)

Resurrecting Billon-Year-Old Enzymes – Scientists Reveal New Key Information About Photosynthesis

4 December
Resurrecting Billon-Year-Old Enzymes – Scientists Reveal New Key Information About Photosynthesis (scitechdaily.com)
DOI: 10.1126/science.abq1416

European Institute of Innovation & Technology announces €890m funding round

6 December
European Institute of Innovation & Technology announces €890m funding round - TechCentral.ie

New Structures To Harvest an Almost Limitless Supply of Freshwater

6 December
New Structures To Harvest an Almost Limitless Supply of Freshwater (scitechdaily.com)
DOI: 10.1038/s41598-022-24314-2

Exploring nanodiamonds that can be activated as photocatalysts with sunlight

30 November
Exploring nanodiamonds that can be activated as photocatalysts with sunlight (phys.org)
DOI: 10.1039/D2NR03919B

Microstructured fiber measures the size of nanoparticles

6 December
Microstructured fiber measures the size of nanoparticles (phys.org)
DOI: 10.1002/smll.202202024

Catalytic nitrogen fixation using visible light energy | Nature Communications

1 December

Catalytic nitrogen fixation using visible light energy | Nature Communications

DOI https://doi.org/10.1038/s41467-022-34984-1

Fully Solution-Based AgNW/AlOx Nanocomposites for Stable Transparent Heaters | ACS Applied Electronic Materials

6 December

Fully Solution-Based AgNW/AlOx Nanocomposites for Stable Transparent Heaters | ACS Applied Electronic Materials

https://doi.org/10.1021/acsaelm.2c01007

Mechanochemistry: Working Toward a Sustainable Future

9 December

Mechanochemistry: Working Toward a Sustainable Future (azom.com)

Structure of SpoT reveals evolutionary tuning of catalysis via conformational constraint | Nature Chemical Biology

5 December

Structure of SpoT reveals evolutionary tuning of catalysis via conformational constraint | Nature Chemical Biology

DOI https://doi.org/10.1038/s41589-022-01198-x

Spin-defect qubits in two-dimensional transition metal dichalcogenides operating at telecom wavelengths | Nature Communications

6 December

Spin-defect qubits in two-dimensional transition metal dichalcogenides operating at telecom wavelengths | Nature Communications

DOI https://doi.org/10.1038/s41467-022-35048-0

Five exotic nuclei half-lives revealed in first experiment at FRIB – Physics World

6 December

Five exotic nuclei half-lives revealed in first experiment at FRIB – Physics World

Aromaticity in Fully π-Conjugated Open-Cage Molecules | Journal of the American Chemical Society

7 December

Aromaticity in Fully π-Conjugated Open-Cage Molecules | Journal of the American Chemical Society (acs.org)

https://doi.org/10.1021/jacs.2c10859

Multipod Bi(Cu2-xS)n Nanocrystals formed by Dynamic Cation–Ligand Complexation and Their Use as Anodes for Potassium-Ion Batteries | Nano Letters

6 December

Multipod Bi(Cu2-xS)n Nanocrystals formed by Dynamic Cation–Ligand Complexation and Their Use as Anodes for Potassium-Ion Batteries | Nano Letters (acs.org)

https://doi.org/10.1021/acs.nanolett.2c03933

Lexology: European General Court Annuls Harmonized Classification and Labeling of Titanium Dioxide.

6 December

European General Court Annuls Harmonized Classification and Labeling of Titanium Dioxide - Lexology

4000 Tons Released Annually: Hazardous Herbicide Chemical Goes Airborne

6 December
4000 Tons Released Annually: Hazardous Herbicide Chemical Goes Airborne (scitechdaily.com)
DOI: 10.1021/acs.est.2c03740

Metallaphotoredox-Enabled Construction of the P(O)–N Bond from Aromatic Amines and P(O)–H Compounds | Organic Letters

6 December
Metallaphotoredox-Enabled Construction of the P(O)–N Bond from Aromatic Amines and P(O)–H Compounds | Organic Letters (acs.org)
https://doi.org/10.1021/acs.orglett.2c03860

Enantioselective Copper-Catalyzed Borylative Amidation of Allenes | Journal of the American Chemical Society

6 December
https://pubs.acs.org/doi/10.1021/jacs.2c10507
https://doi.org/10.1021/jacs.2c10507

New method of reducing carbon dioxide could be a golden solution to pollution

8 December
New method of reducing carbon dioxide could be a golden solution to pollution (phys.org)
DOI: 10.1007/s12274-022-5159-8

Organocatalyst-mediated five-pot synthesis of (–)-quinine | Nature Communications

7 December
Organocatalyst-mediated five-pot synthesis of (–)-quinine | Nature Communications
DOI https://doi.org/10.1038/s41467-022-34916-z

Pesticide lobbyists pushing against environmental protections, research finds

8 December
Pesticide lobbyists pushing against environmental protections, research finds (thejournal.ie)

High-Level Data Fusion Enables the Chemoinformatically Guided Discovery of Chiral Disulfonimide Catalysts for Atropselective Iodination of 2-Amino-6-arylpyridines | Journal of the American Chemical Society

7 December
https://pubs.acs.org/doi/10.1021/jacs.2c08820
https://doi.org/10.1021/jacs.2c08820

Unexpected speed-dependent friction in graphene

7 December
Unexpected speed-dependent friction in graphene (phys.org)
DOI: 10.1021/acs.nanolett.2c03667

Prof Luke O'Neill appointed to ERC Scientific Council - TechCentral.ie

9 December
Prof Luke O'Neill appointed to ERC Scientific Council - TechCentral.ie

Synthesis of material that absorbs electromagnetic waves in the 6G band

7 December
Synthesis of material that absorbs electromagnetic waves in the 6G band (phys.org)
DOI: 10.1039/D2CC03168J

Experimental nanosheet material marks a step toward the next generation of low-power, high-performance electronics

8 December
Experimental nanosheet material marks a step toward the next generation of low-power, high-performance electronics (phys.org)
DOI: 10.1007/s12274-022-5229-y

International research team creates previously unknown nitrogen compounds

9 December
International research team creates previously unknown nitrogen compounds (phys.org)
DOI: 10.1002/chem.202201998

Compliant and conductive carbon nanomaterial for on-skin electronics

3 December
Compliant and conductive carbon nanomaterial for on-skin electronics (inceptivemind.com)
DOI: 10.1021/acsnano.2c06169

Designing better electrolytes | Science

9 December
Designing better electrolytes | Science
DOI: 10.1126/science.abq3750

Team undertakes study of lithium deposition behavior in hard carbon hosts

8 December
Team undertakes study of lithium deposition behavior in hard carbon hosts (phys.org)
DOI: 10.1007/s12274-022-5256-8

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Aluminum-Doped Catalyst Cuts Haber-Bosch Costs & 7 Other Articles

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Division of Medicinal and Biological Chemistry of the Institute of Chemistry of Ireland

Medicinal Chemistry, Chemical Biology & Life Sciences

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Sunscreen Testing Is Riddled With Problems You've Probably Never Considered : ScienceAlert

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The paradox of anti-inflammatory drugs | Drug Discovery News

Groundbreaking Study Finds Treatment Effective for Rheumatoid Arthritis Patients

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Cholesterol-Lowering Drugs Associated With Decreased Risk of Bleeding Stroke

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The Power of PK/PD in mAb Development

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Already Spread to Every Continent: Unusual Fungus Has the Potential To Become a Global Health Problem

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These 5 biomedical advances gave 2022 a sci-fi feel

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Diabetes Drug Metformin May Protect Hips and Knees | Everyday Health

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An extra sticky mussel-inspired skin graft heals without scars

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Regenerative Medicine Breakthrough: Cellular "Glue" To Regenerate Tissues, Heal Wounds, Regrow Nerves

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Tattoo therapeutics deliver medicine more than skin deep

12 October

Tattoo therapeutics deliver medicine more than skin deep | Drug Discovery News

New Study Indicates This Vitamin Can Significantly Reduce Your Risk of Bone Fractures

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New Study Indicates This Vitamin Can Significantly Reduce Your Risk of Bone Fractures (scitechdaily.com)

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Meet the microrobots primed to take down cancer

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Meet the microrobots primed to take down cancer | Drug Discovery News

Enzyme that defends human cells against viruses may be a potential target for future cancer treatments

28 December

Enzyme that defends human cells against viruses may be a potential target for future cancer treatments (news-medical.net)

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Green synchronous spectrofluorimetric method for the simultaneous determination of agomelatine and venlafaxine in human plasma at part per billion levels | Scientific Reports

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Animal microbiomes hold the key to new antifungals
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Animal microbiomes hold the key to new antifungals | Drug Discovery News

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EU Regulations Fall Short Over Environmental Emission of Pharmaceutical Manufacturing Waste | Technology Networks

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Breakthrough in treating superbugs like MRSA by University of Galway scientists (irishexaminer.com)

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27 January
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A crash course in biotech success — and failure

30 January
A crash course in biotech success — and failure (nature.com)

EuChemS
European Chemical Society

EuChemS Magazine Launched

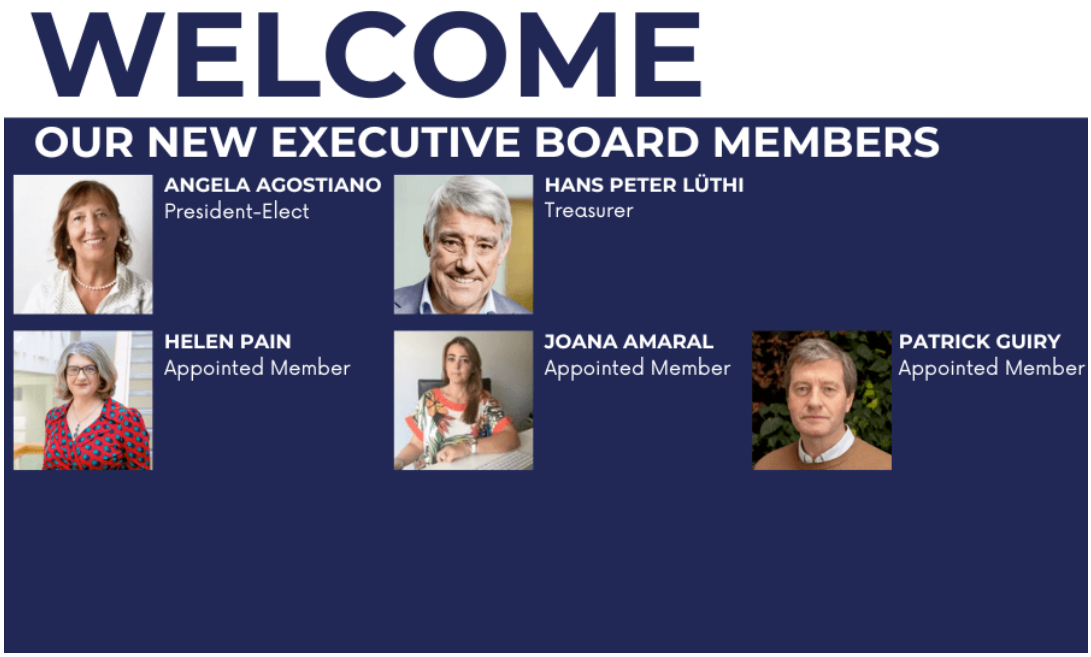
Jan 25, 2023

With the beginning of 2023, we established the brand new Serial Publication of the European Chemical Society, EuChemS Magazine, succeeding Chemistry in Europe and Brussels News Updates. You can read EuChemS Magazine here!

The new EuChemS Magazine is a fresh, modern publication, which contains the latest key briefings from EU science policy and breaking updates about EuChemS. Every three months, EuChemS Magazine Plus will also release (starting from this March), with more in depth analytical research policy and perspective articles, editorials and interviews. We invite all, in particular, member societies and professional networks to contribute to EuChemS Magazine Plus.

If you are subscribed to either of our previous newsletters, you don't have to worry – your subscription is automatically transferred to EuChemS Magazine. If you are not yet, and you would like to receive subscribed we invite you to do so here!

Changes in EuChemS Executive Board



New EuChemS Executive Board Members began their terms on 1 January 2023.

President-Elect Angela Agostiano and Treasurer Hans Peter Lüthi were elected by the EuChemS General Assembly in Lisbon in 2022. Angela Agostiano will serve one year as President-Elect, after which she will succeed Floris Rutjes as the President of EuChemS. She is a Full Professor at the University of Bari Aldo Moro, Italy. Her area of expertise is chemical-physical processes. She was also the first woman President of the Italian Chemical Society, where she focused on connecting different disciplinary areas and societal challenges.

Hans Peter Lüthi was an adjunct professor at the ETH Zurich Department of Chemistry and Applied Biosciences, Switzerland. He also served as a Treasurer for the Swiss Chemical Society (SCS) as well as the Director of its Foundation. He succeeded Eckart Rühl as EuChemS Treasurer.

Helen Pain, CEO of the Royal Society of Chemistry (RSC) began her first term as an appointed Executive Board member. She is a Chartered Chemist and a Chartered Scientists.

Joana Amaral started in the same capacity, representing EuChemS Professional Networks. She is an Adjunct Professor at the Department of Chemical and Biological Technology of the Polytechnic Institute of Bragança, Portugal, and the Chair of EuChemS Division of Food Chemistry.

Patrick Guiry, Full Professor of synthetic organic chemistry at University College Dublin became an appointed member, representing the Irish Chemical Society, the host of the 10th EuChemS Chemistry Congress (ECC9) in Dublin, to be held in 2024.

With the end of 2022, the term of Pilar Goya as Vice President, as well as the term of Eckart Rühl as Treasurer ended. In addition, we also bid farewell to Robert Parker (RSC) and Péter Szalay (Chair of EuChemS Division of Computational and Theoretical Chemistry) as appointed members. EuChemS warmly thanks them for their hard work for and impactful contributions towards European chemistry.

Professional Networks

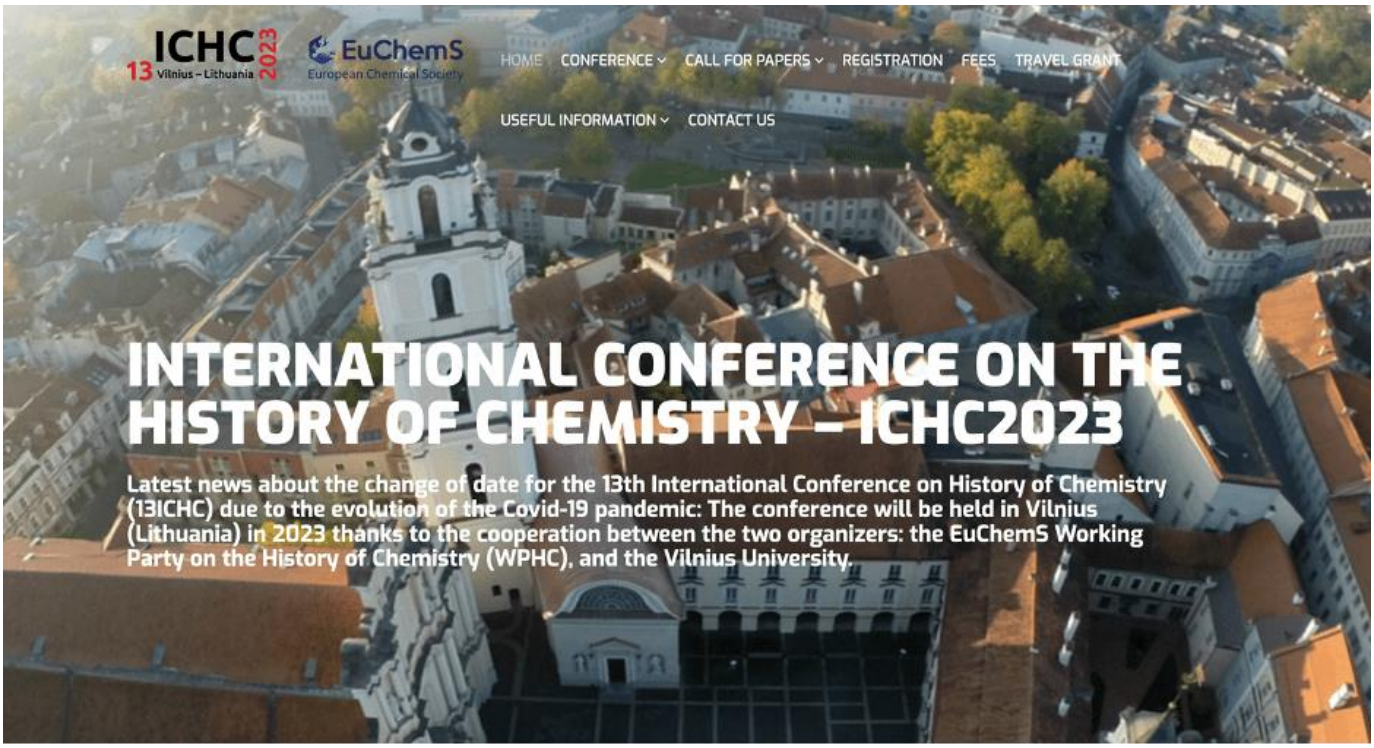
EuChemS scientific Divisions and Working Parties enhance networking in their own fields of expertise and promote collaboration with other European and international organisations. These professional networks organise high quality scientific conferences in chemical and molecular sciences and interdisciplinary areas.

Guidelines for Divisions and Working Parties

- Nomination of Delegates by EuChemS Member Organisations

- Division of Analytical Chemistry (Chair: Marcela Segundo)
- Division of Chemical Education (Chair: Rachel Mamlock-Naaman)
- Division of Chemistry and Energy (Chair: Aline Auroux)
- Division of Chemistry and the Environment (Chair: Ioannis Katsoyiannis)
- Division of Chemistry in Life Sciences (Chair: Sonsoles Martín Santamaría)
- Division of Computational and Theoretical Chemistry (Chair: Tanja van Mourik)
- Division of Food Chemistry (Chair: Joana Amaral)
- Division of Green and Sustainable Chemistry (Chair: Ana Aguiar Ricardo)
- Division of Inorganic Chemistry (Chair: Yulia Gorbunova)
- Division of Nuclear and Radiochemistry (Chair: Marko Štrok)
- Division of Organic Chemistry (Chair: Patrick Guiry)
- Division of Organometallic Chemistry (Chair: Martin Albrecht)
- Division of Physical Chemistry (Chair: Wolfgang Kautek)
- Division of Solid State and Materials Chemistry (Chair: Paul Attfield)
- Working Party on Chemistry for Cultural Heritage (Chair: Elena Badea)
- Working Party on Ethics in Chemistry (Chair: Anca Silvestru)
- Working Party on Formulation in Chemistry (Chair: Alain Durand)
- Working Party on the History of Chemistry (Chair: Annette Lykknes)
- European Young Chemists´ Network (Chair: Maximilian Menche)

13th International Conference on the History of Chemistry (13ICHC)



23/05/2023 - 27/05/2023

All Day

ADD TO CALENDAR
Download ICS Google Calendar iCalendar Office 365 Outlook Live

Vilnius University, Central Building
Universiteto 3, Vilnius

Event information

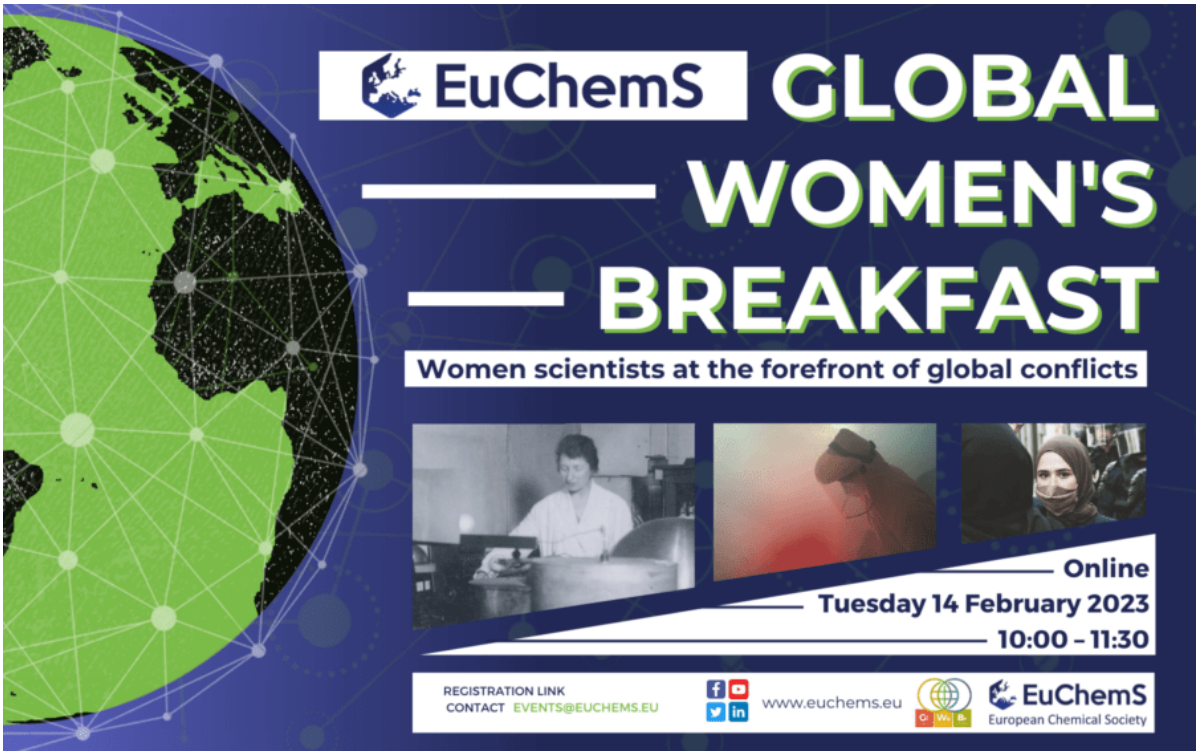
Location
13th International Conference on the History of Chemistry (13ICHC) - EuChemS

Registration

You can register, and find up-to-date information about the event, speakers, deadlines and the venue below:-

Register here

Women scientists at the forefront of global conflicts



About the event

EuChemS is proud to announce its 2023 Global Woman Breakfast online event, titled "*Women scientists at the forefront of global conflicts".* The online event will take place on
Tuesday 14 February 2023 10:00 – 11:30 Brussels time.

It is important to acknowledge that science and technology plays a significant role in contemporary conflict. While scientific achievements advanced the quality of life greatly, innovation in technology has also transformed conflicts across the globe in the last century. By taking this into account, we can see science's responsibility in ensuring the minimisation of harm coming from conflict. As conflicts scenarios tend to increase exposure to abuse and discrimination, women represent one of the highly vulnerable groups in conflict. Therefore we find it crucial to hear and learn from the inputs of women researchers and scientists who are involved with science in conflict.

Therefore EuChemS's 2023 GWB event will focus on the historical context of what roles women played in research areas relevant to conflict and crisis, such as nuclear and radiochemistry. The event will also examine contemporary efforts from woman researchers in fighting against chemical warfare, amongst other topics.

Remember the date – 14.02.2023 – and stay tuned for more details.

EuChemS Global Women's Breakfast event is part of IUPAC's Global Women's Breakfast (#GWB2023) initiative.

Registration

The event is free to attend, however registration is mandatory.

Please register below.
Registration Ctry + Click

We invite you to propose questions for the speakers during registration.

Programme and Speakers

Programme
Invited speakers
Hosts

European Chemical Biology Symposium (8ECBS)

09/05/2023 - 11/05/2023 – AstraZeneca, AstraZeneca, PGN entrance. Pepparedsleden 5, 431 53 Mölndal, Gothenburg, SWEDEN, Gothenburg.

Event Information

The inaugural ELRIG meeting on Therapeutic OLIGOs combined with the 8th European Chemical Biology Symposium (ECBS) will be held on May 9-11 at the beautiful AstraZeneca R&D site in Gothenburg. This interactive 3-day event will host leading scientists from academia, industry and the vendor community to discuss recent advancements in the discovery of therapeutic OLIGOs and in the Chemical Biology research field in Europe and internationally. The ECBS part of the meeting is co-organized by EU-OPENSCREEN and the EuChemS Division of Chemistry in Life Sciences, and includes contributions from key academic chemical biology research groups in Europe. Our ambition is to create an open access meeting and an inspiring environment for networking between biologists and chemists to fuel cross-fertilisation between research areas.

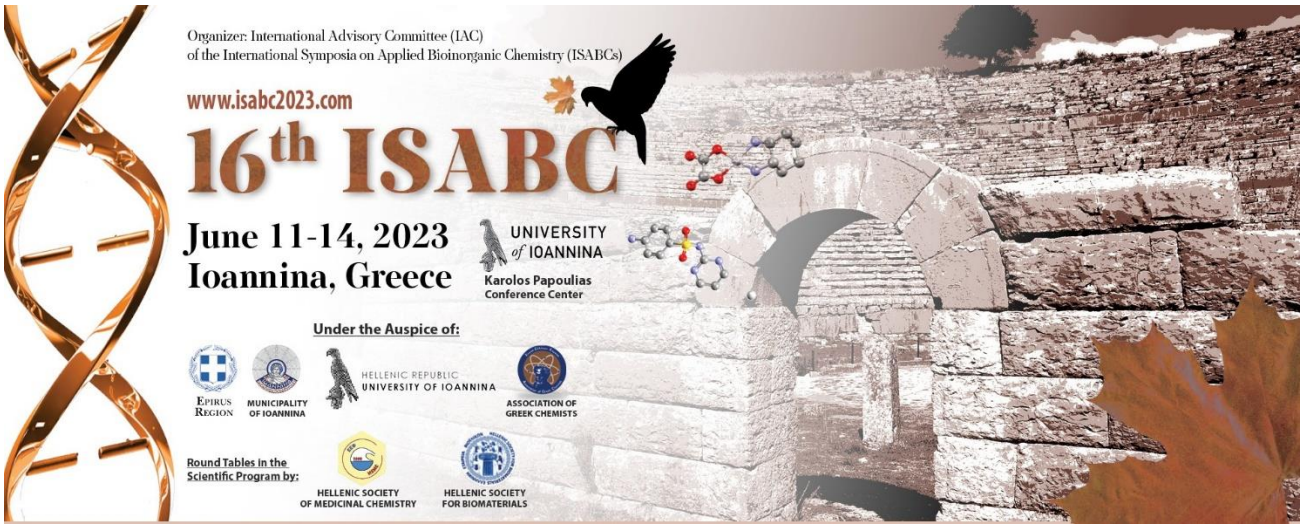
OLIGOs such as ASOs, siRNAs and other mRNA-targeted therapeutics are impacting patients daily. To further expand the scope of these drug modalities the field is exploring new ways to formulate and distribute the cargo to improve the reach of additional disease-relevant tissue. Efforts include various ways of targeting the delivery, for example by conjugating the cargo to functional groups that interact with specific cell types. This is one area in which developments interplay with the field of chemical biology, where the aim is to exploit chemistry for the purpose of understanding and manipulating biology. With the recent announcement of the latest Nobel Prize in Chemistry for bio-orthogonal chemistry and click chemistry, there is more reason than ever to discuss the next advancements that will impact our understanding of and man-made changes to biology. This meeting will explore these opportunities and challenges in six focus areas as outlined at the web page (https://www.elrig.org/portfolio/elrigs-therapeutic-oligos-european-chemical-biology-symposium-2023/).

Registration

You can register, and find up-to-date information about the event, speakers, deadlines and the venue below:

Register here

16th International Symposium on Applied Bioinorganic Chemistry (16th ISABC)



11/06/2023 - 14/06/2023 - *Conference Venue Karolos Papoulias* **University of Ioannina, Ioannina, Greece , Ioannina**

Event Information

Dear Colleagues, On behalf of the organizing committee, I would like to invite you to participate in the 16th International Symposium on Applied Bioinorganic Chemistry (16-ISABC).

It will be held in 11-14 June 2023, in Ioannina, Greece. This is the 16th Symposium of the series and it will cover all branches of modern applied bioinorganic chemistry.

Scientific program sessions:

Metals in Medicine and Biology, Metallomics, Metalloproteins Structures, Metals Complexes Interaction with RNA, DNA or Proteins, Bioinorganic Biomaterials, Biomimetic and Bioinspired Bioinorganic Chemistry and Energy Conversion, Metal Toxicology and Metals in Environment and Biophysical, Biochemical and Spectroscopic Methods in Bioinorganic Chemistry.

Registration

You can register, and find up-to-date information about the event, speakers, deadlines and the venue below:

Register here

ChemistryViews - The Magazine of Chemistry Europe

Latest News

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Go to: ChemistryViews - The Magazine of Chemistry Europe

ERC: New members appointed, changes to 2024 evaluation approved

The Scientific Council welcomes five new members, who started their term on 1 January 2023. The new members were announced on 7 December.
Distinguished scientists and scholars to join the ERC Scientific Council | ERC (europa.eu)

Marton Kottmayer,
EuChemS

January 13, 2023

The European Commission appointed the new members – each of them distinguished scientists or scholars from different countries, ranging from Ireland (Luke O'Neill, TCD) to Poland, and coming from diverse scientific backgrounds, including, but not limited to biochemistry, computer science, immunology and geography – for a four year term. In the meantime, the Commission also extended the term of five current members. Information on the newly elected members to the 22 person Scientific Council can be found here. ERC President Prof. Maria Leptin formally welcomed the new members alongside Commissioner for Innovation, Research, Culture, Education and Youth, Mariya Gabriel.

Following this, during its December Plenary Meeting, the council decided on changes to ERC application forms and evaluation procedures, to be implemented for 2024 calls. The key principle behind the changes in application is simplification: certain templates will be merged, and applicants will be given the opportunity to add narrative descriptions. This is in line with ERC becoming a signatory of the Coalition for Advancing Research Assessment (CoARA)'s agreement – of which EuChemS is an early signatory of.

Earlier last year, Prof. Leptin also participated in an exchange of views with the European Parliament's Committee on Industry, Research and Energy (ITRE). In her address on 29 November 2022, she expressed ERC's stance on Research Assessment reforms and defining "Scientific Excellence". While highlighting the key achievements of ERC to illustrate its success, she expressed the Council's openness to evolve its practices, however, also emphasized its commitment to its core principles established at the foundation of ERC in 2007.

Climate Change, Environment, Sustainability & Related Topics

Market interventions killing industry's access to renewable power – BASF Renewable Energy CEO

1 December

Market rules kill access to renewables – BASF Renewable Energy CEO (energymonitor.ai)

Global energy efficiency progress is accelerating, signalling a potential turning point after years of slow improvement - News – IEA

2 December

Global energy efficiency progress is accelerating, signalling a potential turning point after years of slow improvement - News - IEA

Wind turbines have an image problem but silent, bladeless designs could change all that | Euronews

2 December

Wind turbines have an image problem but silent, bladeless designs could change all that | Euronews

Prince William: We put man on the moon - we can repair our planet | Climate News | Sky News

4 December

Prince William: We put man on the moon - we can repair our planet | Climate News | Sky News

An easy way for dairy farmers to reduce their climate impact

2 December

An easy way for dairy farmers to reduce their climate impact (phys.org)

The smart and efficient domestic wind turbine

1 December

The smart and efficient domestic wind turbine (surfertoday.com)

The day world's biggest isolated grid had enough wind and solar to reach 100 pct renewables | RenewEconomy

2 December

The day world's biggest isolated grid had enough wind and solar to reach 100 pct renewables | RenewEconomy

Why the humble heat pump is about to experience a global boom - One Step Off The Grid

1 December

https://onestepoffthegrid.com.au/why-the-humble-heat-pump-is-about-to-experience-a-global-boom

Microsoft-backed start-up Heirloom uses limestone to capture CO2

5 December

Microsoft-backed start-up Heirloom uses limestone to capture CO2 (cnbc.com)

Watch "Aeromine Rooftop Wind. Static. Silent. 50% more power than Solar PV. What's not to like?" on YouTube

5 December

Aeromine Rooftop Wind. Static. Silent. 50% more power than Solar PV. What's not to like? - YouTube

Academia–industry ties under scrutiny
10 November
Academia–industry ties under scrutiny | Nature Climate Change
DOI https://doi.org/10.1038/s41558-022-01522-2

Behaviour as leverage | Nature Climate Change
16 November
Behaviour as leverage | Nature Climate Change
DOI https://doi.org/10.1038/s41558-022-01531-1

Consortium seeks first proposals for carbon capture shipping project
6 December
Consortium seeks first proposals for carbon capture shipping project - CNA (channelnewsasia.com)

Southampton scientist's CO2 work earns Earthshot prize - BBC News
5 December
Southampton scientist's CO2 work earns Earthshot prize - BBC News

Netherlands Selects Offshore Hydrogen Network Developer | Offshore Wind
5 December
Netherlands Selects Offshore Hydrogen Network Developer | Offshore Wind

Charting the global energy landscape to 2050: Emissions
1 December
The global energy landscape to 2050: Emissions | McKinsey

Dawn Meats to invest €100 million in 2040 net-zero target
6 December
Dawn Meats to invest €100 million in 2040 net-zero target (agriland.ie)

German giant RWE doubles down on Irish offshore wind with swoop for 'invaluable' East Celtic | Recharge
5 December
German giant RWE doubles down on Irish offshore wind with swoop for 'invaluable' East Celtic | Recharge (rechargenews.com)

Concrete's impact on the environment
3 December
Concrete's impact on the environment (fastcompany.com)

New food technologies could release 80% of the world's farmland back to nature
6 December
New food technologies could release 80% of the world's farmland back to nature (theconversation.com)

COP 15 (The 15th **United Nations Biodiversity Conference, COP15**, opened in Montreal, Canada 7- 19 December 2022)

World leaders must step up to put biodiversity deal on path to success
6 December

World leaders must step up to put biodiversity deal on path to success (nature.com)
doi: https://doi.org/10.1038/d41586-022-04329-5

COP15: three visions for protecting nature on the table at the UN biodiversity conference
6 December
COP15: three visions for protecting nature on the table at the UN biodiversity conference (theconversation.com)

Cop15: what are the key targets for the biodiversity agreement? | Environment | The Guardian
10 December
https://www.theguardian.com/environment/2022/dec/10/cop15-what-are-the-key-targets-for-the-biodiversity-agreement

Developing countries walkout at UN biodiversity talks
14 December
Developing countries walkout at UN biodiversity talks (rte.ie)

Walkouts and tensions as row over finance threatens to derail Cop15 talks | Cop15 | The Guardian
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Walkouts and tensions as row over finance threatens to derail Cop15 talks | Cop15 | The Guardian

COP15: Ireland supports biodiversity framework - Noonan - Agriland.ie
15 December
COP15: Ireland supports biodiversity framework - Noonan - Agriland.ie

Watered down: why negotiators at Cop15 are barely mentioning the ocean | Cop15 | The Guardian
16 December
https://www.theguardian.com/environment/2022/dec/16/negotiators-cop15-barely-mentioning-ocean

New hope for 'deal to save nature' at UN summit
17 December
New hope for 'deal to save nature' at UN summit (rte.ie)

The US touts support for biodiversity – but at Cop15, it remains on the sidelines | Cop15 | The Guardian
17 December
The US touts support for biodiversity – but at Cop15, it remains on the sidelines | Cop15 | The Guardian

Factbox: "30-by-30": Key takeaways from the COP15 biodiversity summit
19 December
Factbox: "30-by-30": Key takeaways from the COP15 biodiversity summit | Reuters

UN biodiversity conference: what does living in harmony with nature look like?
16 December
UN biodiversity conference: what does living in harmony with nature look like? (theconversation.com)

‘Crucial’ Cop15 deal includes target to protect 30% of nature on Earth by 2030
19 December

‘Crucial’ Cop15 deal includes target to protect 30% of nature on Earth by 2030 | Cop15 | The Guardian

Things to know about landmark UN biodiversity agreement
19 December
Things to know about landmark UN biodiversity agreement (rte.ie)

Nations forge historic deal to save species: what’s in it and what’s missing
19 December
Nations forge historic deal to save species: what’s in it and what’s missing (nature.com)
doi: https://doi.org/10.1038/d41586-022-04503-9

Cop15 in Montreal: did the summit deliver for the natural world? | Cop15 | The Guardian
20 December
https://www.theguardian.com/environment/2022/dec/20/cop15-montreal-did-it-deliver-for-natural-world-aoe

Cop15 summit: DRC drops objections to seal deal on historic action on biodiversity | Cop15 | The Guardian
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https://www.theguardian.com/environment/2022/dec/20/cop15-summit-drc-drops-objections-to-seal-deal-on-historic-action-on-biodiversity-aoe

Five options for restoring global biodiversity after the UN agreement
20 December
Five options for restoring global biodiversity after the UN agreement (theconversation.com)

‘Embrace history’: UN environment chief calls for immediate action on Cop15 deal | Cop15 | The Guardian
20 December
‘Embrace history’: UN environment chief calls for immediate action on Cop15 deal | Cop15 | The Guardian

The historic COP15 outcome is an imperfect game-changer for saving nature. Here’s why Australia did us proud
20 December
The historic COP15 outcome is an imperfect game-changer for saving nature. Here's why Australia did us proud (theconversation.com)

COP15: A call to action for investors to help us meet vital biodiversity goals
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COP15: A call to action for investors to help us meet vital biodiversity goals (theconversation.com)

UN biodiversity conference: what does living in harmony with nature look like?
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UN biodiversity conference: what does living in harmony with nature look like? (theconversation.com)

Biodiversity: one way to help countries stick to their commitments to restore nature
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Biodiversity: one way to help countries stick to their commitments to restore nature (theconversation.com)

Biodiversity treaty: UN deal fails to address the root causes of nature’s destruction
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Biodiversity treaty: UN deal fails to address the root causes of nature's destruction (theconversation.com)

Five ways you can help stop biodiversity loss in your area – and around the world
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Five ways you can help stop biodiversity loss in your area – and around the world (theconversation.com)

COP15's Global Biodiversity Framework must advance Indigenous-led conservation to halt biodiversity loss by 2030
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COP15's Global Biodiversity Framework must advance Indigenous-led conservation to halt biodiversity loss by 2030 (theconversation.com)

Biodiversity: one way to help countries stick to their commitments to restore nature
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Biodiversity: one way to help countries stick to their commitments to restore nature (theconversation.com)

'Risk like offshore wind': Orsted to build huge plant tapping green hydrogen for shipping fuel | Recharge
20 December
'Risk like offshore wind': Orsted to build huge plant tapping green hydrogen for shipping fuel | Recharge (rechargenews.com)

How to build on the success of Cop15 agreement | Cop15 | The Guardian
28 December
How to build on the success of Cop15 agreement | Cop15 | The Guardian

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Shipping must accelerate its decarbonisation efforts – and now it has the opportunity to do so
6 December
Shipping must accelerate its decarbonisation efforts – and now it has the opportunity to do so (theconversation.com)

Wexford wind farm project purchased by German multinational company - Independent.ie
6 December
https://www.independent.ie/regionals/wexford/news/wexford-wind-farm-project-purchased-by-german-multinational-company-42198342.html

Gaia Vince on how climate change will shape where people live
2 December
Gaia Vince on how climate change will shape where people live (nature.com)
doi: https://doi.org/10.1038/d41586-022-04132-2

RWE expands Irish offshore wind footprint - Splash247
5 December
https://splash247.com/rwe-expands-irish-offshore-wind-footprint

Scotland's Largest Offshore Wind Farm Entering Home Stretch | Offshore Wind
5 December
Scotland's Largest Offshore Wind Farm Entering Home Stretch | Offshore Wind

Mixing diesel and hydrogen provides big cuts in emissions | Ars Technica
7 December
Mixing diesel and hydrogen provides big cuts in emissions | Ars Technica
DOI: 10.1016/j.ijhydene.2022.08.149

The food emissions 'solutions' alarming experts after Cop27 | Environment | The Guardian
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The food emissions 'solutions' alarming experts after Cop27 | Environment | The Guardian

Column: 'Dispatchable' renewables in spotlight after upbeat IEA report
8 December
Column: 'Dispatchable' renewables in spotlight after upbeat IEA report | Reuters

Enjoy It While You Can: Dropping Oxygen Will One Day Suffocate Most Life on Earth
8 December
Enjoy It While You Can: Dropping Oxygen Will One Day Suffocate Most Life on Earth : ScienceAlert
DOI https://doi.org/10.1038/s41561-021-00693-5

Cumbria coal mine: empty promises of carbon capture tech have excused digging up more fossil fuel for decades
8 December
Cumbria coal mine: empty promises of carbon capture tech have excused digging up more fossil fuel for decades (theconversation.com)

Global Nitrogen Fertilizer Market Faces Issues with Availability, Affordability
6 December
Global Nitrogen Fertilizer Market Faces Issues with Availability, Affordability (dtnpf.com)

Long-term national climate strategies bet on forests and soils to reach net-zero | Communications Earth & Environment
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https://www.nature.com/articles/s43247-022-00636-x
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COP 27: a way forward for methane, fossil fuel (not just coal) phase-out, and U.S.-China competition?
9 December
COP 27: a way forward for methane, fossil fuel (not just coal) phase-out, and U.S.-China competition? - Energy Post

Atmospheric removal of methane by enhancing the natural hydroxyl radical sink
7 November
Atmospheric removal of methane by enhancing the natural hydroxyl radical sink - Wang - 2022 - Greenhouse Gases: Science and Technology - Wiley Online Library
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Sustainable and inclusive growth: Briefing note #25, December 8, 2022
8 December

Business insights on growth and societal benefits | McKinsey

Global warming is spurring harmful oxygen loss in lakes
7 December
Global warming is spurring harmful oxygen loss in lakes (innovationnewsnetwork.com)

Carbon capture: UK's first plant could remove 1.5 million tonnes of CO2 from the air a year | Euronews
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Carbon capture: UK's first plant could remove 1.5 million tonnes of CO2 from the air a year | Euronews

The Five-Year Engineering Feat Germany Pulled Off in Months – WSJ
8 December
The Five-Year Engineering Feat Germany Pulled Off in Months - WSJ

Oil firms have internally dismissed swift climate action, House panel says | Oil and gas companies | The Guardian
10 December
https://www.theguardian.com/business/2022/dec/09/oil-gas-companies-fossil-fuel-industry-house-committee

London air pollution: expanding the ULEZ is good but it won't work by itself
9 December
London air pollution: expanding the ULEZ is good but it won't work by itself (theconversation.com)

Texas Will Have More Electricity From Renewables Than Natural Gas Next Year, Says EIA Report – CleanTechnica
9 December
Texas Will Have More Electricity From Renewables Than Natural Gas Next Year, Says EIA Report - CleanTechnica

Supertanker Becomes Vastly More Efficient By Adding Small Sails
6 December
Supertanker Becomes Vastly More Efficient By Adding Small Sails (thesized.com)

Omnidirectional, bladeless wind turbine produces electricity as it spins on its own
5 December
omnidirectional, bladeless wind turbine produces electricity as it spins on its own (designboom.com)

EU aims for 30 GW of solar module production by 2025 – pv magazine International
12 December
https://www.pv-magazine.com/2022/12/12/eu-aims-for-30-gw-of-solar-module-production-by-2025

TOP 10 renewable energy solutions of 2022
https://www.designboom.com/technology/top-10-renewable-energy-solutions-of-2022-11-07-2022

The world just got serious about dealing with climate damage
12 December
The world just got serious about dealing with climate damage - Bulletin of the Atomic Scientists (thebulletin.org)

Turning commitments into action on the 1.5º pathway
12 December

Turning commitments into action on the 1.5º pathway | McKinsey

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10 December
https://spectrum.ieee.org/airship

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7 December
Biodiversity and climate COPs | Nature Sustainability
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Energy security concerns and new policies lead to largest ever upward revision of IEA's renewable power forecast - IEA

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IEA (2022), Renewables 2022, IEA, Paris https://www.iea.org/reports/renewables-2022, License: CC BY 4.0

EU To Raise $21 Billion From Carbon Market To Help Ditch Russian Gas | OilPrice.com

14 December
EU To Raise $21 Billion From Carbon Market To Help Ditch Russian Gas | OilPrice.com

ChemX's high-purity alumina technology advances the green energy transition

7 December
ChemX's high-purity alumina technology advances green energy transition (innovationnewsnetwork.com)

H3 debuts all-in-one hydrogen powertrain pods for long-range flight

14 December
https://newatlas.com/drones/h3-hydrogen-propulsion

'Guilt free' transatlantic flight is on the horizon, government says | Climate News | Sky News

16 December
'Guilt free' transatlantic flight is on the horizon, government says | Climate News | Sky News

Race to Develop Carbon Removal Technology Begins with Record Funding - Scientific American

14 December
Race to Develop Carbon Removal Technology Begins with Record Funding - Scientific American

Anemoi's mechanic rotor sails capture wind power to propel ships into a sustainable future

11 December
anemoi's mechanic rotor sails capture wind power to propel ships into a sustainable future (designboom.com)

Sustainable and inclusive growth: Briefing note #26, December 15, 2022

15 December
Business insights on growth and societal benefits | McKinsey

Stripe-backed Eion digs up $12M Series A to help farms capture carbon with green rock dust

15 December
Stripe-backed Eion digs up $12M Series A to help farms capture carbon with green rock dust | TechCrunch

Russia, fossil prices, energy security will boost Renewables to 38% of global power mix by 2027, says IEA

16 December
Russia, fossil prices, energy security will boost Renewables to 38% of global power mix by 2027, says IEA - Energy Post

Using ammonia as a shipping fuel could disturb the nitrogen cycle (payed access only)

5 October
Using ammonia as a shipping fuel could disturb the nitrogen cycle | Nature Energy
DOI https://doi.org/10.1038/s41560-022-01124-4

British boilers handed £102m 'no regrets' plan to heat homes with new energy source | Science | News | Express.co.uk

13 December
British boilers handed £102m 'no regrets' plan to heat homes with new energy source | Science | News | Express.co.uk

New wind farm plan aims to transform Shannon estuary and create 50,000 jobs | Business Post

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New wind farm plan aims to transform Shannon estuary and create 50,000 jobs | Business Post

New report sets out a vision to make Shannon Estuary a hub for transport and energy - Ireland Live

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New report sets out a vision to make Shannon Estuary a hub for transport and energy - Ireland Live (ireland-live.ie)

Boost for bogs as extra cash and expertise pledged to help save precious habitats - Independent.ie

16 December
Boost for bogs as extra cash and expertise pledged to help save precious habitats - Independent.ie

No breakthrough during day-long talks on EU carbon market reform

17 December
No breakthrough during day-long talks on EU carbon market reform – EURACTIV.com

World's first net-zero transatlantic flight: Fly London to New York on used cooking oil

17 December
World's first net-zero transatlantic flight: Fly London to New York on used cooking oil (interestingengineering.com)

Russia Whiffs On Baltic Green Hydrogen Opportunity

17 December
Russia Whiffs On Baltic Green Hydrogen Opportunity (cleantechnica.com)

How one small European country could hold the key to energy self-sufficiency

18 December

How one small European country could hold the key to energy self-sufficiency (interestingengineering.com)

What's wrong with these climate models?

16 December
What's wrong with these climate models? - Bulletin of the Atomic Scientists (thebulletin.org)

McKinsey: Top Ten Most Popular Sustainability & Energy

19 December
Top Ten Most Popular | McKinsey & Company

Energy crisis: five questions that must be answered in 2023

Energy crisis: five questions that must be answered in 2023 (nature.com)
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The energy transition: A region-by-region agenda for near-term action

15 December
The energy transition: A region-by-region agenda for near-term action | McKinsey

EU strikes key agreement to overhaul carbon market – DW – 12/18/2022

18 December
EU strikes key agreement to overhaul carbon market – DW – 12/18/2022

London Underground polluted with particles small enough to enter the human bloodstream – new research

19 December
London Underground polluted with particles small enough to enter the human bloodstream -- new research (theconversation.com)

Climate change can be beaten - why some scientists are hopeful

19 December
Climate change can be beaten - why some scientists are hopeful (theconversation.com)

Producing fertilizer without carbon emissions

19 December
Producing fertilizer without carbon emissions (phys.org)
DOI: 10.1088/1748-9326/aca815

Carbon-eating blocks ingest eight tonnes of CO2 a day, says company

18 December
https://interestingengineering.com/innovation/carbon-eating-building-blocks

EU gas consumption dropped by 20% before winter as most countries reach key voluntary targets | Euronews

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Fusion Technology Is Reaching a Turning Point That Could Change The Energy Game

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Fusion Technology Is Reaching a Turning Point That Could Change The Energy Game : ScienceAlert

The KTH Royal Institute of Technology has revealed it is collaborating with Novatron Fusion Group AB and EIT InnoEnergy to innovate solutions to the challenges stopping fusion energy commercialisation.

8 December

KTH collaboration aims to overcome fusion energy challenges (innovationnewsnetwork.com)

National Ignition Facility demonstrates net fusion energy gain in world first

14 December

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Nuclear fusion "breakthrough" reportedly arrives

12 December

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Nuclear fusion reactor 'breakthrough' is significant, but light-years away from being useful

13 December

Nuclear fusion reactor 'breakthrough' is significant, but light-years away from being useful | Live Science and

National Ignition Facility demonstrates net fusion energy gain in world first

14 December

National Ignition Facility demonstrates net fusion energy gain in world first – Physics World

Nuclear-fusion lab achieves ‘ignition’: what does it mean?

13 December

Nuclear-fusion lab achieves ‘ignition’: what does it mean? (nature.com)

doi: https://doi.org/10.1038/d41586-022-04440-7

Calm down. There's no NIF fusion power "breakthrough" - Big Think

13 December

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13 December
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14 December
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There Is No Nuclear Fusion "Breakthrough": NIF fusion power still consumes 130 times more energy than it creates
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Despite the hype, we shouldn't bank on nuclear fusion to save the world from climate catastrophe | Robin McKie | The Guardian
17 December
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16 December
The Energy Department's fusion breakthrough: It's not really about generating electricity - Bulletin of the Atomic Scientists (thebulletin.org)
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Nuclear fusion breakthrough to be tested with world's largest laser - oregonlive.com
Shaunavon scientist part of fusion energy breakthrough
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30 December
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14 December
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14 December
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Recent nuclear fusion news is more about hydrogen bombs than energy related - MINING.COM

Phil Wang: 'How would I like to be remembered? As the man who solved nuclear fusion'
17 December
Phil Wang: 'How would I like to be remembered? As the man who solved nuclear fusion' | Phil Wang | The Guardian
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14 December
Taiwan to fund fusion nuclear research in wake of major breakthrough - Focus Taiwan

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18 December
Fusion is a light in the darkness — it's time to supercharge its pursuit | Comment | The Sunday Times (thetimes.co.uk)

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23 December
US pours millions into AI research to advance fusion power • The Register

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Helion Trenta: A Nuclear Fusion Reactor Unlike Anything You've Seen Before - autoevolution

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Current distribution monitoring enables quench and damage detection in superconducting fusion magnets | Scientific Reports (nature.com)
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International nuclear fusion project may be delayed by years, its head admits | Energy research | The Guardian

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10 January
The Intricacies Of Creating Fuel For Nuclear Reactors | Hackaday

Breakthrough! China's 'Artificial Sun' Achieves Super I-Mode That Could Lead To More Stable Fusion Energy
13 January
Breakthrough! China's 'Artificial Sun' Achieves Super I-Mode That Could Lead To More Stable Fusion Energy (eurasiantimes.com)

AL_A wins approval for world's first magnetised fusion power plant
13 January
AL_A wins approval for world's first magnetised fusion power plant (dezeen.com)

Nuclear Fusion Has Gone From Pipe Dream To Possibility | OilPrice.com
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Nuclear Fusion Has Gone From Pipe Dream To Possibility | OilPrice.com

Inside the nuclear fusion breakthrough that could be a step to unlimited clean energy in the distant future - CBS News

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U.S. Department of Energy is Testing Materials For Building "Next Generation of Fusion Reactors" - The Debrief

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5 December
Chinese SMR project enters installation phase : New Nuclear - World Nuclear News (world-nuclear-news.org)

Collaborators to develop SMR-based hydrogen production concept : Energy & Environment - World Nuclear News
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Collaborators to develop SMR-based hydrogen production concept : Energy & Environment - World Nuclear News (world-nuclear-news.org)

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7 December
Small Modular Reactors Aren't Difficult Nuclear Waste Generators (powermag.com)

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EDF, Fortum agree to study nuclear newbuild in Finland and Sweden | Reuters

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6 December
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12 December
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GE Hitachi Submits Generic Design Assessment Application in the UK for the BWRX-300 Small Modular Reactor | GE News

NuScale completes standard plant design : New Nuclear - World Nuclear News
22 December
NuScale completes standard plant design : New Nuclear - World Nuclear News (world-nuclear-news.org)

Watch "Day in the life of a Nuclear Physicist - A Sneak…" on YouTube
December 2022
Day in the life of a Nuclear Physicist - A Sneak Peek from the Nuclear Fuel Lab - YouTube and continues after introduction:
Nuclear Physicist EXPLAINS - Why Operators at Nuclear Power Plants Wear White #shorts - YouTube

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5 January
Nuclear waste: how environmental radiochemistry is improving storage and site remediation – Physics World

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6 January
Britain has a chance to be a nuclear fusion superpower. We must not blow it (telegraph.co.uk)

Further cost refinements announced for first US SMR plant : New Nuclear - World Nuclear News
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11 January
Sweden Looks To Expand Its Nuclear Power Generation Capacity | OilPrice.com

The Future of Fission Reactors May Be Small
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The Future of Fission Reactors May Be Small - IEEE Spectrum

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For 'Great British Nuclear', the British government needs to step up
23 January
For 'Great British Nuclear', the British government needs to step up (energymonitor.ai)

Rare Look At Nuclear Reactor Inside Russian Ballistic Missile Submarine
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WHO updates list of medicines to stockpile for nuclear emergencies | The Hill
27 January
WHO updates list of medicines to stockpile for nuclear emergencies | The Hill

€1.28m funding allocated to cultivate the next generation of nuclear safety experts
27 January
€1.28m funding will cultivate the next generation of nuclear safety experts (innovationnewsnetwork.com)

Holtec Nuclear for Faster and Cheaper Upgrade of Existing Coal Plants | NextBigFuture.com

31 January

Holtec Nuclear for Faster and Cheaper Upgrade of Existing Coal Plants | NextBigFuture.com

Rolls Royce Teases Nuclear Reactor That Could Power A Moon Base

29 January

Rolls Royce Teases Nuclear Reactor That Could Power A Moon Base (wccftech.com)

Can new cheap, frequent “laser” monitoring of critical components extend Nuclear plant lifetimes by decades?

1 February

Can new cheap, frequent “laser” monitoring of critical components extend Nuclear plant lifetimes by decades? - Energy Post

Thorium Power Reactors

Thorium-Fueled Reactors Offer Huge Potential Benefits for the Nuclear Power Industry

Watch "Nuclear Physicist EXPLAINS - What are Thorium Reactors?" on YouTube

December 2022
Nuclear Physicist EXPLAINS - What are Thorium Reactors? - YouTube

Revisiting Thorium Energy - The Future of Nuclear Power?

February 2022
Revisiting Thorium Energy - The Future of Nuclear Power? - YouTube

The Thorium Molten-Salt Reactor: Why Didn't This Happen (and why is now the right time?)

16 December 2011
The Thorium Molten-Salt Reactor: Why Didn't This Happen (and why is now the right time?) - YouTube

Thorium-Fuelled Reactors Offer Huge Potential Benefits for the Nuclear Power Industry

11 November
Thorium-Fueled Reactors Offer Huge Potential Benefits for the Nuclear Power Industry (powermag.com)

Hydrogen-Boron 11 Fusion Power Reactors

HB11, Energy is developing Laser Hydrogen Boron-11 fusion to provide a new source of unlimited, clean, safe and reliable energy

?
HB11 Energy | new Laser Hydrogen-Boron fusion energy | Australia | HB11 Energy develops Laser Hydrogen Boron-11 fusion to provide a new source of unlimited, clean, safe and reliable energy. Our mission is to generate electricity using laser-ignited non-thermal fusion.

SFI News, Updates & Reports

SFI Frontiers for the Future 2022

Science Foundation Ireland is pleased to announce that the **SFI Frontiers for the Future 2022** Call is now open.

This programme provides opportunities for independent investigators to conduct highly innovative, collaborative research with the potential to deliver impact, whilst also providing discrete opportunities for high-risk, high-reward research projects.

The programme call is divided into **Project** and **Award** streams. The Project stream will run as a fixed deadline call with a submission **deadline of 14th April 2023** at 13:00 Dublin Local Time. The Award stream will run as a rolling call with applicants free to submit applications **from 14th April 2023.**

Further information on this Call and how to apply is available here:

SFI Frontiers for the Future

#BelieveInScience

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Happy New Year from Science Foundation Ireland

Thank you for your support throughout 2022. We look forward to sharing more research news in the new year. We are looking back on 2022 highlights over the last 12 days of the year, on social media, with **#12DaysofIrishScience**

Follow along on **Twitter** and **LinkedIn**

Funding Opportunities

The **SFI Frontiers for the Future** 2022 call is now open, supporting excellent independent researchers. The call is run in collaboration with Geological Survey of Ireland and Children's Health Foundation. The Project stream deadline is **14th April 2023**.

The **Co-Centre Programme** is an opportunity to build strategic collaborative partnerships across Ireland, Great Britain and Northern Ireland through the formation of a Co-Centre. Deadline is **16th March 2023.**

There are 4 challenges open under the National Challenge Fund: **Healthy Environment for All Challenge**, **Energy Innovation Challenge**, **Digital for Resilience Challenge**, and **OurTech Challenge**. Deadline is **10th February 2023.**

Exploring opportunities with the National Challenge Fund With four Challenges currently open in the National Challenge Fund, SFI hosted an event last month, for members of the research community to hear from Government departments about the challenges for which Ireland most needs solutions.

Read more

Four National Challenge Fund Calls Closing 10th February

SFI reminds researchers that four calls in the National Challenge Fund will close soon. Six-page applications need to be made in SESAME by 1300 local Dublin time on Friday 10th February.

The **Healthy Environment for All Challenge** seeks solutions to ensure clean and healthy air, water and soil for humans, animals and plants, with an overall prize award of 2 million euro.

The **Energy Innovation Challenge** seeks solutions to accelerate Ireland's transition to a clean and secure energy system, with an overall prize award of 2 million euro.

The **OurTech Challenge** supports research teams to address the challenge of enhancing the connections between government, communities and people, with an overall prize award of 1 million euro.

The **Digital for Resilience Challenge** supports research teams to focus on the challenge of enhancing Ireland's capabilities in crisis prediction & response, with an overall prize award of 1 million euro.

In addition to funding, research teams will be provided with non-financial support through training and mentorship. All challenges will support inter- and trans-disciplinary teams made up of scientists, engineers and researchers from different domains working together with non-technical experts and those beyond academia. Initial funding is for a period of six months with teams expected to move from there to a second stage lasting twelve months.

SFI will host an information webinar on these challenges on 26th January at 1400 local Dublin time. To attend, click **here**

Full details for each challenge and how to apply can be found here:

Healthy Environment for All Challenge

Digital for Resilience Challenge

Energy Innovation Challenge

OurTech Challenge

Diverting carbon's path from the atmosphere to medicine

Prof Pat Guiry, University College Dublin

In the atmosphere, carbon dioxide can act as a 'greenhouse gas' and trap heat from the sun. Yet in other contexts, carbon dioxide can be highly useful. So how do we harness carbon dioxide for our benefit and keep it from going into the atmosphere?

A project at University College Dublin is looking at ways to use carbon dioxide more readily in the pharmaceutical industry, thus diverting their path to the atmosphere.

When making medicines in the lab, one of the more useful classes of chemicals to have around is carboxylic acids, explains Professor Pat Guiry, Professor of Synthetic Organic Chemistry at UCD and a co-Principal Investigator in BEACON Bioeconomy SFI Research Centre.

Professor Guiry is leading a project to use carbon dioxide when making carboxylic acids, and one of the goals is to find a suitable catalyst to make the reaction quick and easy to manage. "We are looking at lots of different metal complexes as catalysts," explains Professor Guiry. "And we are particularly interested in abundant metals such as nickel or iron, which could be easily sourced without putting pressure on rarer metal resources."

By refining the chemistry of using carbon dioxide to prepare carboxylic acids – which can then be used to make medicines and other complex compounds in the lab – the hope is that industry will be able to use carbon dioxide that could otherwise be emitted and travel to the atmosphere, explains Professor Guiry.

"We would anticipate that carbon dioxide could be captured from the process of burning biofuels and used in chemical reactions to make medicines," he explains. "In this way, we would be making valuable use of waste material and also stopping that carbon dioxide from directly becoming a greenhouse gas."

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A double-whammy to potentially treat COVID-19

Professor Luke O'Neill, Trinity College Dublin

Professor Luke O'Neill wants to stop both the virus and the massive immune response, and he is exploring how a naturally-occurring substance in the body could do that.

The substance is called itaconate, and it is a byproduct of a well-known biochemical pathway in cells called the Krebs cycle. "Our lab has been looking at how cells of the immune system burn nutrients, and we found that when the immune system is reacting to something, when it is going into a state of inflammation, you get these byproducts," explains Professor O'Neill, who is Professor of Biochemistry at Trinity College Dublin and whose research has been supported by SFI.

"One of the byproducts is itaconate, and we think it acts as a brake on inflammation, which could be useful for stopping a massive immune response that could be damaging."

In lab tests, itaconate has been able to stop inflammation in models of sepsis and lupus (both are conditions where an over-active immune response causes damage), but interestingly the substance has also been shown to act against viruses such as Zika virus and Influenza in the lab.

We visited professor Luke O'Neill's lab at the Trinity biomedical sciences institute to hear about their work on #COVID19 @laoneill111 pic.twitter.com/I1Vl6ajNyz

— NewstalkFM (@NewstalkFM) May 17, 2020

"We have been looking at this for a while, and a company I co-founded, Sitryx, is interested in our work," says Professor O'Neill. "Now, through a collaboration with scientists in Holland on the EU-funded INITIATE project, we are testing to see how the substance works against the virus that causes COVID-19."

Many anti-inflammatory drugs are being tested for the new virus, and Professor O'Neill hopes that itaconate will be another 'shot on goal'. "We need to throw everything we can at this virus, and see what works well, might work in subgroups of patients and what has the least side effects," he says. "We are

fortunate that because of our past basic research, which SFI supported over a number of years, we are in a position to be able to test this potential anti-inflammatory and anti-viral agent now for the pandemic."

SFI 2023 Annual Programme Plan

At SFI we are looking forward to an exciting year ahead.

This month's SFI News includes the 2023 Annual Programme Plan, information on current funding opportunities and the latest news from our funded researchers.

SFI 2023 Annual Programme Plan

The 2023 Programme plan has been developed to align with the implementation of SFI's strategy, Shaping Our Future, and to support the delivery of the Government's research and innovation strategy - Impact 2030. To read the full Programme plan visit our website:

Publications

SFI publishes a range of reports and brochures throughout the year. These publications may be viewed and downloaded by clicking on the title of the publication below:

- SFI Annual Programme Plan 2023
- Evaluation of Research Infrastructure Report(opens in a new tab)
- SFI Annual Plan 2022
- SFI Annual Plan 2021
- SFI Science in Ireland Barometer 2020
- Science Foundation Ireland Strategy 2025 Shaping Our Future (English) (Irish)
- A Snapshot of the Irish Public Perception of the Risk of COVID-19(opens in a new tab)
- Annual Plan 2020(opens in a new tab)
- Analysis of gender success rates in the SFI review process and overview of SFI's gender addressing initiative(opens in a new tab)
- SFI Research Centres Snapshots
- Annual Plan 2019(opens in a new tab)
- Evaluation of the SFI Discover Programme 2013 - 2017(opens in a new tab)

- Agenda 2020(opens in a new tab)
- Annual Plan 2018(opens in a new tab)
- Ireland your Partner in Research 2019
- Ireland Your Partner in Research 2018
- Agenda 2020 Annual Review 2017
- Science Foundation Ireland Snapshot
- Gender Strategy 2016 - 2020
- Little Book of Irish Science 100 things you should know
- Ireland Your Partner in Science 2017
- Annual Plan 2017
- Annual Plan 2016
- Interim Evaluation of Science Foundation Ireland Research Centres Programme
- Evaluation of the Technology Innovation Development Award (TIDA) Programme
- Evaluation of SFI's Peer Review Processes
- Ireland's Research and Development Funders
- Research in Ireland – The Benefit of Feedback
- Science in Ireland Barometer 2015
- 2015 Annual Review of Agenda 2020
- Annual Plan 2015
- 2014 Review of Agenda 2020
- Evaluation of Science Foundation Ireland's Principal Investigator (PI) Programme
- Annual Census 2012
- Annual Census 2011
- Annual Census 2010
- Science Foundation Ireland: Celebrating 10 Years of Discovery
- Annual Census 2009

- Annual Census 2008
- Annual Census 2007
- Excellence in Research - Profiles of SFI Researchers
- Powering the Smart Economy - Science Foundation Ireland Strategy 2009 - 2013 (English) (Irish)
- Energy Strategy
- Vision 2004 - 2008 People, Ideas and Partnerships for a Globally Competitive Irish Research System
- Value for Money Review of Science Foundation Ireland
- Science Foundation Ireland Leaflet
- Investing in Biotechnology Research
- Investing in Information and Communications Technology (ICT)
- Science Foundation Ireland The First Five Years 2001 - 2005
- Discovery to Delivery
- 2018 Annual Review of Agenda 2020

If you require hard copies of any of our publications please email communications@sfi.ie or phone 01 607 3036.

Water and energy solutions crystallise from materials research

Professor Mike Zaworotko wants his research to tackle big challenges. Challenges don't come much bigger than the impacts of climate change. In his focus for solutions to reduce global energy consumption and ease water stress around the world, he seeks answers in the very small: the structures and properties of 'crystalline' materials.

"There are two types of solid - things that are crystalline and thing that are not," explains Professor Zaworotko, Director of **SSPC, SFI Research Centre for Pharmaceuticals** and **Bernal Institute** Chair of Crystal Engineering. "Crystalline materials have repeating pattern of atoms, molecules or ions in three dimensions, and this is what we research."

Porous, crystalline materials have many applications in industry. They are used for formulating drugs in the pharmaceutical sector, for manufacturing a range of other products and for purifying liquids and gas, including natural gas.

Professor Zaworotko's research at **University Limerick** uses crystal engineering to better understand and apply such materials for pharmaceuticals, and he has recently made discoveries that are set to have a large impact on global energy usage and water availability.

His lab has found a crystalline material that has favourable properties for absorbing and releasing water from the atmosphere, and it could revolutionise dehumidification systems in buildings and the availability of water in regions of drought.

"When we screened materials that we had already developed in our lab, we found that this one could absorb water well and, crucially, it releases it at a low temperature," he says. "This makes it practical and energy-efficient for sourcing or managing water."

In practice, the material (or a future version of it), could replace the silica traditionally used in dehumification systems in buildings, explain Professor Zaworotko. "Silica has been used for a long time as a desiccant to pull water from the atmosphere, but it is not very efficient," he says. "If we replaced silica with this crystalline material, it would require substantially less energy to maintain air quality in buildings around the world." The material could also wick water from the atmosphere in arid regions, he adds.

"Even in zones of very low humidity on Earth, even in deserts, there is still some water in the atmosphere. This material could be applied to capture the water from the air, meaning you could potentially grow crops there."

Professor Zaworotko is working on the technology with a company called Molecule, which has now moved to Ireland to work on the approach, one that he believes could have a vast impact: “People have relied on old solutions for a long time, but with motivation and an understanding of crystalline materials, we could cut the global energy bill and make fresh, safe water more available.”

Science Foundation Ireland sfi For what's next

e-Alert: November 2022

CO-CENTRE
COLLABORATION FOR TRANSFORMATIVE RESEARCH AND INNOVATION

SFI, in partnership with the Department of Agriculture, Environment and Rural Affairs (DAERA) and UK Research & Innovation (UKRI), is pleased to announce that the **Co-Centre Programme** has launched today.

The programme will support large-scale, virtual Centres with the aim of strengthening the research and innovation base within Ireland, Great Britain and Northern Ireland, building strategic partnerships across these regions within the areas of climate, and sustainable and resilient food systems.

Funding of €40 million has been provided through the Shared Island Fund and the Department of Further and Higher Education, Research, Innovation and Science, to SFI for the Co-Centre programme. Additional funding includes an allocation of up to £17 million by DAERA and a UKRI budget allocation of up to £12 million.

The closing date for applications is 16th March 2023, 13:00 Dublin Local Time.

Further information on the Co-Centre Programme and how to apply is available here:

Co-Centre Programme

Rialtas na hÉireann Government of Ireland | Science Foundation Ireland sfi For what's next | Maoinithe ag an Aontas Eorpach Funded by the European Union NextGenerationEU

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Calming windy cows and greenhouse gases

Dr Sinead McParland, Dr Laurence Shalloo and Prof Catherine Stanton

We often hear about carbon dioxide as a 'greenhouse gas' that helps to warm the Earth's atmosphere, but there are other duvet gases too. They include methane, a gas that is belched out of some livestock (ruminants) such as cattle and sheep.
With more than 6.5 million head of cattle in Ireland, that potentially constitutes a considerable amount of methane. The **Vistamilk SFI Research Centre**, co-funded by the **Department of Agriculture Food and the Marine**, with its headquarters in Cork, is looking at ways to reduce those greenhouse-gassy belches.

One approach, led by **Dr Sinead McParland** at **Teagasc**, is to analyse the milk that dairy cows produce to figure out what is happening in one of the cow's stomachs, or rumen. By looking at the fatty acids in the milk, she can build up a picture of activity in the rumen and potentially identify cows that naturally belch less methane as the microorganisms in their stomachs digest food.

This offers a potentially non-invasive way of tracking a cow's methane production, and by looking back at the records to identifying bulls that sired those cows, the hope is broaden the current breeding programmes to generate methane-light cattle into the future.

Another strategy to cut the methane emissions from livestock is to give them food that does not encourage the microorganisms in their stomachs to produce the gas. Cows in Ireland predominantly eat grass, which lends their meat and milk a desired richness, while also being low cost and environmentally friendly. **Dr Laurence Shalloo**, Deputy-Director of Vistamilk, leads a programme to examine how tweaking the diet of cows can affect their methane emissions.

But how can you measure how much methane a cow produces? Vistamilk's approach is to place measuring equipment in fields where cows graze and incentivise the cows to the machines and encourage them to stay at the machines for periods of up to four minutes.

"While the cows are eating, the machine can measure the methane content of their breath," says Dr Shalloo. "We are giving the cows particular complementary feeds in their diet, and the machines will tell us how that affects the methane-content of their belches over time."

In the past, some studies have shown that the effects of methane-reducing complementary feeds in the diet can wear off over time, but Dr Shalloo at Teagasc is encouraged by recent developments in the field. "The new generation of feeds and additives being tested now are showing much more promise, with bigger

effects and in many cases the effects persist over time," he says. "We will need to ensure that any changes to the diet have positive and lasting effects, and that is why the research is needed."

At Teagasc and at **APC Microbiome Ireland SFI Research Centre**, **Professor Catherine Stanton** is looking at how adding naturally occurring microbes called lactic acid bacteria to the diets of cows and sheep can affect methane emissions. The project is called **METHLAB** and it is funded by FACCE ERA-GAS, an EU ERA-NET Cofund programme for Monitoring and Mitigation of Greenhouse Gases from Agri- and Silvi-culture, coordinated by Teagasc.

"Lactic acid bacteria occur naturally in the intestines of cows and sheep, and they are also widely used in industry and they can be produced economically in large quantities," says Professor Stanton, who leads the project with researchers in Cork, The Netherlands, France, Italy and New Zealand. "We are examining how they can be implemented to naturally influence the microbes in the rumen of cows and sheep to mitigate methane and create a more sustainable, emission-efficient food production system."

Trinity scientists discover unexpected function for recently evolved alarm molecule in driving inflammation

21 December 2022

Prof Seamus Martin, Smurfit Professor of Genetics and SFI Frontiers for the Future Investigator, Trinity College Dublin.

Scientists from Trinity College Dublin have made an important breakthrough in understanding how inflammation is regulated. They have just discovered that a key immune alarm protein previously believed to calm down the immune response actually does the opposite.

Their work has numerous potential impacts, especially in the context of understanding and responding to autoimmune disorders and inflammation.

While our immune system serves a very important function protecting us from infection and injury, when immune responses become too aggressive this can lead to damaging inflammation, which occurs in conditions such as rheumatoid arthritis and psoriasis. Inflammation is triggered when our bodies produce "alarm proteins" (interleukins), which ramp up our defenses against infection and injury by switching on different components of our immune system.

Understanding how and when such alarm proteins are produced and how they activate our immune system has led to major breakthroughs in the treatment of many immune conditions.
Now, scientists from the Smurfit Institute of Genetics at Trinity College Dublin, led by Seamus Martin, Smurfit Professor of Genetics and SFI Frontiers for the Future Investigator, have found that Interleukin-37 has an unexpected function as an immune-activating molecule, as previous studies suggested that this interleukin instead served as an "off switch" for the immune system.

Professor Martin said "Interleukins play key roles in regulating our immune systems in response to bacterial and fungal infections. However, Interleukin-37 has long remained an enigma, as it isn't found in mammals such as mice. This has presented a major obstacle to figuring out what it does as much of what we know about the human immune system has first been discovered in model organisms whose biological make-ups are similar to ours."

Prior to the new study, Interleukin-37 was thought to have immune-suppressive functions but how exactly it switched off inflammation was hotly debated. However, the Trinity scientists now report that, when activated in the correct way, Interleukin-37 displays potent pro-inflammatory activity.

Professor Martin added “This pro-inflammatory impact was highly unexpected. Our work shows that the protein binds to an interleukin receptor in the skin that is known to play a key role in driving psoriasis. And, to add further intrigue to the story, this brings the total number of immune alarm molecules that signal via this particular interleukin receptor to four.

“Why there are so many interleukins that bind to the same receptor is a mystery, but if we were to speculate it may be because this receptor serves a very important sentinel function in our skin, and that one alarm protein may simply not be enough to respond to the many different infectious agents that our skin encounters. Our skin is the major barrier between our bodies and the outside world that microbes must breach if they are to gain entry to our bodies and, in many respects, represents the first line of defense in our immune systems.”

As such, Interleukin-37 and other immune alarm proteins may have evolved to become distinct variations on the same theme that enable our bodies to detect different types of infection by becoming activated by enzymes that are distinct to each infectious agent.

The research has been published in the internationally renowned journal, Science Immunology, and was a collaboration between several Trinity research groups led by Professor Martin's team, which included post-doctoral scientists Dr Graeme Sullivan and Dr Pavel Davidovich, along with research groups led by Professor Ed Lavelle (School of Biochemistry and Immunology) and Professor Pat Walsh (School of Clinical Medicine).

The research was supported via the European Research Council Advanced Grant Programme, The Irish Research Council Laureate Programme and Science Foundation Ireland.

Minister Harris and Minister Foley announce €1.2million in funding to STEM Passport for Inclusion

15 December 2022

- 5000 TY girls will participate in the STEM skills programme over the next two years
- The funding is awarded jointly by Science Foundation Ireland, the Department of Education, and Microsoft Ireland.

Dublin, 15 December 2022: Minister for Further and Higher Education, Research, Innovation and Science Simon Harris TD, and Minister for Education Norma Foley TD, today announced €1.2 million in funding to extend the STEM Passport for Inclusion project. The project, led by Dr Katriona O'Sullivan at Maynooth University, addresses gender inequalities among female pupils in socially disadvantaged communities through an innovative programme of mentoring and education supports.

The €1.2 million project will be funded jointly by the Science Foundation Ireland (SFI) Discover Programme (€300k), the Department of Education (€300k), and Microsoft Ireland (€600k).
Speaking about the project, **Minister Simon Harris** said: "I am delighted to announce today that €1.2million has been awarded to the STEM Passport for Inclusion project. This is a really worthy programme which aims to engage Transition Year girls with STEM, opening pathways to further and higher education. My Department is committed to increasing the number of women and girls studying and working in STEM subjects. I hope that initiatives like this one will help to inspire a new generation of female leadership in science, research, and innovation."

Minister Foley said: "I would like to congratulate Katriona O'Sullivan and her team on this wonderful initiative. The Recommendations on Gender Balance in STEM Education launched earlier this year, illustrated the importance of encouraging female participation in STEM. In Ireland, out of almost 120,000 people working in STEM, just one-quarter are women. The STEM Passport for Inclusion project was included in the recommendations and is an excellent initiative which aims to make STEM subjects more accessible and attractive to female students across the country."

The STEM Passport for Inclusion offers female secondary school students the opportunity to graduate with a university-accredited STEM skills module, and to develop a meaningful mentoring relationship with women in Industry. Recent research conducted by Maynooth University has shown that 16% of female students were not studying a science subject at Higher Level for the Leaving Certificate, while 6% of female students do not have the opportunity to study STEM subjects at Secondary level. The initiative provides a platform for girls to understand, participate and celebrate STEM, in order to increase STEM awareness and create pathways to further and higher education in STEM.

Dr Katriona O'Sullivan, Maynooth University said: "I am delighted that STEMp.inc has got the combined support of SFI, the Department of Education and Microsoft to expand nationally. We aim to ensure that every young woman, irrespective of socio-economic background, gets a chance to see where they fit in the STEM eco-system. I am looking forward to growing our partnerships with Atlantic Technological University, and Munster Technological University and other industry partners, as well as expanding our work with Microsoft's Dream Space team as their vision and passion for STEM has

ensured that the 1,250 young women we have worked with so far are motivated and ready to excel in the STEM workforce.

The STEM Passport for Inclusion programme was co-designed by the education leads at Microsoft Ireland and Maynooth University and is delivered by Microsoft's Dream Space team at its campus in Leopardstown, Dublin, and in the RDI Hub in Kerry. The national programme will empower 5,000 Transition Year girls from unrepresented communities to gain a Level 6 STEM qualification, which may not otherwise be available to them, and go on to apply for STEM courses at Maynooth University, Munster Technological University and Atlantic Technological University.

James O'Connor, Microsoft Ireland Site Leader and Vice President of Microsoft Business Operations International, said: "At Microsoft, we're passionate about ensuring young people are given the opportunity to develop the essential skills that are required to fully participate in a digital economy and society. That's why, over the last two years, the Microsoft Dream Space team has worked with Maynooth University to design, develop and deliver STEM Passport for Inclusion. Through this collaboration, we have been able to surpass the original ambition of engaging 1,000 girls in STEM.

"Today, we're delighted to be building on this relationship by co-funding the national delivery of STEM Passport for Inclusion to girls right across the country. Dr. Katriona O'Sullivan, in collaboration with our own Dr. Kevin Marshall and the Microsoft Dream Space team, will ensure that STEM Passport for Inclusion will continue to have a positive impact on girls' STEM capabilities, confidence, and aspirations. I'm hopeful that by helping to extend the reach of this project we can create new pathways for girls in STEM so they can play an active role in shaping our digital world."

Director General of SFI, Prof Philip Nolan said: "I am delighted that the STEM Passport for Inclusion project has been awarded funding under SFI's Discover programme. In line with SFI's 2025 Strategy – Shaping Our Future(opens in a new tab), the SFI Discover Programme Call aims to empower and inspire deep public engagement. It is wonderful to see how this initiative has already allowed underserved young women to see their place in STEM, and I look forward to seeing the programme extend its reach over the next two years."

President of Maynooth University, Prof Eeva Leinonen said: "I'm delighted to congratulate Dr Katriona O'Sullivan on this achievement. I am especially appreciative of the contribution of Science Foundation Ireland, Department of Education and Microsoft Ireland. Extending this innovative project nationally will afford thousands of young female pupils with an important opportunity to gain a STEM qualification."

Minister Harris announces €53.3 million for 33 awards through the SFI Research Infrastructure Programme

29 December 2022

Minister Further and Higher Education, Research, Innovation and Science, Simon Harris, TD, today announced a €53.3 million investment in 33 research infrastructure projects through the Science Foundation Ireland (SFI) Research Infrastructure Fund. The awards will contribute to the advancement of high-quality and high-impact research activities.

Announcing the award today, **Minister Harris** said: "I am delighted to announce €53.3 million in funding through my department that will support and encourage transformative research which will have both a national and international impact. The research community on our island has consistently proved itself to be world-class, not least during COVID-19, and continues to undertake cutting-edge, innovative research projects. In order for this community to continue to thrive, it's essential that they have sustained access to modern infrastructure and equipment."

Commenting on the investment, **Prof Philip Nolan, Director General, Science Foundation Ireland** said: "Encouraging and supporting excellent, ambitious and innovative research projects is the core objective of Science Foundation Ireland. The SFI Research Infrastructure Programme was developed with this in mind; in order for researchers to continue to deliver outstanding research and meet evolving and future challenges, we must ensure that they have the tools required for their research. The 33 infrastructure projects awarded funding are at the cutting edge and are truly helping us to achieve our goal of delivering today and preparing for tomorrow."

Examples of projects include:

- National Rechargeable Battery Fabrication and Test Facility, University of Limerick, co-funded by SEAI, is one-stop-shop for battery development, not present anywhere else in Europe. It will combine electrode fabrication, cell assembly, testing and state of the art materials characterization within one location for the first time within Ireland.
- National Soil Greenhouse Gas Test Platform, Teagasc, will provide a facility to examine the efficacy of a range of novel fertiliser, bioactives, bio-stimulants, manure, and digestate additives.
- MICROFERM, University College Cork, is a facility for rapid development of microbial bioprocesses for applications in the food and bioeconomy sectors. It comprises four fermentation platforms at a micro-scale to enable simultaneous screening and testing of large numbers of strain and process variables.
- Centre of Excellence in Multimodal Microscopy, University of Galway, this facility will comprise a correlative microscopy workflow where biological and biomedical samples can be imaged across scales and resolutions by combing three high end microscopy technologies - Super Resolution

Microscopy, Multiphoton Microscopy and Serial Block Face SEM (Scanning Electron microscopy) in one seamless ecosystem.

- Tera Lab, Tyndall National Institute, will focus on the deep convergence of ultra-high speed photonic and wireless communications technologies for 6G Wireless-Photonic Networking
- The Core Medium Throughput Facility at RCSI, University of Medicine and Health Sciences, will facilitate multi-parametric readouts for the assessment of functional alterations in single cells and brain networks in health and disease states. This project will ensure a streamlined workflow enabling faster research outputs and help advance scientific research at a faster pace that will answer new research questions to identify novel drug targets in epilepsy, autism, multiple sclerosis, pain, neurodegenerative, psychiatric, and motor neuron diseases.
- Terahertz Transmission and Characterisation Facility, Dublin City University, will allow for the detailed generation and characterisation of terahertz signals spanning frequencies from 0.1 to 0.75 THz. It will extend the existing capabilities of the University sector in Ireland and enable further interdisciplinary research that will further grow Ireland's expertise in areas where THz is a key enabling technology.

Two projects were co-funded by the Sustainable Energy Authority of Ireland (SEAI).

The SFI Research Infrastructure Programme supports the research community in building and sustaining cutting edge infrastructure in order to accomplish high-quality, impactful and innovative research. The programme facilitates broad usage across Ireland and to encourage partnerships and collaboration between different cohorts of researchers in Ireland; for example, between Universities, Technological Universities, Institutes of Technology, other Eligible Research Bodies, researchers in the Republic of Ireland and Northern Ireland, and between different cohorts of researchers in Ireland.

For more information about the research infrastructure programme visit: https://www.sfi.ie/funding/funding-calls/sfi-research-infrastructure-programme/

Home> Funding> Funding calls> Healthy Environment for All Challenge

Healthy Environment for All Challenge

The Healthy Environment for All Challenge will support researchers in seeking solutions to ensure clean and healthy air, water and soil for humans, animals, and plants.

DEADLINE Open 10th February 2023, **CONTACT** challenges@sfi.ie

Rialtas na hÉireann
Government of Ireland

Science Foundation Ireland For what's next

Maoinithe ag an Aontas Eorpach
Funded by the European Union
NextGenerationEU

Do you have an idea for a solution that could help Ireland become an environmentally sustainable economy?

The Healthy Environment for All Challenge gives academic research teams a unique opportunity to contribute to Ireland's transition to an environmentally sustainable and climate-neutral economy. Following review of applications, successful teams will receive funding of up to €250,000 and training to accelerate development of their idea. A number of teams will then be selected as finalists and receive up to €500,000 to further develop their idea before an overall winner is selected for the €2 million prize award.

The National Challenge Fund is an agile, fast-paced programme that allows research teams to work with societal stakeholders to deliver tangible impact through their research. In addition to funding, teams are provided with training and mentoring to support acceleration of an idea and to demonstrate how it can solve real-world problems. Participation has the potential to open up significant career development and collaborative opportunities.

Healthy Environment for All Challenge Handbook

Check these active links below:

Who can apply?

Funding

Key Dates

Challenge Description

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Open
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CONTACT

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20 January 2023

Scientists create computer simulation based on digital microbes

Digital microbe database unlocks patient response to treatment for diseases such as Parkinson's and colorectal cancer.

Researchers at University of Galway associated with APC Microbiome Ireland, a world-leading SFI Research Centre, have created a resource of over 7,000 digital microbes – enabling computer simulations of how drug treatments work and how patients may respond. The resource is a milestone in scientific understanding of human response to medical treatment as it offers the opportunity for computer simulations and predictions of differences in metabolism between individuals, including for diseases such as inflammatory bowel, Parkinson's and colorectal cancer.

The database - called AGORA2 - builds on the expertise developed in the creation of first resource of digital microbes known as AGORA1. AGORA2 encompasses 7,203 digital microbes, created based on experimental knowledge from scientific publications, with a particular focus on drug metabolism.

The resource has been built by a team of scientists at University of Galway's Molecular Systems Physiology group, led by APC Microbiome Ireland principal investigator Professor Ines Thiele.

The team's research aims to advance precision medicine by using computational modelling.

Professor Thiele explained: "AGORA2 is a milestone towards personalised, predictive computer simulations enabling the analysis of person-microbiome-drug interactions for precision medicine applications."

"Humans are hosting a myriad of microbes. Just like us, these microbes eat and interact with their environment. Considering that we are all unique, each of us hosting an individual microbiome our metabolism is also expected to vary between individuals."

"The insight provided by the database of digital microbes presents a healthcare opportunity to harness individual differences in metabolism to provide personalised, improved treatments in 'precision medicine', compared to a currently more general 'one-size-fits-all' approach."

"Besides our food, our individual microbiomes also metabolise the medicines we take. The same drug may therefore manifest diverse effects in disparate people because of the differences in metabolism performed by the different microbiomes."

Using the digital microbe resource AGORA2, computer simulations have shown that drug metabolism varies significantly between individuals, as driven by their own microbiomes.

Uniquely, the AGORA2-based computer simulations enabled the identification of microbes and metabolic processes for individual drugs correlated with observations in a clinical setting.

The research was published today in Nature Biotechnology.

The team at University of Galway demonstrated that AGORA2 enables personalised, strain-resolved modelling by predicting the drug conversion potential of the gut microbiomes from 616 colorectal cancer patients and controls, which greatly varied between individuals and correlated with age, sex, body mass index and disease stages. This means that the team can create digital representations and predictions specific to the divergent microbes.

Professor Thiele added: “Knowledge of our individual microbiomes and their drug metabolising capabilities represents a precision medicine opportunity to tailor drug treatments to an individual to maximise health benefit while minimising side effects.

“By using AGORA2 in computer simulations our team have showed that the resulting metabolic predictions enabled superior performance compared to what was possible to date.”

Professor Paul Ross, Director of APC Microbiome Ireland, said: “This research is a perfect illustration of the power of computational approaches to enhance our understanding of the role of microbes in health and disease – significantly this digital platform will be a fantastic resource that could lead to the development of novel personalised therapeutic approaches which take the microbiome into account.”

This work was led by University of Galway and completed as part of a collaboration between many international institutions, including the Argonne National Laboratory, the University of Lorraine, and University Medicine Greifswald.

25 January 2023

The National Crystal Growing Competition 2023 is back

The iCRAG SFI Research Centre for Applied Geosciences, together with SSPC, the SFI Research Centre for Pharmaceuticals, have announced the 2023 National Crystal Growing Competition officially open. The competition, which is open to all primary and post-primary level students and individuals, challenges them to grow the biggest and highest quality single crystal.

The National Crystal Growing Competition is an important scientific outreach activity that will challenge participants to grow crystals using ingredients readily available in the home. This is a fun hands-on experience that aims to introduce students to the exciting world of growing crystals and encourage an interest in science, technology, engineering and maths (STEM).

Martin McHugh, Project and Public Engagement Officer for SSPC commented: "It is through education and outreach activities such as this that we will inspire the next generation of scientists and crystallographers. The process is safe and simple, and is designed to encourage students to develop an interest in chemistry. One of the most fun ways to interact with future scientists is through this crystal growing competition."

Elspeth Sinclair, Education and Public Engagement Officer for iCRAG added: "The competition is open to individuals, in small groups or class groups from both primary and post-primary level. We encourage all students to enter to develop their scientific interest for this exciting challenge and try their hand at growing their own single crystals through this national contest that will be judged by professional

chemists. We are looking forward to seeing the results and hope all those involved will understand and discover the science behind this process."

The National Crystal Growing Competition fits within SFI's public engagement remit. The aim of the competition is to have fun with science and also inspire young minds to explore careers in the areas of STEM. The competition challenges individuals or groups to grow a single crystal from a variety of compounds such as: Salt (Sodium chloride or Potassium chloride), Alum, Sugar, or Copper sulphate.

The competition originated in 2014 with the International Union of Crystallography (IUCr) Crystal growing competition, as part of the celebrations for the International Year of Crystallography. It has since grown from strength to strength and is a great addition to the many SFI outreach programmes hosted in Ireland.

To enter the competition, participants must send a picture of their crystal to experts at iCRAG and SSPC before the closing date of April, 28, 2023. More information, including crystal recipes and growing instructions can be found on the National Crystal Growing Competition websites, bit.ly/crystalcomp and https://sspc.ie/education/.

iCRAG is hosted at the University College Dublin and SSPC at the University of Limerick, with both working with a host of partners.

SARS CoV-2 Virus Updates and Developments

Human T cell immunity is coping with mutations in SARS-CoV-2 variants of concern

1 December

Human T cell immunity is coping with mutations in SARS-CoV-2 variants of concern (news-medical.net)
doi.org/10.1038/s41590-022-01351-7

Where Exactly Did Omicron Come From? | Technology Networks

2 December

Where Exactly Did Omicron Come From? | Technology Networks
doi: 10.1126/science.add8737

Surprising Omicron origins study comes under scrutiny

6 December

Surprising Omicron origins study comes under scrutiny (nature.com)
doi: https://doi.org/10.1038/d41586-022-04357-1

Mucosal IgA fused nanobody as a non-invasive, cost-effective prophylaxis and therapeutic option against major SARS-CoV-2 variants

2 December

Mucosal IgA fused nanobody as a non-invasive, cost-effective prophylaxis and therapeutic option against major SARS-CoV-2 variants (news-medical.net)
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Mutations in SARS-CoV-2 spike protein impair epitope-specific CD4+ T cell recognition | Nature Immunology

1 December

Mutations in SARS-CoV-2 spike protein impair epitope-specific CD4+ T cell recognition | Nature Immunology
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SARS-CoV-2 Omicron infections pose long-COVID risks despite reduced severity

2 December

SARS-CoV-2 Omicron infections pose long-COVID risks despite reduced severity (news-medical.net)
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Vaxxinity will push for approval of COVID booster after trial shows noninferiority to market leader Pfizer | Fierce Biotech

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Vaxxinity will push for approval of COVID booster after trial shows noninferiority to market leader Pfizer | Fierce Biotech

Route of self-amplifying mRNA vaccination modulates the establishment of pulmonary resident memory CD8 and CD4 T cells

2 December

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Researchers Shed Light on Blood-Clotting After COVID-19 Vaccination

5 December

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Findings from researchers in Basel didn't show an 800-fold increase in myocarditis in vaccinated people compared to unvaccinated individuals - Health Feedback

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Holding Methotrexate After Second COVID-19 Vaccine Dose May Be Best in Psoriatic, Rheumatoid Arthritis

28 November
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Severe COVID could cause markers of old age in the brain

5 December
Severe COVID could cause markers of old age in the brain (nature.com)
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The off-patent drug that could protect us from future COVID-19 variants

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The off-patent drug that could protect us from future COVID-19 variants (cam.ac.uk)

Pre-existing SARS-CoV-2 antibodies may increase the breadth of mRNA vaccines, study suggests

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Covid: Omicron BQ, XBB subvariants cause more than 70% of infections
9 December
Covid: Omicron BQ, XBB subvariants cause more than 70% of infections (cnbc.com)

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COVID: what we know about new omicron variant BF.7 (theconversation.com)

Our third COVID Christmas – here's how things might play out

13 December
Our third COVID Christmas – here's how things might play out (theconversation.com)

How convergent evolution is creating new COVID-19 waves

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Fauci responds to Musk's Twitter attack and rates world's COVID response

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Advances in gene therapies for intractable diseases

December?
Advances in gene therapies for intractable diseases (nature.com)

The benefit-risk of the mRNA-1273 COVID-19 vaccine

12 December
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Covid: BQ, XBB omicron subvariants pose serious threat to boosters

14 December
Covid: BQ, XBB omicron subvariants pose serious threat to boosters (cnbc.com)

'Cocktail' vaccines could offer protection against current and future SARS-CoV-2 'variants of concern'

15 December
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This Week at FDA: VRBPAC to weigh COVID vaccine updates; a new gene therapy and more | RAPS

16 December
This Week at FDA: VRBPAC to weigh COVID vaccine updates; a new gene therapy and more | RAPS

Research reveals that a viral toxin may contribute to the severity of COVID-19

14 December
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Experiments Show Infection of Visceral Fat Cells May Contribute to Severe COVID-19

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'We made a mistake.' Omicron origin study retracted after widespread criticism | Science | AAAS

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US moves to simplify Covid vaccines into yearly dose to target variants | Coronavirus | The Guardian

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Volume 24, Number 46
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Pages 28045- 28642

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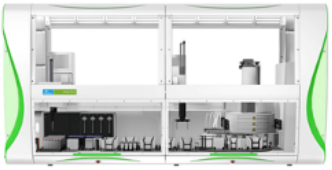

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Highest Increase in FDI Employment ever

12 December 2022

Performance 2022

Numbers directly employed in multinational sector in Ireland reach 301,475, the highest Foreign Direct Investment (FDI) employment level ever and a 9% increase on 2021

- Continued substantial growth in FDI in 2022 despite a difficult global economic environment
- 32,426 gross new job gains in 2022 – 24,019 net jobs
- 242 investments won in 2022 - 103 of them new name investments
- 52% - 127 of the 242 investments won went to regional locations – with employment growth in every region of the country
- "Strong growth of the past decade in FDI employment continues in 2022 despite turbulent global environment" – IDA Interim CEO

Outlook

- Positive pipeline for H1 2023 but outlook more uncertain for second half of next year
- "Sustaining Ireland's FDI performance in this climate of significant uncertainty, with persistent risks, requires a renewed focus on capacity constraints and competitiveness challenges" – IDA Interim CEO

IDA Ireland, the inward investment promotion and development agency of the Irish Government, today reported strong annual results for 2022 with a substantial increase in growth in FDI employment on 2021.

Total employment in IDA client companies in Ireland now stands at 301,475*, a 9% increase on 2021. 103 of the 242 investments won in 2022 were new name investments.

(*The Annual Employment Survey shows employment in client companies on October 31st 022. The results are preliminary, and any changes made post October 31st will be picked up in the following years survey.)

Job losses remained at historically low levels with 8,407 recorded in the past year giving a net jobs total of 24,019 for 2022.

Total employment in IDA client companies in core sectors grew in 2022, up 9% to 116,192 in Information and Communications Services, up 8% 105,199 in modern manufacturing, 5.6% in traditional manufacturing to 23,658 and up 9% to 56,426 in business, financial and other services.

The strong growth in regions continued this year with 127 - or 52% of the investments won going to regional locations and employment growth recorded in every region of the country. Employment growth was highest in the Mid East region; up 13.1% to 21,861. The Midlands Region was up 10.5% to 7,665, Dublin was also up 10.5% to 137,822, the Border up 6.3% to 8.885, the South West was up 7.5% to 52,228, the West region was up 7.3% to 31,490 the Mid West recorded a growth increase of 3.6% to 26,004 and there was growth of 3% in the South East, to 15,520.

With sustainability one of five pillars of our strategy, IDA's strong focus was evident in the number of sustainability project approvals in 2022 with 21 investments secured, the majority of them focused on climate change mitigation. A focus on transformation is more important than ever if companies are to remain competitive amid an accelerating shift towards a low carbon and high-tech economy. The resilience and longevity of MNCs in Ireland reflects their ability to constantly transform in response to change. IDA is engaging with clients on RD&I, training, digitisation and sustainability related investments to ensure the FDI base is positioned for continued success in the future.

The 2022 figures continue the pattern of sustained, robust growth in FDI investment and FDI-related employment that has been achieved over a continuous period of more than ten years. However, at the announcement of our mid-year results in July, we pointed to serious global challenges and uncertainties. It is now evident that the global economy faces serious headwinds

in 2023 with the continuing Russia-Ukraine war, inflation, monetary policy and geo-political developments.

IDA continues to monitor the situation in the global technology sector and continues to actively engage with its technology client base. The layoffs announced in recent weeks are regrettable and our thoughts are with those who have lost, or are in the process of, losing their jobs. The companies that have announced job losses in recent days will continue to operate in Ireland and are important companies in the global and Irish ecosystem. IDA's focus is on the continued partnership with these companies to continue to grow their presence in Ireland and deepen their impact on the Irish economy. The technology base in Ireland has been building for over 60 years and will continue to grow in the future, despite current challenges. The underlying strength in the technology sector is driven by a number of factors, including the pace of digitalisation (across all sectors) and the associated need for new digital infrastructure and services.

An Tánaiste & Minister for Enterprise, Trade & Employment Leo Varadkar T.D. said: "Ireland has not been immune to the challenges created by global events of recent months, and we expect those to continue into 2023. However, these figures show that Ireland continues to be seen as a location of choice for new investors and long-established companies who chose to reinvest in substantial expansions of their operations here.

These are the best ever FDI employment figures in a single year – 24,019 net new jobs represent a 43% increase on 2021, which itself was a record year. The numbers directly employed in the multinational sector have also surpassed the 300,000 mark for the first time.

It is extremely positive to see the growth in investment outside of Dublin continue in 2022, with a good nationwide spread achieved.

I know it's a difficult time for people working in Tech companies as we enter the Christmas and New Year period. My office is in close contact with the companies involved and we are working with them to minimise the impact on people's livelihoods and the wider economy.

While I am concerned about the job losses in Tech, there is a good pipeline of new investments coming from the multinationals and Irish-owned corporations in a range of sectors including Life

Sciences, Food and Beverages, Manufacturing and Aviation. We expect many positive announcements in the coming months. The economy is well diversified. Ireland continues to maintain a reputation as an excellent location for investment.

Last week I launched a new White Paper on Enterprise which sets out the Government's enterprise policies in the period to 2030. Foreign Direct Investment will remain central to our economic model. The White Paper seeks to advance Ireland's FDI and trade value proposition and includes the targets of a 20% increase in IDA client expenditure in Ireland by 2024; and at least half of all FDI investments between 2021 and 2024 to be located outside of Dublin."

Mary Buckley, Interim CEO IDA Ireland said: "The challenging and volatile international environment that we saw in 2021 escalated this year. In light of that, these annual results are most encouraging and show that investors' commitment to Ireland remains strong and Ireland's value proposition as a place to do business remains a compelling one. That said, the now evident severe headwinds facing the global economy in 2023 means we will have to work harder than ever in the year ahead to win new investment. Our FDI base of companies is also subject to these headwinds. IDA will remain close to our clients at this time of uncertainty and support them as companies review their global cost base to remain competitive. A focus on transformation is more important than ever if companies are to remain competitive amid an accelerating shift towards a low carbon and high-tech economy. The resilience and longevity of MNCs in Ireland reflects their ability to constantly transform in response to change. IDA is engaging with clients on RD&I, training, digitisation and sustainability related investments to ensure the FDI base is positioned for continued success in the future.

In the face of such uncertainty, we are likely to see companies adopt a cautious approach, so slower growth is likely in 2023 with less clarity in H2 of next year.

We continue to see opportunities across and within our sectors of focus, which we believe remain well aligned to the global economy of today and well positioned to succeed in the transformed economy of the future. At the same time, we will continue to seek out and exploit opportunities in new and emerging growth areas in an evolving investment landscape."

The forthcoming ABSEI2* survey will show that expenditure within the economy by FDI companies increased during 2021 despite the prevailing challenging conditions. Payroll was up 9.8% to €19.6bn, Irish services and materials spend increased by 10% to €11.1bn and capital expenditure was up 8% to €9.2bn. Exports of €315.5bn represented an increase of 8.7% year on year. This resilience and growth from FDI has been an important contributor to our economy and the national finances.

(**The Annual Employment Survey provides an analysis of employment levels in Industrial (including Primary Production) and Services companies under the remit of IDA Ireland, Enterprise Ireland and Údarás na Gaeltachta. The results show employment in client companies on October 31st 2022. The results are preliminary, and any changes made post October 31st will be picked up in the following years survey.*)

The altered political and economic landscape and its immediate future implications for FDI is a key focus of IDA's current mid-term review of its strategy **(Driving Recovery & Sustainable Growth – 2021-2024)**. The review is considering FDI implications arising from the global trends including the rise of industrial policy, open strategic autonomy, global tax reform, the future of work, the sustainability imperative and the increased prominence of geopolitics as a factor in the economic outlook. "Considering the many changes we have seen over the last few years and the changes facing us in the years ahead, it is an opportune time for us to set a renewed medium-term vision for our strategy" the Interim CEO said. IDA also proactively engaged with Department of Enterprise, Trade and Employment on the newly launched White Paper on Enterprise as IDA's strategic objectives are strongly aligned on the two dominant trends of the 21st century, decarbonisation and technological change.

Mary Buckley: "We have experienced much change in recent years from the national recession from 2008 to the global pandemic, and considerable global economic and political upheaval. Responding proactively to change has been the hallmark of Ireland and IDA's success and we will continue to be agile, resourceful and committed in our aim to continue to attract FDI to Ireland.

To remain successful in the years ahead we need to accelerate the carrying capacity of the economy with regard to housing, energy, water, planning, infrastructure and also with talent policies. Continued action at speed and scale to address these issues is essential if we are to successfully move to an internationally competitive low carbon, high tech economy.

Client companies remain positive about the business environment in Ireland and our attractiveness relative to key competitor locations for FDI. This is borne out by a good pipeline of investments for H1 2023. Ireland's strengths continue to include our skilled and diverse talent base, high quality education and training ecosystem, stable and consistent policymaking, and competitive corporate tax regime."

Key Announcements for 2022

- **Analog Devices. Limerick.** Announced it will invest €100 million over the next three years in ADI Catalyst, a 100,000ft2 custom-built facility, that will see the creation of 250 jobs
- **IBM. Dublin. Cork. Galway**. Announced plans to hire 200 people across its operations in Ireland
- **Intel. Kildare**. Announced a substantial further investment of €12 b in Ireland as part of its overall European plans. It brings to €30 b the total invested in Ireland since 1989
- **Apple. Cork**. Announced that is to further expand its operations in Cork with the addition of a new campus building that will afford it extra capacity to accommodate 1,300 employees
- **Ericsson. Westmeath.** Announced its plans to hire 250 people at its Irish Research and Development Centre in Athlone.
- **Kaseya. Louth**. Announced plans to establish a new Centre of Excellence in Dundalk, creating 250 jobs over the next three years
- **Okta. Dublin.** The leading independent identity and access management company opened a new office in Dublin's Docklands, where it intends to create 200 new jobs by 2024
- **Dell. Cork.** Officially open its €2 m newly redeveloped Customer Solution Centre at the company's campus in Ovens, Co. Cork

- **Lilly. Limerick.** Announced plans to invest more than €400 m in a brand-new manufacturing facility in Limerick, creating more than 300 jobs
- **Johnson & Johnson Vision. Limerick.** Announced a €35 million investment in its facility in Limerick, with the potential to create up to 200 new jobs over the next three years
- **Workday. Dublin.** Announced that it intends to create 1000 new jobs over the next two years at its European headquarters in Dublin
- **MarketStar. Dublin.** The global leader in outsourced sales and B2B revenue acceleration announced a new location for its EMEA HQ in Dublin's Central Park Business District, with plans to create up to 300 new jobs over the next three years, bringing its Dublin-based team to 500 by 2025
- **TikTok. Dublin.** TikTok's growth in Ireland continues with the news that it will hire an additional 1,000 new staff to its operations in Dublin. It brings to 3000 the number of people it will employ in Ireland
- **VMware. Dublin.** Announced it is extending its presence in Dublin with a commitment to recruit 205 new technologists by 2025
- **Janssen. Cork.** Announced the expansion of its biopharmaceutical supply chain facility in Ringaskiddy. The €150 m investment in the facility has the potential to create 180 new full-time jobs
- **MGS. Kildare.** Announced expansion plans for its Leixlip plant in Kildare with a €7 m investment and 100 new jobs
- **Huawei. Dublin.** Announced a €150 m investment and the creation of 200 new jobs as it plans to open its first European cloud hub in Dublin
- **Boston Scientific. Galway.** Unveiled a new €100 m expansion of its operations at Ballybrit in Galway. This expansion is expected to enable 300+ jobs and includes more than 40,000ft2 of medical device manufacturing space that will be powered by renewable energy
- **Merck. Cork.** Announced it will invest approximately €440 m to increase membrane manufacturing capacity in Carrigtwohill and to build a new manufacturing facility at Blarney Business Park, both in Cork. The investment, which is the largest in a single site

ever for Merck's Life Sciences business sector will create more than 370 permanent jobs by the end of 2027

- **Medtronic. Galway**. Celebrated 40 years at its Parkmore facility in Galway and announced 200 Research & Development roles
- **Stryker. Cork.** Celebrated the official opening of the high-tech facility at Anngrove. The new 156,000-square-foot development creates capacity for 600 high-tech jobs in the future
- **Abbott. Kilkenny. Donegal.** Announced it is to construct a new greenfield manufacturing facility in Kilkenny and further invest in its Donegal Diabetes Care site, representing a combined investment of €440 m and creating 1,000 jobs between the two sites
- **MSD. Carlow.** Announced the creation of over 100 new jobs in Carlow as part of the company's ongoing commitment to strengthening its manufacturing capabilities
- **Horizon Therapeutics plc. Waterford.** Submitted a planning application to expand its development and manufacturing facility in Waterford. The planned facility is expected to create approximately 350 jobs over time
- **J&J Vision. Limerick.** Announced the expansion of its existing facility in Plassey, Limerick. The €100 million investment has the potential to create 80 new jobs
- **Pfizer. Dublin**. To invest over €1.2 bn at its Grange Castle facility. This investment will see a new facility built on the site premises and will double the capacity for biological drug substance manufacturing at the facility and create 400 - 500 jobs
- **Citi. Dublin.** Citi announced that it intends to create 300 new jobs for Ireland this year
- **Fidelity Investments. Dublin.** Announced further expansion of its national footprint commencing a recruitment drive for 300 new fulltime positions for its team in Ireland
- **FinTrU. Donegal.** Announced the establishment of a European Delivery Centre in Letterkenny and the creation of 300 jobs over the next five years
- **Waystone. Tipperary.** Announced that it is to substantially increase its Ireland-based workforce by creating up to 100 additional new roles in Cashel, Co. Tipperary
- **Ultra Clean. Cavan.** Announced the establishment of an Advanced Technology Cleaning Centre in Cavan, creating 100 jobs

- **Three Ireland. Limerick.** Announced a strong expansion of its operations at its Limerick customer experience centre, with the creation of 175 new jobs over the next four years
- **Grifols. Dublin.** Inaugurated a new albumin purification and filling plant at its global manufacturing and supply hub in Grange Castle, Dublin, creating 200 jobs
- **EnerMech. Westmeath.** Officially opened its first facility in Ireland, creating approximately 170 jobs opportunities over the next three years

IDA Ireland Property Programme – Year End 2022

Under IDA's Property Programme the regional building programme will see 19 Advanced Building Solutions delivered in regional locations across Ireland during the lifetime of the strategy.

The current status of this programme is that construction has been completed on four buildings: an Advance Technology Building (ATB) for Monaghan, an Advance Office Building (AOB) for Sligo, an Advance Building Solution (ABS) for Dundalk and the Advance Manufacturing Centre (AMC) in Limerick.

Four buildings are under construction at present, in Carlow (ABS), Limerick (ABS) and Waterford's third ABS and an AOB for Athlone. The Limerick ABS will be completed before the end of the year with the remaining three due for completion in Q1 2023.

Other buildings under the programme, ABS for Sligo, Cavan, Galway, Letterkenny, Mullingar, Drogheda, Longford, Tralee, Oranmore and Castlebar, are in various stages of site identification, design, procurement and planning phases. IDA is also engaged with a number of local authorities for the delivery of advance planning permission in regional locations through partnership agreements.

In addition to these Advance Building Solutions and our existing business parks, IDA Ireland has acquired a number of landbanks for future development in counties Kildare, Westmeath, Kerry, Waterford, Laois, Cork, Galway and Louth.

Link to Annual Results 2022 Slideshow: https://www.slideshare.net/IDA-Ireland/idairelandceo-endofyearppt2022v7-final-versionpptx

Read the full article here

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Irish Government and IDA Ireland welcomes Pfizer's $1 billion expansion

1 December 2022

IDA Ireland, together with An Tánaiste Leo Varadkar welcomed today's announcement by Pfizer to invest over €1.2 billion at its Grange Castle facility. This investment will see a new facility built on the site premises and will double the capacity for biological drug substance manufacturing at the facility and create hundreds of new jobs at the facility.

Pfizer first established operations in Ireland in Ringaskiddy 1969, growing and has continuously invested in its facilities over the past 53 years. They presently employ some 5,000 people in Ireland.

Tánaiste Leo Varadkar TD said: 'The pharma sector is such an important part of the Irish economy and the commitment shown by Pfizer to further expand its business here is great news. The work undertaken at their facilities across Ireland saves and improves the lives of people all over the world. I am very pleased that their presence in Dublin, and indeed in Ireland, continues to go from strength to strength.'

IDA Ireland Interim CEO Mary Buckley said: ''Pfizer has had a presence in Ireland for over 50 years and this major additional investment, adding further drug substance capacity to its already substantial Irish operations and jobs, underscores the strategic importance of Ireland in Pfizer's global operations. It is proof of the company's future commitment to Ireland and testament to Ireland's continued attractiveness as a location for investment.''

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Green Talent is on the rise – increased focus required to meet climate targets – Labour Market Pulse

21 December 2022

- LinkedIn data shows that 13% of LinkedIn members in Ireland are considered ‘’green talent’’
- Total number of people employed in Ireland maintained at record levels while unemployment rate has returned to pre-pandemic levels below 5%
- Hiring rates have started to decline from post-pandemic highs, at 12.7% lower in October 2022 than October 2021

Wednesday 21st December 2022 - IDA Ireland, in partnership with Microsoft and LinkedIn, has today published its latest Labour Market Pulse, which provides an overview of the current insights and trends across the Irish labour market to help inform decision makers across business, academia and public policy.

This edition of the Labour Market Pulse takes a closer look at the skills needed to support the transition to the green economy. This is particularly relevant off the back of the recent COP27 conference, where attendees called for more ambitious climate targets and stronger commitments to tackling climate change. This Labour Market Pulse shows the rising importance of green skills among today’s workforces. The latest data from LinkedIn, based on analysis of the skills added by the platform’s 875+ million members globally over the past seven years, reveals that the share of green talent on LinkedIn has risen from 9.6% to 13.3% between 2015 and 2021.

Ireland mirrors global and European talent trends, with 13% of LinkedIn members in Ireland considered ‘green talent’ in 2021. This includes LinkedIn members that work in green jobs, requiring skills that enable the environmental sustainability of economic activity, and those that have these skills listed on their profile.
The increase of green talent on LinkedIn has been driven partially by new sustainability-focused jobs but predominantly by jobs in other sectors with sustainable elements, such as compliance managers or data scientists. The most popular green skills groups added on LinkedIn in Ireland last year were Sustainability, Environmental Awareness, Renewable Energy, Environment, Health and Safety (EHS) and Environmental Science.

Green work
In 2021, approximately 10% of LinkedIn Ireland members hired were in green jobs or jobs that benefited from green skills. Hiring for green jobs almost doubled from 2016 figures.

Green jobs have particularly grown since 2019, coinciding with the implementation of climate targets and policies such as the Climate Action Plan. The continuation of this growth since 2020 has been encouraged by the focus on sustainability as a critical component to economic recovery following the Covid-19 pandemic. This focus has been implemented at all levels, for example through the European Union Recovery and Resilience Facility's requirement for Member States to focus plans on sustainability and digitisation.

It is estimated that the Irish economy will need to fill over 20,000 jobs by 2030 just to support leading green economy sectors. Although new entrants to the labour market will fill some of these gaps, investment in lifelong learning, training and upskilling initiatives will be key to ensure future demand for green skills is met.

Employment
Meanwhile, the report also looks at employment rates in Ireland and highlights a decline in the hiring rate from post-pandemic highs. However, this 2022 figure is still above hiring rates in both October 2019 (+6.3%) and 2020 (+6.75%).

Amid several economic headwinds, uncertainty dampened consumer spending in Ireland during the first quarter of the year. However, the labour market continued to perform strongly throughout 2022, with CSO data showing that the total number of people employed in Ireland reached record levels of 2.55 million people in Q2 of 2022 and maintained them in Q3.

Overall Ireland is approaching current economic challenges from a position of high employment, strong economic growth and robust public finances. IDA Ireland has seen a strong flow of foreign direct investment with several major announcements across sectors and regions and IDA's recently announced annual results showed further growth in investment and employments in the multinational sector in 2022. Foreign direct investment is also growing rapidly in the green economy. The renewable energy sector was the biggest recipient of FDI globally in both 2020 and 2021, taking over from Coal, Oil and Gas which had been the traditional leader.

Eamon Ryan, Minister for Transport, Climate, Environment & Communications commented "Ireland is committed to one of the most ambitious climate action plans of any developed country with the aim of achieving climate neutrality by 2050 at the latest, and a 51% reduction in emissions by 2030. Key to guaranteeing a more sustainable and secure future is ensuring we have the right green skills to power the transition to net zero - and the data from LinkedIn highlights that this workforce transition is already underway in Ireland. The growing sustainability skillset among Irish professionals coupled with the future demand for talent not only in a range of burgeoning climate sectors - like renewable energy and retrofitting but also in more traditions sectors - indicates the breadth of opportunities ahead in the journey to tackle climate change."

Commenting on the Labour Market Pulse, **IDA Ireland Interim CEO Mary Buckley** said: ''I welcome the data insights which shows that the green economy is a rapidly growing sector and that the increase in green talent demonstrates the focus that companies are putting on sustainability. Despite uncertainty in the global economy, it's encouraging to see hiring rates of green talent almost double from 2016 and reflects the importance of sustainability.''

Also commenting on today's results, **James O'Connor, Microsoft Ireland Site Lead and Vice President of Microsoft International Operations**, said: "The ever growing need to protect the planet is forcing businesses to transform how they operate and to equip their teams with the skills to drive sustainable transformation forward. With a recent UCC report commissioned by Microsoft Ireland revealing that only 9% of Irish businesses consider themselves truly sustainable, it is reassuring to see the focus on 'green' talent in this latest Labour Market Pulse as it will greatly help to accelerate the transition to a net zero future while harnessing the new business opportunities that the green economy is unlocking."

Sharon McCooey, Head of LinkedIn Ireland, added: "A pronounced shift to green skills and jobs is already underway as evidenced by our latest data and recent IDA projects. With over 20,000 roles to be filled by 2030 in order to meet demand by companies in Ireland hiring for green skills, this presents a sizeable opportunity for businesses and job seekers alike. LinkedIn will continue to provide ongoing insights to help future talent, existing professionals and organisations realise the opportunities to come as we transition to a green economy."

Full details on the latest insights from Labour Market Pulse can be found here.

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Siemens Healthineers launch laboratory equipment R&D centre in Swords

13 January 2023

- euro investment from Siemens Healthineers, with support from IDA Ireland.
- The Centre will focus on uncovering breakthrough innovations in laboratory diagnostic equipment, used to help diagnose disease in laboratories and hospitals across the globe.
- Local economy set to benefit from 100 new jobs with 65 high-level engineering roles.

Siemens Healthineers has announced the launch of a Centre of Excellence for Immunoassay Instrument Research and Development (R&D) in Swords, Ireland. The new Centre will focus on unlocking breakthrough innovations in laboratory instruments used to detect infectious diseases, cancer and blood disorders. The existing manufacturing and engineering site, which supplies medical diagnostic equipment globally, will receive a multi-million-euro investment from Siemens Healthineers. This project is supported by the Irish Government through IDA Ireland. The investment will create additional jobs and enable clinicians to optimise patient care by bringing new levels of precision, efficiency and reliability to the diagnostic laboratories that serve them.

Taoiseach Leo Varadkar TD states: “Congratulations to Siemens Healthineers on the launch of their Centre of Excellence for Immunoassay Instrument Research and Development. This is a significant expansion with the creation of 100 new jobs, the majority of which will be highly skilled, providing great opportunities for engineers. This new Centre is testament to Ireland’s strong reputation for R&D. Exciting new technology like that which will be developed in Swords, can make a real difference to people’s lives, to patient outcomes and to healthcare systems globally. I wish the team at Siemens Healthineers the very best for many successful years and continued growth in Ireland.”

This significant investment by Siemens Healthineers will span multiple years and create 100 new jobs with 65 of those to be high-level engineering roles specialising in artificial intelligence, machine learning, software engineering, systems engineering and data science. This will more than double the existing

engineering team and transform the site into an innovation hub, growing knowledge, providing new training opportunities and developing a pool of expertise in immunoassay technology.

The Centre will push the boundaries of science and engineering. Improvements to existing diagnostic techniques will enhance disease detection capabilities with the goal of delivering faster, higher precision results with improved patient insights. This will help to meet the extremely high throughput and complex needs of hospitals and laboratories in Ireland and globally.

“The investment at Swords will build on our existing expertise in healthcare manufacturing, adding a critical research and development focus," states **Dr Dennis Gilbert, Head of R&D for Siemens Healthineers Diagnostics**. "Partnering with IDA has enabled us to move forward in ways that would not have otherwise been feasible and will allow us to pioneer breakthroughs in healthcare, helping hospitals and laboratories across the globe to diagnose disease more effectively and efficiently."

“This is an exciting opportunity for us to create an entrepreneurial research environment, while leveraging the strength and breadth of all that Siemens Healthineers has to offer," states **Fred O’Brien, VP of Manufacturing and Managing Director of Swords for Siemens Healthineers**. "It highlights the calibre of the existing team and with this investment we will create a hub of skilled and experienced engineers and researchers, broadening the scope of careers in the local area.”

‘’Today’s investment announcement by Siemens Healthineers is terrific news and demonstrates the company’s continued commitment to Ireland, where it’s had a presence in Dublin for 57 years,” states **Mary Buckley, Interim CEO of IDA Ireland**. “We welcome the company’s plans to create 100 new jobs across research and development and we wish continued success for Siemens Healthineers.”

Siemens Healthineers has been active in Swords supplying medical diagnostic equipment to hospitals and laboratories since 1966. The site manufactures haematology and immunoassay analysers and supports the continuous innovation of current and new products and the development of laboratory automation software, exported to more than 50 countries across all continents. Career opportunities available at Swords, Ireland will be advertised on the Siemens Healthineers recruitment portal.

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Enterprise Ireland Updates & Reports

https://enterprise-ireland.com/en

Two Irish women entrepreneurs win EU Prize for Women Innovators

8th December 2022

The European Commission has announced that two talented and inspiring Irish women entrepreneurs are winners in the EU Prize for Women Innovators 2022. Dr Ciara Clancy, founder and CEO of Beats Medical, has won in the Women Innovators category while Niamh Donnelly, co-founder and CRO of Akara Robotics, won in the Rising Innovators category. The competition celebrates the women responsible for Europe's most groundbreaking innovations, from tackling climate change to treating the world's deadliest diseases.

The overall six winners in the two categories from Ireland, Spain, France, Bulgaria and Portugal were announced at the European Innovation Council (EIC) Summit in Brussels yesterday, Wednesday 7 December. The three winners in the Women Innovators category will receive prizes of €100,000 each while the three winners in the Rising Innovators category will each receive €50,000.

This is the second year in a row that Ireland has won in the Rising Innovator category which recognises promising emerging innovators under the age of 35. Last year, Ireland's Ailbhe and Izzy Keane of Izzy Wheels won the award and a third of the entrepreneurs nominated for the finals were from Ireland.

The competition is funded by the EU's Horizon Europe programme for research and innovation and managed by the European Innovation Council (EIC) and SMEs Executive Agency (EISMEA). Enterprise Ireland leads the Horizon Europe National Support Network which aims to secure as much Irish

engagement with this funding programme as possible.

The prizes were announced by Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth, during the EIC's two-day summit in Brussels.

Enterprise Ireland CEO Leo Clancy said: *"This is great news for Ireland and reflects the notable rise of our women entrepreneurs in the start-up sector in this country. There were 14 finalists shortlisted for the six prizes, two of which were from Ireland. Both Dr Ciara Clancy of Beats Medical and Niamh Donnelly of Akara Robotics went on to win the overall prizes highlighting the international competitiveness and recognition of the calibre of women entrepreneurs emerging from Ireland. Enterprise Ireland continues to support and promote Irish women entrepreneurs with the aim of growing our talent pool while helping them to scale their businesses and ultimately create jobs. Overall, Ireland has enjoyed considerable success in EIC funding under the Horizon Europe programme with 15 Irish SMEs approved €86m in the last two years."*

For further information, read the European Innovation Council Statement.

Click here: Enterprise Ireland Press Office

https://enterprise-ireland.com/en

Enterprise Ireland, University College Dublin and French Embassy Announce New Agreement to Strengthen Innovation and Applied Research Links Between Ireland and France

16th December, 2022

At the signing of the MOU at NovaUCD are (left to right) HE Vincent Guérend, Ambassador of France to Ireland, Professor Mark Rogers, Acting UCD President and Leo Clancy, CEO, Enterprise Ireland.

Enterprise Ireland, University College Dublin and the Embassy of France in Ireland today announced the signing of a Memorandum of Understanding (MoU) establishing a new International Technical Expert (ETI) role dedicated to strengthening Innovation and Applied Research links between France and Ireland.

Building on the strong base of academic and cultural co-operation between France and Ireland, the ETI will work with multiple stakeholders in France and Ireland with the aim of broadening co-operation and mutual understanding in the fields of applied research and innovation. The ETI will be based at NovaUCD, Ireland's leading university incubator, which has supported over 500 start-ups and early-stage ventures.

The ETI will also work closely with the Research and Innovation Department at Enterprise Ireland, which is also the co-ordinator of the Irish National Contact Point network for the Horizon Europe programme.

In addition, the ETI will develop an in-depth understanding of the research and innovation landscape in both Ireland and France to identify strategic priorities common to both jurisdictions.

Commenting on this announcement, HE Vincent Guérend, Ambassador of France to Ireland, said of the project, “Research and Innovation is one of the most dynamic areas of Franco-Irish relations and this position highlights the special relationship between our two countries as France is now Ireland’s closest EU neighbour. This partnership with Enterprise Ireland and UCD is particularly innovative because of its positioning between administration, research and business. The agreement represents one of several milestones that we have achieved in the France-Ireland Joint Plan of Action, which was signed on the occasion of the visit of President Macron in August 2021 in Dublin. This post is one of only 6 of its kind in the world, so having one of them in Ireland is a real achievement.”

Professor Mark Rogers, Acting UCD President said, "UCD is delighted to be collaborating with the Embassy of France in Ireland and Enterprise Ireland to strengthen innovation and applied research links between Ireland and France, and to be hosting the international technical expert at NovaUCD.

Through NovaUCD and the Enterprise Ireland team, we look forward to working with the international technical expert to strengthen links between the French and Irish start-up, innovation and applied research ecosystems. By leveraging existing partnerships, and building new collaborations, we aim to increase the attractiveness of both countries to the strategic innovation and research opportunities we will create in the coming years."

Leo Clancy, CEO, Enterprise Ireland said, "Enterprise Ireland is delighted to be a key partner in this new initiative that will strengthen the research and innovation links between Ireland and France. Both France and Ireland place a high value on the enterprise and job creation potential of cutting-edge research and innovation and its role in tackling key global issues, such as decarbonisation. I look forward to the new synergies between the research and innovation communities in both countries that this new initiative will foster."

Editors Notes

Enterprise Ireland is the Irish government organisation responsible for the development and growth of Irish enterprises in world markets. We work in partnership with Irish enterprises to help them start, grow, innovate and win export sales in global markets. In this way, we support sustainable economic growth, regional development and secure employment. www.enterprise-ireland.com

University College Dublin is Ireland's largest and most diverse university and one of Europe's leading research-intensive universities. Since 1854 UCD has made a unique contribution to the creation of modern Ireland, based on successful engagement with Irish society on every level and across every sphere of activity. As Ireland's leading university in innovation, knowledge transfer and commercialisation, UCD's commitment to innovation and entrepreneurship recognises the importance of active participation and collaboration to exploit leading-edge research and development outputs. As set out in Rising to the Future 2020-2024 UCD's four strategic themes are creating a sustainable global society, transforming through digital technology, building a healthy world, and empowering humanity. www.ucd.ie

The French Embassy in Ireland is the diplomatic representation of the French Republic in Ireland. It is located in Dublin, the capital of the country. Since 2020 H.E Vincent Guérend is the Ambassador of France to Ireland. https://ie.ambafrance.org/

At NovaUCD, the hub for new ventures and entrepreneurs at University College Dublin, we nurture and support new high-tech and knowledge-intensive companies as part of UCD's mission. At NovaUCD we provide purpose-built, state-of-the-art incubation facilities alongside a comprehensive business support programme for client companies. Since opening in 2003 NovaUCD has supported over 500 start-ups and early-stage ventures which haver raised in excess of €1 billion in equity funding and created thousands of jobs. NovaUCD has been funded through a unique public-private partnership that includes AIB Bank, Arthur Cox, Deloitte, Enterprise Ireland, Ericsson, Goodbody Stockbrokers, UCD and Xilinx. www.ucd.ie/innovation

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Tánaiste announces funding of up to €13.3m for three innovative projects

16th December, 2022

Disruptive Technologies Innovation Fund continues to drive investment in research and innovation

The Tánaiste and Minister for Enterprise, Trade and Employment, Leo Varadkar TD, and the Minister for Further and Higher Education, Research, Innovation and Science, Simon Harris TD today announced that another three innovative projects have been approved funding of up to €13.3 million in the second tranche of awards under the fourth round of the Disruptive Technologies Innovation Fund (DTIF). This brings the total allocation of DTIF funding to over €288 million, with over €165 million (57%) of the funding awarded to project partners outside of Dublin.

Announcing the three additional awards under Call 4 of the DTIF, the Tánaiste and Minister for Enterprise, Trade and Employment, Leo Varadkar TD, said:

"Innovation opens the door to future growth, future prosperity and future jobs. I am glad that we are in a position to fund a further three disruptive innovation projects under Call 4 of the Disruptive Technologies Innovation Fund.

"The three additional awards will see €13.3m shared among the 11 partners involved, bringing total investment in this call to over €53m across 14 projects. It is really positive to see the commitment of the enterprise partners to match the Government investment, which will see a further €9m in private sector funding directed to these projects.

"The latest projects being funded involve collaboration on exciting projects in the MedTech and Climate Action sectors. These projects have the potential to significantly improve the quality of life for people with heart valve problems or leg ulcers, and to reduce the carbon footprint of livestock."

DTIF places a large emphasis on SME participation, to utilise their potential as drivers of disruptive innovation. The three successful consortia in this tranche of funding are being led by an SME, in collaboration with three other enterprise partners and five partners from our research institutions. 158 SMEs have been awarded funding in the four DTIF calls to date. SME participation is fundamental to the

continued stimulation of new technologies. These technologies will help us embrace new opportunities, futureproof our economy and provide resilience for the challenges we face today and for those that lie ahead.

Minister for Further and Higher Education, Research, Innovation and Science Simon Harris TD also welcomed the three latest DTIF awards:

"These three additional DTIF awards are further evidence of the links between excellent research and our strong industry base. The six enterprise partners and five research institutions involved will work together to convert their industrial research into products that can disrupt existing markets. Continuous innovation enables Irish companies to compete successfully in global markets. Such innovation is however dependent on having a solid science base, and I am proud that our research institutions so regularly demonstrate that they can rise to the demands required of them by industry. It augurs well for the ongoing success of our economy and society."

Leo Clancy, CEO of Enterprise Ireland, which administers the Disruptive Technologies Innovation Fund, said:

"Despite the huge challenges presented in recent years, Irish companies have remained agile, and have contributed to Ireland becoming a global hub for technology and innovation. The recipients of these awards, who are working on disruptive projects with the ability to potentially improve healthcare outcomes and to have an impact on sustainability, exemplify that innovation and resilience. These awards will support these companies to continue to be ambitious and will support further collaboration."

- Download Disruptive Technologies Innovation Fund (DTIF) – Second Tranche of Awards under Call 4 (2021 – 2022)

NOTE TO EDITORS:

The Disruptive Technologies Innovation Fund (DTIF) is a €500 million fund established under the National Development Plan (NDP) in 2018. The Department of Enterprise, Trade and Employment manages the DTIF with administrative support from Enterprise Ireland. The purpose of the Fund is to drive collaboration between Ireland's world-class research base and industry as well as facilitating enterprises to compete directly for funding in support of the development and adoption of these technologies. The aim is to support investment in the development and deployment of disruptive technologies and applications on a commercial basis.

Call 4 applications to DTIF were assessed by panels of international experts against four criteria – quality of the disruptive technology, excellence of overall approach, economic impact and sustainability, and strength of the collaboration.

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Job creation ahead of target - 218,178 now employed by Enterprise Ireland client companies

10th January 2023

• Net Jobs increased by 5% with 10,841 created in 2022
• 68% of total jobs outside the Dublin region
• 161 early-stage company approvals in 2022

The Minister for Enterprise, Trade and Employment, Simon Coveney TD and Enterprise Ireland, the Government agency responsible for developing Irish business globally, today announced the creation of 19,660 new jobs by Enterprise Ireland client companies in 2022. The jobs growth translates into a net increase of 10,841 jobs created last year.

Enterprise Ireland companies now employ 218,178 people, an increase of 5% on the 2021 outturn and 68% of these jobs are outside Dublin.

Employment increased across Enterprise Ireland's three core economic sectors - Technology & Services (+8%), Industrial and Life Sciences (+5%) and Food and Sustainability (+3%).

Strong employment growth was reported in specific sub sectors such as:

- Climate, Sustainability and Agritech (+13%)
- Digital Technology (+9%),
- High Tech Construction and Housing (+6%)
- Fintech, Financial and Business Services (+6%)

The Life Sciences and Engineering sectors both saw 5% employment growth.

Speaking at the launch of the figures today Minister for Enterprise, Trade and Employment, Simon Coveney TD said: *"The employment base in Ireland is already strong as further evidenced by the substantial jobs figures announced today by Enterprise Ireland. 2021 was a record year for employment creation in Enterprise Ireland companies and to see a further 5% increase in total employment in 2022*

shows the potential we have to continue to go from strength-to-strength. But we must not be complacent, and we need to continue to focus on the right things to further build the resilience of business and to keep innovation at the heart of that.

"A real positive of today's results is the regional balance in terms of both new jobs created and total employment. More than 147,000 people in the regions are now employed by Enterprise Ireland client companies, making an enormous contribution to local economies and communities.

"The Government's target to have a record 2.5 million people employed by 2024 has already been exceeded. Enterprise Ireland has also exceeded its own employment target for 2022 with these results announced today.

"I firmly believe that with a strong focus on innovation, digitalisation, sustainability and regional development, Enterprise Ireland will continue to enhance their significant contribution to growing and maintaining quality jobs in every region and county in Ireland.

"The White Paper on Enterprise which we published last December together with progressing the recommendations of the SME Taskforce and, in combination with Enterprise Ireland's own strategy, will help to guide us on our journey to drive the improvements that matter most to small businesses, particularly the evolution towards a green and digital future, which are the twin pillars of our future enterprise policy.

"To help business to adapt and to make the necessary changes we need to build on successful interventions, like the Digital and Green Transition Funds, and to reap the opportunities available.

The results announced today give us a really strong platform on which to further grow and expand our enterprise base and in a sustainable way."

Enterprise Ireland CEO Leo Clancy said: *"I am delighted to announce that 2022 was a strong year with our client companies creating 19,660 new jobs, growing net employment by 5%. This compares favorably with the latest CSO Labour Force Survey for 2022 which showed an increase of 3.4% in total employment across the economy."*

"Of note is the significant growth in key sectors of the economy ranging from Lifesciences, Prepared Consumer Food to Technology and Services."

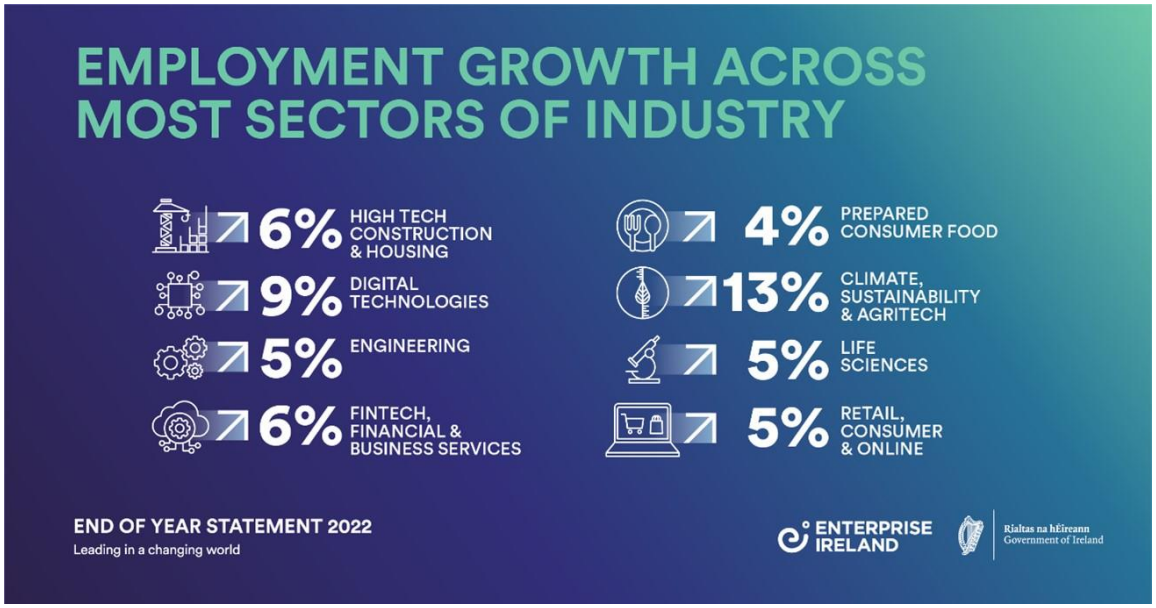
Today's announcement takes place at leading Irish tech firm Version 1's headquarters in Dublin.

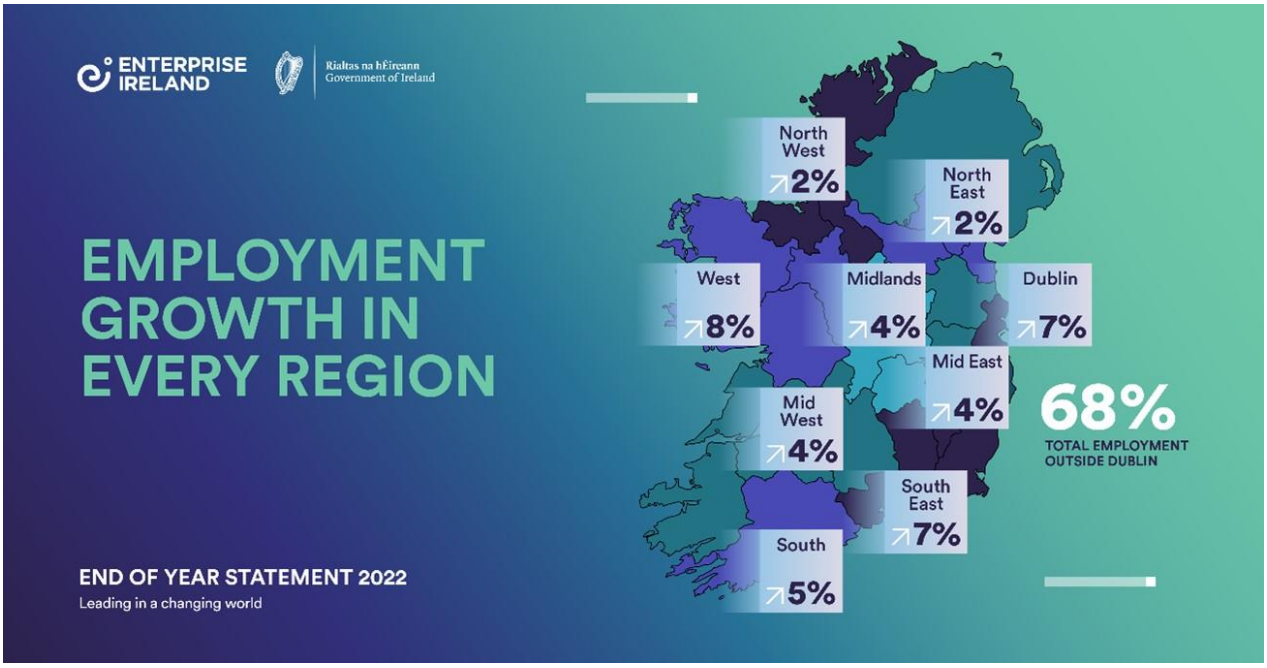
Leo Clancy continued,*"Enterprise Ireland supported companies like Version 1 play a vital role in the Irish economy, employing more than 218,000 people in cities, towns and villages throughout the country and making an enormous contribution to local economies.*

"Supporting Irish-owned companies to achieve greater scale and expand their global footprint is a priority for Enterprise Ireland in 2023 and we are committed to supporting Irish companies on their journey to become global leaders in their field. This will ensure that Irish enterprise continues to create and sustain jobs, providing a platform for strong economic growth into the future."

Version 1, a Technology Services company supported by Enterprise Ireland, recently surpassed 3,000 employees globally. Version 1 has embraced hybrid working and so, alongside employees in its Dublin, Cork and Belfast offices, it also has many employees working remotely from other locations across the country.

Louise Lahiff, Director of Strategy and People, Version 1 said: *"Enterprise Ireland's support has been essential in enabling our rapid growth, in particular in an environment with strong overseas competition for talent. We are proud to offer compelling, high quality, flexible job opportunities across Ireland in a values-led organisation and will continue to do so in 2023."*





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Applications are now open for Enterprise Ireland's 42nd Student Entrepreneur Awards competition

25th January 2023

Annie Madden, co-founder of FenuHealth, winner of the Student Entrepreneur Awards 2022

Awards are open to undergraduate and postgraduate students from across Ireland's third-level institutions

Closing date for entries is Thursday, 16 March 2023

Enterprise Ireland is inviting students from third-level institutions across the country who have an innovative business idea with real commercial potential to apply to this year's Student Entrepreneur Awards competition.

This year celebrates the 42nd year of the Student Entrepreneur Awards, which aim to encourage students with entrepreneurial ambitions from all academic disciplines to explore starting their own business as a career option.

The Student Entrepreneur Awards are co-sponsored by Cruickshank, Grant Thornton and the Local Enterprise Offices, and ten finalists will be selected to compete for several awards, such as the Cruickshank High Achieving Merit Award, the Grant Thornton High Achieving Merit Award and the Local Enterprise Office High Achieving Merit award.

The overall winner of the Student Entrepreneur Awards competition will receive a prize of €10,000 and mentoring from Enterprise Ireland to support them to develop the commercial viability of their concept. Other award winners will also receive expert advice and mentoring support from Enterprise Ireland, as well as sponsorship to help them turn their entrepreneurial ideas into reality.

University College Cork student Annie Madden, co-founder of FenuHealth, won Enterprise Ireland's 2022 Student Entrepreneur of the Year Award. Her company develops 100% natural products designed to prevent and resolve stomach problems in horses and ponies.

Other 2022 award winners included SETU student Alannah Pardy of Recapture One, a cloud-based multimedia company specialising in the development of personalised bereavement memorials, and from

St. Angela's College, Sligo; vitamin C and collagen snack company Rollagen, established by Claire Finnegan.

Richard Murphy, Manager Local Enterprise Offices Support, Policy & Co-ordination Unit, Enterprise Ireland said:

"Since its inception over four decades ago, the Student Entrepreneur Awards have provided young, ambitious entrepreneurs with the opportunity to showcase their innovative business ideas. Every year, we receive over 1,000 entries from third-level students from across the country. We continue to be inspired by the high-calibre entries which are a testament to the emphasis that our higher-level institutes place on entrepreneurship. The awards are a stepping-stone to success for Ireland's future business leaders and many past participants have excelled in entrepreneurship on both national and international levels. I'd encourage all third-level students to enter the awards now and start out on the journey to realising your entrepreneurial ambitions."

Annie Madden, of FenuHealth, winner of the 2022 Enterprise Ireland Student Entrepreneur of the Year, said: *"The recognition from the Student Enterprise Awards was a great boost for the business. I am now focusing on promoting the products more within the sport horse industry. As well as the recognition FenuHealth received, the advice I received from the judges during the Student Entrepreneur Awards process was really helpful, and I have implemented that within the business. I would encourage any students who have an innovative idea and entrepreneurial ambitions to consider applying for this year's Student Enterprise Awards."*

The closing date for Student Entrepreneur Award entries is Thursday, 16th March 2023. The award winners will be announced at a ceremony on Friday, 9 June 2023.

Entries to the Student Entrepreneur Awards 2023 can be made via www.studententrepreneurawards.com

About Enterprise Ireland

Enterprise Ireland is the Irish government agency responsible for the development and growth of Irish companies internationally in order to grow exports and jobs. Enterprise Ireland works with entrepreneurs and businesses to help them to start-up, develop innovative products and services, and scale internationally. Enterprise Ireland facilitates access to international markets through its international office network, supports business strategy & management capability training and provides finance, investment and research expertise.
www.enterprise-ireland.com

For further information contact:

Enterprise Ireland Press Office

https://enterprise-ireland.com/en

Enterprise Ireland has made three new appointments to its Executive Team

26th January 2023

Jenny Melia Marina Donohoe Gillian Brennan

Jenny Melia has been appointed as Executive Director with responsibility for Regions & Local Enterprise, Food & Sustainability and Industrial, Life Sciences & Construction. Jenny will have responsibility for a wide portfolio including our largest client segments and our initiatives in providing deep infrastructure for enterprise development in regional Ireland.

Jenny has a strong track record in leadership roles within the organisation. She is passionate about helping Irish companies to innovate and grow, and supporting Ireland's entrepreneurs to achieve their ambition. She first joined the Research and Innovation Division as a commercialisation specialist, and managed Enterprise Ireland's national research and technology programmes between industry and third-level research institutes. As the Irish liaison for EU nanotech and advanced materials funding programmes, Jenny was appointed by the EU Commissioner to their high-level advisory group.

She has since held a number of senior roles within the organisation across a variety of sectors, led the High Potential Start-Up (HPSU) team and was most recently the Divisional Manager for Technology and Services. She graduated from UCD with a BSc and PhD in Chemistry.

Marina Donohoe has been appointed as Enterprise Ireland's Head of Research and Innovation. In this role she will lead on Enterprise Ireland's extensive portfolio of investments in industry focused academic research and commercialisation of third level intellectual property. She will also manage a wide range of programmes focused on advanced innovation including in company-based research, Disruptive Technologies as well as our very successful teams focused on European research programmes.

Marina has enjoyed a distinguished career with Enterprise Ireland and has held a number of senior positions in our head office in Ireland, as well as across our network of international offices, including the United States and UK. Marina led on the establishment of six new offices globally for Enterprise Ireland, including Silicon Valley, Sao Paulo and Copenhagen, and the development of the organisation's Eurozone strategy.

She previously served as the Manager of our West Coast office in the US, as well as the Director for Americas. Marina also spent time as the Clean Tech manager in the organisation, as well as serving as

Head of the Business and Consumer Services department and Head of Education in Ireland. She was most recently the Enterprise Ireland Director for UK and Northern Europe, a role she held for eight years.

Marina is a graduate of Trinity College Dublin (BSc Mgmt), UCC/IMI (MoB) and has attended executive development programmes at IMI, Stanford, Colombia and LSE.

Gillian Brennan joined Enterprise Ireland earlier this month as Divisional Manager for Business Operations, leading all of Enterprise Ireland's core business support functions. Gillian is a Chartered Accountant with 20 years' experience across a range of Business Operations, Financial Management, and Portfolio Management roles.

Prior to joining Enterprise Ireland in 2023, Gillian spent nine years with Accenture, working with clients to prioritise, plan and deliver strategically important IT and business transformation programmes. Throughout her career, she has worked with a wide variety of companies across Public Sector, Technology and Financial Services. Gillian is passionate about mentoring young people entering STEM and business roles. She has an MBA from Smurfit Business School, a Diploma in Corporate Finance (ICAI), is a Project Management Professional (PMI), and certified in Lean Six Sigma.

Speaking about these appointments, Leo Clancy, CEO, Enterprise Ireland said:

"I am delighted to announce the promotions of my colleagues Jenny Melia and Marina Donohoe and to welcome Gillian Brennan to Enterprise Ireland, taking up key positions on our Executive Team.

"Enterprise Ireland, through our new strategy, is committed to working with our excellent Irish owned enterprise sector to create a step change in impact for this country by the end of this decade. This depends on leadership and ambition among our clients, but also on ensuring we have leaders at all levels within our organisation.

"These colleagues have proven track-records of leadership in Enterprise Ireland and elsewhere. I am confident they will bring new and innovative approaches to their respective roles, focusing on our mission of accelerating the development of world class Irish companies."

Contact: Enterprise Ireland Press Office

siliconrepublic

Trinity, Teagasc and UCD win big at KTI Impact Awards 2022

2 December

The annual awards from Knowledge Transfer Ireland recognise innovation and collaboration in bringing public-funded research to the commercial space.

Trinity College Dublin (TCD), Teagasc and University College Dublin (UCD) were recognised at the Knowledge Transfer Ireland (KTI) Impact Awards 2022 for their role helping produce commercial impact from academic research.

To read more go to:
Trinity, Teagasc and UCD win big at KTI Impact Awards 2022 (siliconrepublic.com)

Article by:

Vish Gain is a journalist with Silicon Republic
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Five women awarded STEM-focused Trinity scholarship

6 December

Trinity plans to award 25 women the Connect to STEM scholarship over the next five years, which is worth €20,000 per student and supported by Three Ireland.

Trinity College Dublin has announced the recipients of a new scholarship that aims to attract more women to STEM subjects.

Five women have been selected for the Connect to STEM scholarship, which is worth €20,000 for each student over a four-year undergraduate programme.

To read more go to:
Five women awarded STEM-focused Trinity scholarship (siliconrepublic.com)

Article by:

Leigh Mc Gowran is a journalist with Silicon Republic
editorial@siliconrepublic.com

Irish women awarded top EU innovator prizes

7 December

Dr Ciara Clancy and Niamh Donnelly were among the six winners at the EIC's awards for women innovators.

Irish entrepreneurs have once again come out on top at an EU ceremony celebrating innovative women founders.

The winners of this year's EU Prize for Women Innovators were announced by European commissioner Mariya Gabriel during the two-day summit of the European Innovation Council.

Dr Ciara Clancy, founder and CEO of Beats Therapeutics, was one of three winners of the main Women Innovators award.

To read more go to:
Irish women awarded top EU innovator prizes (siliconrepublic.com)

Article by:
Elaine Burke is the host of For Tech's Sake, a co-production from Silicon Republic and The HeadStuff Podcast Network. She was previously the editor of Silicon Republic.

UCC researcher awarded €2.5m from EU to look into antibiotics alternatives

12 December

The EU-backed project aims to tackle antimicrobial resistance, which has become a problem due to over-reliance on antibiotics and a lack of new drug development.

The director of Science Foundation Ireland's APC Microbiome research centre has been awarded an EU grant to investigate alternatives to antibiotics.

APC Microbiome is located at University College Cork (UCC). Prof Paul Ross is the first researcher based at the university to receive such a grant, which comes from the European Research Council (ERC).

Ross has been awarded €2.5m in funding for his investigations under the ERC's Advanced Grant programme.

To read more go to:
UCC researcher awarded €2.5m from EU to look into antibiotics alternatives (siliconrepublic.com)

Article by:
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Tiny sensors created by Irish scientists could help farmers cut pollution

14 December

The sensor tech lets farmers know in real time what the nitrate levels in the soil are, meaning less fertiliser needs to be spread.

As part of efforts to make farming more environmentally friendly, researchers in Cork have developed new sensor tech to measure the levels of nitrates in soils more accurately.

Nitrates are essential for plant growth, but too much can be a pollutant affecting biodiversity in rivers, lakes and oceans.

The sensors mean that testing for nitrates can be done in real time instead of in laboratories – a process that farmers would have to wait for and that would only reveal the levels at a particular point in time.

To continue reading go to:
Tiny sensors created by Irish scientists could help farmers cut pollution (siliconrepublic.com)

Article by:
Blathnaid O'Dea is Careers reporter at Silicon Republic
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Cork's Tyndall Institute teams up with US semiconductor start-up incubator

20 December

Silicon Catalyst's semiconductor start-up founders will be able to tap into insights from researchers at Ireland's Tyndall Institute.

Tyndall National Institute has formed a partnership with Silicon Catalyst, a semiconductor start-up incubator based in the US.
The collaboration will connect the Irish research centre to scaling start-ups and SMEs, creating new working partnerships between industry and academia globally.
Based at University College Cork, Tyndall specialises in deep-tech research in electronics and photonics. Its team works with industry to transform research into products in its core areas of electronics, communications, energy, health, agri-food and the environment.

To continue reading go to:
Cork's Tyndall Institute teams up with US semiconductor start-up incubator (siliconrepublic.com)

Article by:
Blathnaid O'Dea is Careers reporter at Silicon Republic
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Galway researchers make healthcare breakthroughs with biomarkers research

21 December

Two separate teams of University of Galway researchers found that certain biomarkers can indicate Parkinson's disease and the likelihood of breast cancer recurrence.

Researchers at University of Galway have identified a set of biomarkers in people's blood that can distinguish patients with Parkinson's disease from those not affected.

The study was led by Prof Adrienne Gorman of University of Galway's School of Biological and Chemical Sciences and a paper has been published in the journal Molecular Neurobiology.

"This research brings us one step closer to improving Parkinson's disease diagnosis," said Gorman.

To continue reading go to:
Galway researchers make healthcare breakthroughs with biomarkers research (siliconrepublic.com)

Article by:

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Major boost for Ireland's technological universities with new buildings

22 December

The new buildings around the country will cost about €250m, with many providing spaces for STEM education.

Six new higher education buildings will be constructed across multiple campuses in the eastern, southern and midlands regions of Ireland.

The construction plans were announced by Minister for Further and Higher Education, Research, Innovation and Science Simon Harris, TD.

The buildings will be located at TU Dublin's Tallaght and Blanchardstown campuses, Munster Technological University (MTU) campuses in Cork and Kerry, the Athlone campus of Technological University of the Shannon (TUS) and at the Institute of Art, Design and Technology (IADT) in Dún Laoghaire.

To continue go to:
Major boost for Ireland's technological universities with new buildings (siliconrepublic.com)

Article by

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33 research infrastructure projects bag €53.3m in SFI funding

3 January

The projects range from a new platform to test novel fertilisers to a one-stop shop for battery development.

A new wave of funding has been announced to support 33 high-impact research infrastructure projects across Ireland.
These endeavours will receive a total investment of €53.3m through the Science Foundation Ireland (SFI) Research Infrastructure Fund. The funding was announced by Minister for Further and Higher Education, Research, Innovation and Science Simon Harris, TD.

Harris said the funding will support "transformative research" which will have a "national and international impact".

To continue reading go to:
33 research infrastructure projects bag €53.3m in SFI funding (siliconrepublic.com)

Article by
Leigh Mc Gowran is a journalist with Silicon Republic
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University of Galway picks Prof Peter Doran to lead clinical research centre

6 January

Doran said he will work with the University of Galway's clinical partners and industry to ensure the success of the new clinical research institute.

Prof Peter Doran has joined University of Galway's College of Medicine, Nursing and Health Sciences, where he will lead its new clinical trials institute.

Doran will be tasked with directing the institute's medical research, overseeing scientists as they work to develop new treatments, medical diagnostics and preventative therapies.

According to Doran, the new clinical trials institute aims to have an impact "locally, nationally and globally".

To continue go to:
University of Galway picks Prof Peter Doran to lead clinical research centre (siliconrepublic.com)

Article by
Blathnaid O'Dea is Careers reporter at Silicon Republic
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Prof Tomás Ward appointed director of SFI's Insight centre at DCU

9 January

Ward has been a principal investigator at Insight since 2018, focusing on machine learning development for the improvement of human health, performance and decision-making.

The Science Foundation Ireland (SFI) Insight research centre for data analytics has appointed Prof Tomás Ward as the new director of its Dublin City University branch.

To continue reading go to:
Prof Tomás Ward appointed director of SFI's Insight centre at DCU (siliconrepublic.com)

Article by:
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Teen innovators scoop total prize fund of €5,000 at TECS awards in UL

11 January

This year's TECS winners were Samir Bioud, Kishi Akinyemi and Surabhi Sathish. The competition for young innovators is in its second year.

Ten teams of secondary school students were recognised for their tech and entrepreneurial acumen at this year's national awards ceremony for TECS (Technologists, Engineers, Creators, Scientists).

To continue reading go to:
Teen innovators scoop total prize fund of €5,000 at TECS awards in UL (siliconrepublic.com)

Article by:
Blathnaid O'Dea is Careers reporter at Silicon Republic
editorial@siliconrepublic.com

Poolbeg Pharma wants to use key flu medication to treat cancer

16 January

POLB 001, a treatment for severe influenza developed by Poolbeg, has the potential to address life-threatening side effects in the treatment of cancer.

Poolbeg Pharma, a biopharmaceutical company that focuses on infectious diseases, has filed a patent for one of its therapies to be used in cancer treatments.

To continue reading go to:
Poolbeg Pharma wants to use key flu medication to treat cancer (siliconrepublic.com)

Article by
Vish Gain is a journalist with Silicon Republic
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Irish scientists discover new potential treatment for superbugs

17 January

University of Galway research suggests antibiotics become more effective at eliminating superbugs when combined with purines, which are found in our DNA.

Scientists have shared a new method to improve the treatment of superbugs such as MRSA, which are resistant to typical antibiotics.

To continue reading go to:
Irish scientists discover new potential treatment for superbugs (siliconrepublic.com)

Article by:
Leigh Mc Gowran is a journalist with Silicon Republic
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University of Galway scientists test Irish families for glyphosate toxin

23 January

The Galway study comes as the EU is yet to decide the outcome of its review on the use of controversial herbicide glyphosate.

A study carried out by University of Galway researchers has found low level traces of the toxic herbicide glyphosate in a quarter of the people tested.

To continue reading go to:
University of Galway scientists test Irish families for glyphosate toxin (siliconrepublic.com)

Article by:
Blathnaid O'Dea is Careers reporter at Silicon Republic
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EPA awards €10.7m to 42 climate research projects across Ireland

28 January

The funding will support more than 200 researchers as they address various challenges, such as restoring the environment and working towards a green economy.

Ireland's Environmental Protection Agency (EPA) has awarded €10.7m to research projects tackling the climate crisis.

To continue reading go to:
EPA awards €10.7m to 42 climate research projects across Ireland (siliconrepublic.com)

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