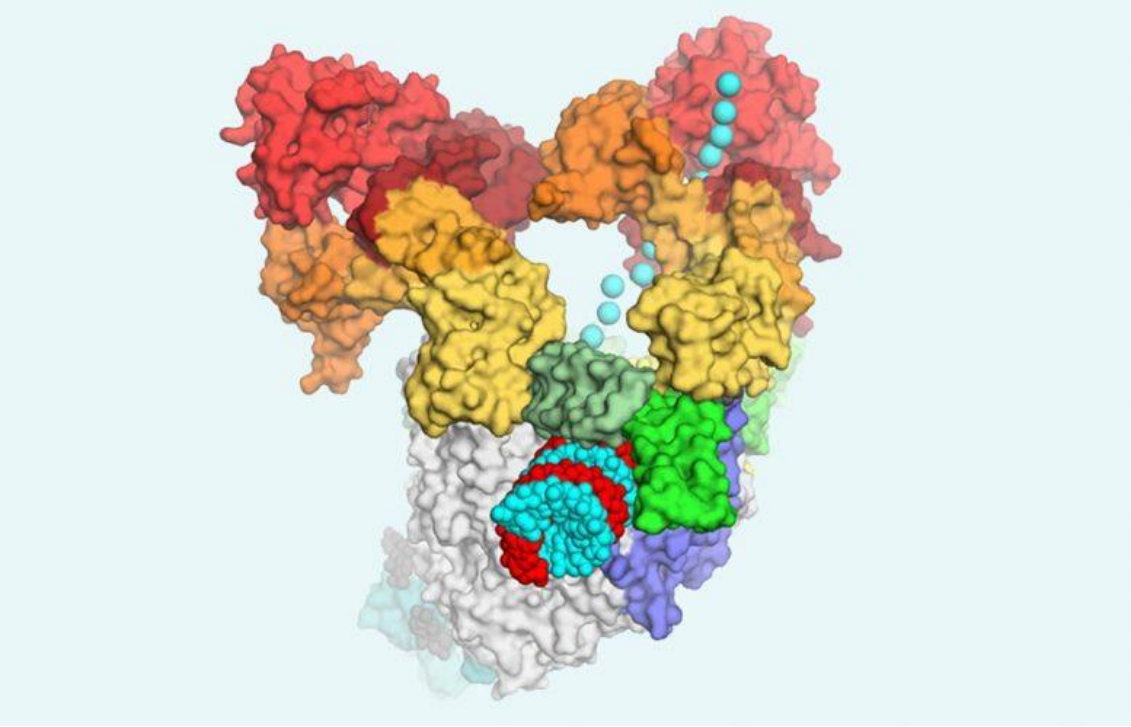
Institute of Chemistry of Ireland

Irish Chemical News

A Journal of the Institute of Chemistry of Ireland

Complex Puzzle Revealed: Never-Before-Seen Image of the SARS-CoV-2 Coronavirus Copy Machine - Page 36



Two essential enzymes coordinate to read and copy SARS-CoV-2 genetic material (shown as blue spheres). Credit: Rockefeller University.

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

Contents:

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

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A Message from the President

Dear Fellows, Members, Graduates and Associates,

I sincerely hope you are all keeping safe and well. It has been such a challenging time for our society as a whole and for NPHET and the government in trying to control the spread of Covid while endeavouring to find the balance between protecting lives and livelihoods. Since the publication of the last ICN issue, our primary and secondary schools and third level institutions have re-opened their physical doors and welcomed back their students. The teachers and academic and administrative staff are to be congratulated for putting in place all of the necessary safety precautions while trying to retain a positive learning environment for all of their students and staff. Yes, it is challenging and yes, it is different but I don't think we can underestimate the importance of a safe and nurturing educational environment and its impact on not only the educational needs but also the social and personal development of our students. On behalf of the ICI, may I wish everyone well as we continue to navigate our lives in this time of Covid-19.

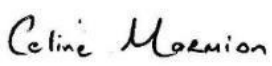
While we have seen a number of key events either cancelled or deferred in 2020, I am pleased to report that the inaugural ICI Postgraduate Chemistry Research Symposium took place virtually on the 9th September 2020, with over 150 registered delegates joining the conference throughout the day. Flash and oral presentations by postgraduate chemists made up the bulk of the programme, organised into four thematic sessions, with topics ranging from medicinal and synthetic chemistry to supramolecular and analytical chemistry. In total 43 PhD students from all over the island of Ireland shared their work with their peers. The symposium also hosted the first ever mental health seminar delivered at an Irish chemistry event. Delivered by Miffy Hoad of Mental Health Ireland, delegates were given concrete methods on how to stay connected, reduce stress, increase mindfulness and cope with these unprecedented times. The recipient of the ICI Postgraduate Award 2019, Dr Saoirse Dervin, also delivered her award lecture. On behalf of the Institute, may I congratulate the organising committee, co-chaired by Dr Joseph Bryne (NUIG) and Dr Mark Kelada (our ICI Young Chemist representative and Council member), and comprising a number of postgraduates from different higher education institutions across Ireland for all that they did to ensure the success of the symposium. The Institute also launched its call for the ICI Postgraduate Award 2020 during the symposium with a deadline of the 9th October, 2020. We have received a number of outstanding nominations which are now being independently reviewed. Further details in relation to the winner of this award will be communicated shortly.

I am also delighted to say that the 72nd ICI AGM will take place virtually on Thursday, 19th November, 2020. Further details will be posted on the ICI website (www.chemistryireland.org) and communicated directly to our members via email.

Our thanks once again to Patrick Hobbs on publishing yet another excellent edition of the Irish Chemical News. May I encourage you please to submit articles of interest or indeed notifications that you feel may be of interest to our members for inclusion in future editions.

Finally, on behalf of Council, may I wish all our Fellows, Members, Graduates and Associates continued good health and happiness.

Yours sincerely,



Professor Celine J. Marmion PhD FRSC FICI
President, Institute of Chemistry of Ireland
16th October, 2020

ANNUAL GENERAL MEETING

on THURSDAY 19th NOVEMBER 2020

Notice is herewith given that the 72nd Annual General Meeting of the Institute of Chemistry of Ireland will be held virtually, on Thursday, 19th November 2020 at 17:00. All members of the Institute are invited to attend.

Further details to members will follow shortly.

Editorial

The Covid-19 crisis still affects every aspect of our lives including postponement of Institute events. Our Council meetings are now happening on line and our AGM and Awards events are postponed till later when they will be on line. The Annual Congress and Irish Universities Chemistry Colloquium have been moved to 2021 and details will follow later in 2021.

The good news is that when I first drafted this editorial there were 5 vaccines in Phase 3 Trials and a couple of days this had risen to 10. Hopefully we will have positive outcomes by spring next year.

With so many chemistry related events cancelled I have less material available to report on. However there was one very successful Postgraduate Chemistry Research Symposium organised by post graduate students from around Ireland which was very successfully hosted on Zoom, sponsored by our Institute. A report on this symposium is in preparation and will be presented in the next issue of ICN later this year.

I continue to read and scan hundreds of papers and reports every week on the SARS CoV-2 virus with Irish and International links. I present a selection of these in this Issue 3 up to the end of September. They are roughly in time order or the order I gain access to them. I have tried to cover many aspects of the virus and the associated Covid-19 disease. There are some more papers on the structure and chemistry of the virus such as the cover page and on page 36.

In addition I continue to review chemistry related articles and topics of interest to academics and there is a whole section devoted to these reports under “Chemistry and related Science around the World”.

These feeds on the virus continue and more interesting understandings on the molecular level is emerging about Sars-Covid 2 and strategies to design drugs and vaccines to treat and eliminate it. Interesting chemistry related articles continue and I will have many interesting links in the next Issue.

As I indicated in the Issue 2 due to copyright issues I can’t republish most of these, so I have provided active links to summaries and original papers which should provide many hours if not days of reading during this time of restricted social activity.

As usual there are links to some interesting Silicon Republic reports, industry news from SFI, IDA, Enterprise Ireland, and Industry & Business.

Our new updated website is live: **https://www.chemistryireland.org** Check for updates

Comments and Responses are welcome and can be sent to: - **info@instituteofchemistry.org**

Patrick Hobbs MSc, FICI, CChem, CSci, MRSC.
Editor

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.

Nomination process: The nominator 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 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.

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.

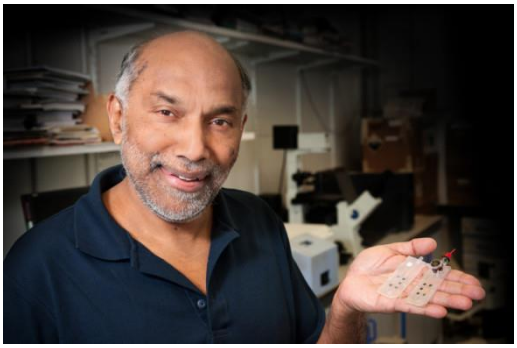
Nomination Process: The nominator, who must be the student's PhD supervisor, shall send one electronic copy of their nomination by email to the President of the Institute, which will include a cover letter providing a brief resume of the reasons for the nomination, together with a CV (maximum 2 pages)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

ICI website: http://www.chemistryireland.org
Nominations to be sent to the ICI President at: president@instituteofchemistry.org
Details in relation to other ICI Awards are available on the ICI website

ICI Award Winners 2020

Postponed due to current Covid-19 crisis until further notice

Boyle Higgins Gold Medal Lecture Award 2020



Professor A.P. De Silva, QUB

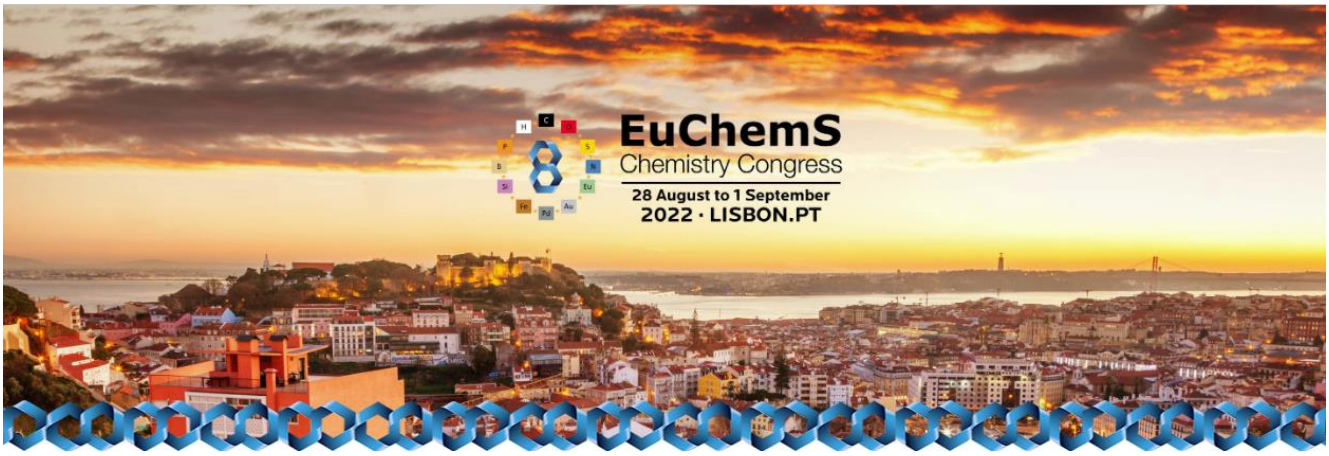
The ICI Annual Award for Chemistry (Eva Philbin Public Lecture Series) 2019

Professor Declan McCormack from TU Dublin

The ICI Postgraduate Award 2019

Ms Saoirse Dervin (Sligo IT).


Prizes for Oral, Flash & Poster Presentations
Career & Mental Health Awareness Seminars
Institute of Chemistry of Ireland
The Inaugural
ICI Postgraduate Chemistry Research Symposium
Wednesday, September 9th, 2020
Virtual event on zoom
Deadline for abstract submission:
26th of AUGUST 2020
For abstract submission and more information visit:
www.icipostgraduateresearchday.wordpress.com



Postponed to August 28, 2022

"The COVID-19 pandemic that so deeply affects our lives and countries is not expected to end soon, and its consequences will be felt for a long time. In particular, satisfactory conditions for international scientific conferences to take place will certainly not be fulfilled in the next months. We are thus forced to postpone the 8th EuChemS Chemistry Congress. On the 3rd of May, 2020 the Executive Board of EuChemS, in consultation with the Scientific and Organizing Committee in Portugal were able to settle on a new date for the 8th EuChemS Chemistry Congress.

This was no easy decision but was a necessary one, and the only appropriate option, given the enormous material and immaterial compromise already assumed by the local organization. We praise our supporters and all the body of EuChemS, in particular the organizers of the forthcoming event on the series, for joining the Portuguese Chemical Society (SPQ), with the support of the Portuguese Electrochemical Society (SPE), in the announcement of the new date of 8th EuChemS Chemistry Congress (ECC8), to be held in **Lisbon, Portugal, from August 28 to September 1, 2022".**

Congress Program

Loyal to the initial theme, the 8th EuChemS Chemistry Congress will be built under the unifying theme of **Chemistry the Central Science**. The focus will remain on the central role of chemistry at the interfaces with biology, material and environmental sciences, both for the progress of humankind and for the solution of fundamental problems of modern societies. Some changes will be indeed introduced since nothing remains the same after the enormous test to which we are all being submitted. For the time being, we are still working on an exciting scientific program led by world-class experts, that will develop around the main scientific previously selected.

All previously submitted contributions will not be processed without notice to the 2022 ECC8 program. An opportunity for updating your contributions will be announced in due time. We will keep your pre-registration in our files so that we may send you further information in due time. If you do not agree, please let us know (by a simple e-mail to euchems2020@chemistry.pt) and we will delete your full record. Nevertheless, we hope to see you all in Lisbon in 2022, for celebrating the continuation of this regular series of EuChemS Chemistry Congresses.

Cancellation Procedure and Refund policy

Registrations completed before congress postponement, will remain valid for the 2022, 8th EuChemS Chemistry Congress, if desired. Participants who want a refund, **must cancel their participation by June 30** addressing their request to euchems2020@chemistry.pt. Refunds will be handled promptly with no charges.

Registration is temporarily suspended and will reopen during **2021**.

(https://euchems2022.eu)

EuChemS
European Chemical Society

9th EuChemS European Chemistry Congress to be held in 2022 in Dublin, Ireland, deferred to 2024

At the meeting of its Executive Council, The European Chemical Society (EuChemS) executive awarded the 9th EuChemS European Chemistry Congress to Dublin. This prestigious congress is held every two years and brings together the leading researchers and industry partners in all chemistry disciplines from across Europe and the wider international arena.

Ireland Section

The organisers expect over 1,500 delegates from around the globe to attend the event in The Convention Centre Dublin, in 2024. The five-day programme will consist of plenary and parallel lectures, poster sessions, symposia, networking events, and an industrial exhibition.

The European Chemical Society, was official announced at ECC7 in Liverpool, August 2018. Formerly (2004–2018) the European Association for Chemical and Molecular Sciences (EuCheMS) and before that (1970–2004) the Federation of European Chemical Societies (FECS).

The European Chemical Society (EuChemS) coordinates the work of almost all the European Chemical Societies. As an organization, it provides an independent and authoritative voice on all matters relating to chemistry, and places chemistry at the heart of policy in Europe. Furthermore, EuChemS seeks to develop its members through various activities, workshops and awards.

Under the new EuChemS the next Congress, ECC8 will be hosted by **The Portuguese Chemical Society** (SPQ), with the support of the **Portuguese Electrochemical Society** (SPE), invites you to attend this must go to series of European chemistry conferences, the **8th EuChemS Chemistry Congress (8ECC)**, to be held in Lisbon, Portugal, from 28th August to 1st September, 2022.

Notices & Announcements

Institute of Chemistry of Ireland AGM 2020 and Awards Postponed until further notice. Annual Congress and Irish Universities Chemistry Colloquium postponed until 2021.

Council meetings to take place by Microsoft Teams

IMSS
Irish Mass Spectrometry Society

21st September 2020
Dear all,
After much deliberation with our IMSS committee, and due to the recent increases of COVID19 cases around the country we have decided to postpone the IMSS 2020 until next year. It is not a decision we take lightly, but the health and safety of our members is our primary concern.

Furthermore, we will offer a full refund for all those members who bought tickets, or vendors who agreed to sponsor us. However, any tickets purchased for IMSS 2020 can also be used for IMSS 2021 and any sponsorship for IMSS 2020 can also be carried over to IMSS 2021. The decision is entirely up to you so please let our treasurer, @Conor copied, know your preference.
We will keep you updated on any changes in the coming months.
Patrick Ward
IMSS Chair
www.imss.ie

IBICS
Irish Biological Inorganic Chemistry Society

Due to the COVID pandemic which is still evolving, we took the decision to postpone the meeting until May 2021. I will keep you posted on any further updates.

With thanks and regards,

Constantina Papatriantafyllopoulou
Lecturer in Inorganic Chemistry
School of Chemistry, NUI Galway
Galway, Ireland

NUI Galway Researcher Elected as Member of the European Molecular Biology Organization

Professor Brian McStay, Centre for Chromosome Biology at NUI Galway

7 July

The European Molecular Biology Organization (EMBO) has bestowed NUI Galway's Professor Brian McStay with the lifetime honour of EMBO membership in recognition of his achievements in the life sciences, it was announced today.

Professor McStay graduated from Trinity College Dublin with a BA in Genetics and from University of Edinburgh with a PhD. After post-doctoral research in the Fred Hutchinson Cancer Research Centre, Seattle USA, he then started his own research group in the University of Dundee. Since 2008 he has been a Professor in the Centre for Chromosome Biology at NUI Galway.

Speaking after today's announcement, Professor McStay said: "I am delighted that the work in my laboratory at the Centre for Chromosome Biology on the inner workings of the nucleolus in human cells has been recognised by my peers."

Professor Noel Lowndes, Director of the Centre for Chromosome Biology and a member of EMBO since 2003, said: "I would like to welcome Brian as NUI Galway's second elected member of EMBO. Brian is now just one of seven others in Ireland who are members of the organisation. Election to the membership of EMBO is the highest honour within European life sciences ranging from Bioinformatics to Zoology and I am delighted to welcome my Centre for Chromosome Biology colleague to the membership."

EMBO Members actively participate in EMBO initiatives, for example by serving on EMBO Council and committees, by mentoring young scientists, or supporting activities such as the promotion of sound science policy. Members also guide and support the organisation in ensuring the highest quality in the selection of future members, postdoctoral fellows, and courses and workshops.

"The new Members have contributed to the success of research in the life sciences in Europe and around the world," said EMBO Director Maria Leptin. "As EMBO Members they can help to shape the future through EMBO's work to support talented researchers, bring ideas together, and promote an international research environment conducive to excellent science."

Institute of Chemistry of Ireland as a Co-Owner Benefits when you publish in PCCP

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

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

http://pubs.rsc.org/en/journals/journalissues/cp#!recentarticles&adv

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JOHN SCANLAN INDUSTRY ENGAGEMENT AWARD

Each year MaynoothWorks recognises excellence in the commercialisation of research at Maynooth University. We consider activity such as invention disclosures recorded, licence deals completed, new patents filed, spinout company creation and developing new collaborations and links with industry as key factors in bringing research to the marketplace.

Dr John Stephens of the Chemistry Department was awarded the first John Scanlan Industry Engagement Award. Dr Stephens has expertise in Medicinal Chemistry, Synthetic Chemistry, and the application of Chemistry to Biological challenges. Dr Stephens' research is focused on the discovery and application of new technologies at the interface of Chemistry and Biology, with many of his research targets having potential as molecules of biological significance.

A number of projects involve working at the intersection of chemistry & food science, as well as medicinal endpoints including diabetes, cancer, and bacterial/ fungal infections. Dr Stephens' research has been supported by several funding agencies (EI, SFI, IRC, EU) and partnering with industry is an important aspect of his work (AF Chempharm, Dual Systems, others confidentially). Dr Stephens is currently leading an interdisciplinary collaboration with a large Irish food company. The main focus of this research is to add value to existing and new product lines. The project is funded through an Enterprise Ireland Innovation Partnership.

Dr John Stephens (centre) receiving the John Scanlan Industry Engagement Award, presented by Prof Ray O'Neill and supported by Dr Karen Griffin, MaynoothWorks Commercialisation Executive

School of Chemistry and Chemical Engineering Holds Annual Postgraduate Research Event

20 JULY, 2020

The School of Chemistry and Chemical Engineering has held its annual postgraduate research event, in partnership with world-leading pharmaceutical company Eli Lilly.

2020 School PGR event prize winners, and representatives from Eli Lilly. In numerical order: Toyah Warnock, Dr Kevin Lydon (Eli Lilly), Gavin Irvine, Andrew McClure, Chunchun Li, Tommaso Pellegrinelli, and Dr Sam Moursy (Eli Lilly).

The event, which was delivered online across the 6th and 7th July, provides the School's postgraduate students with an opportunity to present their most recent findings, and discuss their work with peers, School academics, and industrial academics from partner organisation, Eli Lilly.

More than 20 postgraduate research students from the School presented their work, from across a broad range of disciplines within chemistry and chemical engineering.

Speaking of the event, Director of Postgraduates, Dr Mark Muldoon said:

"It was fantastic to hear about the research being carried out in the School across a wide breadth of topics in chemistry and chemical engineering. The standard of talks was exceptionally high, and the judging panel had a difficult time to select winners from this cohort. We are grateful to colleagues at Eli Lilly, who not only sponsored this event, but also gave their valuable time, participating in discussions with the students both in relation to their research, and future careers."

A number of prizes, sponsored by Eli Lilly, were awarded to presenters following judging by a panel consisting of School academics, and Dr Kevin Lydon, Consultant Scientist at Eli Lilly Kinsale. Prizes were awarded to Toyah Warnock, Chunchun Li, Tommaso Pellegrinelli, Gavin Irvine, and Andrew McClure.

Following the event, Dr Lydon, who also delivered a webinar in relation to careers at Lilly at the event, said:

"Again, a very impressive year for research in chemistry and chemical engineering at Queen's. The postgraduate students presented their work to an excellent technical depth and with great confidence."

This event will complement a further postgraduate event set to take place later in the summer, which will allow students to discuss their work across a number of online poster sessions.

First ever woman president of an Irish university appointed at University of Limerick

Professor Kerstin Mey has been named as interim president for the next 18 months

Thu, Jul 9, 2020
Carl O'Brien Education Editor

Interim president of the University of Limerick Kerstin Mey is the first woman to hold the presidency of an Irish university. Photograph: Sean Curtin/ True Media.

The first ever woman president of an Irish university in the 400-plus years of higher education has been appointed at University of Limerick. Professor Kerstin Mey has been named as interim president of the university for the next 18 months.

She will replace outgoing president Dr Des Fitzgerald, who announced his intention to retire in May. The interim president will serve as chief officer of the university until the appointment of a new president through an open international recruitment process. UL's governing authority ratified the appointment of Prof Mey following a special meeting on Thursday.

Chancellor of UL Mary Harney said Prof Mey would be a "great appointee and one in whom we have every faith in to lead the university at a challenging time. She has already demonstrated her capacity for leadership in her role as vice president." Ms Harney said there has long been a significant gender imbalance at senior leadership level in Irish universities.

"It is fitting that UL now has the first female president given our consistent leading position on gender equality in higher education in Ireland," she added.

Professor Mey, who was appointed vice president and professor of visual culture at UL in April 2018, previously held roles as pro-vice chancellor and dean of the Westminster School of Media, Arts and Design and as professor of contemporary art and theory at the University of Westminster, London. She said she was "proud and really humbled to lead the University of Limerick over the next period". "It is a significant opportunity and also a huge challenge and I will be aiming to work with all staff, students, governing authority, the communities UL serves, our stakeholders in the city and the region and of course the government to underpin the role that universities will play in the economic recovery as we manage the pandemic," she said.

Read the rest of this article at:

https://www.irishtimes.com/news/education/first-ever-woman-president-of-an-irish-university-appointed-at-university-of-limerick-1.4300301

SARS CoV-2 Virus Updates and Developments.

RIA: Survey Results: The impact of COVID-19 on Irish research and innovation

https://www.ria.ie/news/policy-and-international-relations-covid-19-research-response/survey-results-impact-covid-19 &

https://www.ria.ie/sites/default/files/ria_covid_19_survey-_final_1.pdf

A Nobel Winner Explains Why The Way You Breathe Is So Important During The Pandemic.

Role of nitric oxide

https://www.sciencealert.com/there-s-a-proper-way-to-breathe-to-keep-your-lungs-healthy-and-it-could-help-against-the-coronavirus

Was coronavirus really in Europe in March 2019?

28 June

https://www.sciencealert.com/was-coronavirus-really-in-europe-in-early-last-year

https://theconversation.com/was-coronavirus-really-in-europe-in-march-2019-141582?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20June%2029%202020%20-%201664016026&utm_content=Latest%20from%20The%20Conversation%20for%20June%2029%202020%20-%201664016026+CID_6221090da02705aa899c0d3ca831f661&utm_source=campaign_monitor_uk&utm_term=Was%20coronavirus%20really%20in%20Europe%20in%20March%202019

https://www.medrxiv.org/content/10.1101/2020.06.13.20129627v1

The European Bioinformatics Institute < EMBL-EBI

https://www.ebi.ac.uk

Women leaders and coronavirus: look beyond stereotypes to find the secret to their success

29 June

https://theconversation.com/women-leaders-and-coronavirus-look-beyond-stereotypes-to-find-the-secret-to-their-success-141414

X-Rays Size up Protein Structure at the 'Heart' of COVID-19 Virus

https://www.labmanager.com/news/x-rays-size-up-protein-structure-at-the-heart-of-covid-19-virus-23130?utm_campaign=NEWSLETTERS_LM_Monitor_2020&utm_medium=email&_hsmi=90448344&_hsenc=p2ANqtz-8F2PdydB8i9cXimlOVbEQ6C1Q1zZFbXMlEXlj7q3t7pBll697GNDDQDTNIghgre4ZksVBMCUsq46bhPq03CLGU5CM5EA&utm_content=90447814&utm_source=hs_email

https://www.nature.com/articles/s41467-020-16954-7

Swine flu strain with human pandemic potential increasingly found in pigs in China

29 June

https://www.sciencemag.org/news/2020/06/swine-flu-strain-human-pandemic-potential-increasingly-found-pigs-china?utm_source=Nature%20Briefing&utm_campaign=c5d6755ef4-briefing-dy-20200629_COPY_01&utm_medium=email&utm_term=0_c9dfd39373-c5d6755ef4-45372434

The state of the vaccination race

Anthony King June 30

https://www.chemistryworld.com/news/explainer-how-is-the-vaccine-pipeline-for-covid-19-looking/4012068.article?utm_source=Nature+Briefing&utm_campaign=c5d6755ef4-briefing-dy-20200629_COPY_01&utm_medium=email&utm_term=0_c9dfd39373-c5d6755ef4-45372434

Coronavirus: the antibody drugs few people have been discussing – until now

30 June

https://theconversation.com/coronavirus-the-antibody-drugs-few-people-have-been-discussing-until-now-140978?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20July%201%202020%20-%201665816047&utm_content=Latest%20from%20The%20Conversation%20for%20July%201%202020%20-%201665816047+CID_6d416a760062dda4846c6c75e11d7386&utm_source=campaign_monitor_uk&utm_term=Coronavirus%20the%20antibody%20drugs%20few%20people%20have%20been%20discussing%20%20until%20now

Coronavirus and cancer hijack the same parts in human cells to spread – and our team identified existing cancer drugs that could fight COVID-19

28 June

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+353 (0)1 607 3200 **info@sfi.ie**

Science Foundation Ireland For what's next

Science Foundation Ireland For what's next

E- Alert: August 2020

SFI 2019 Annual Report

The SFI 2019 Annual Report has launched today. The report demonstrates significant impact and value for money from investment in science, technology, engineering and maths (STEM) for the Irish public and SFI's vital role in building world-leading research, from Ireland's contribution to immunology in the global response to Covid-19, to expertise in delivering innovative solutions that address societal and economic challenges. Read more at the link below:

SFI 2019 Annual Report

Tel: +353 (0)1 6073200

Email: info@sfi.ie

www.sfi.ie

Chemistry and related Science around the World

Scientists Have Developed a Membrane That Separates CO2 From Other Gases

9 May

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Could ammonia be the secret to shipping carbon-free?

Ammonia has a vital role as a zero-carbon fuel and energy store

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A molten carbonate shell modified perovskite redox catalyst for anaerobic oxidative dehydrogenation of ethane

Catalyst Opens Door To More Efficient, Environmentally Friendly Ethylene Production

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Melanin enriched with selenium could prove to be a versatile radioprotective material
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Your Blood Type May Affect COVID-19 Risk, But It's No Kind of Protection, Experts Say

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Google Says It Just Ran The First-Ever Quantum Simulation of a Chemical Reaction

28 August
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Spider Silk Inspires New Class of Functional Synthetic Polymers for Bio-Electronics, Sensors, and Batteries

28 August
https://scitechdaily.com/spider-silk-inspires-new-class-of-functional-synthetic-polymers-for-bio-electronics-sensors-and-batteries

Metal-Free Catalyst Discovery May Revolutionize Bio and Fossil Fuel Production

28 August
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Breakthrough in Artificial Photosynthesis Lets Scientists Store The Sun's Energy as Fuel

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Lab Gains New Insight into Key Membrane Proteins

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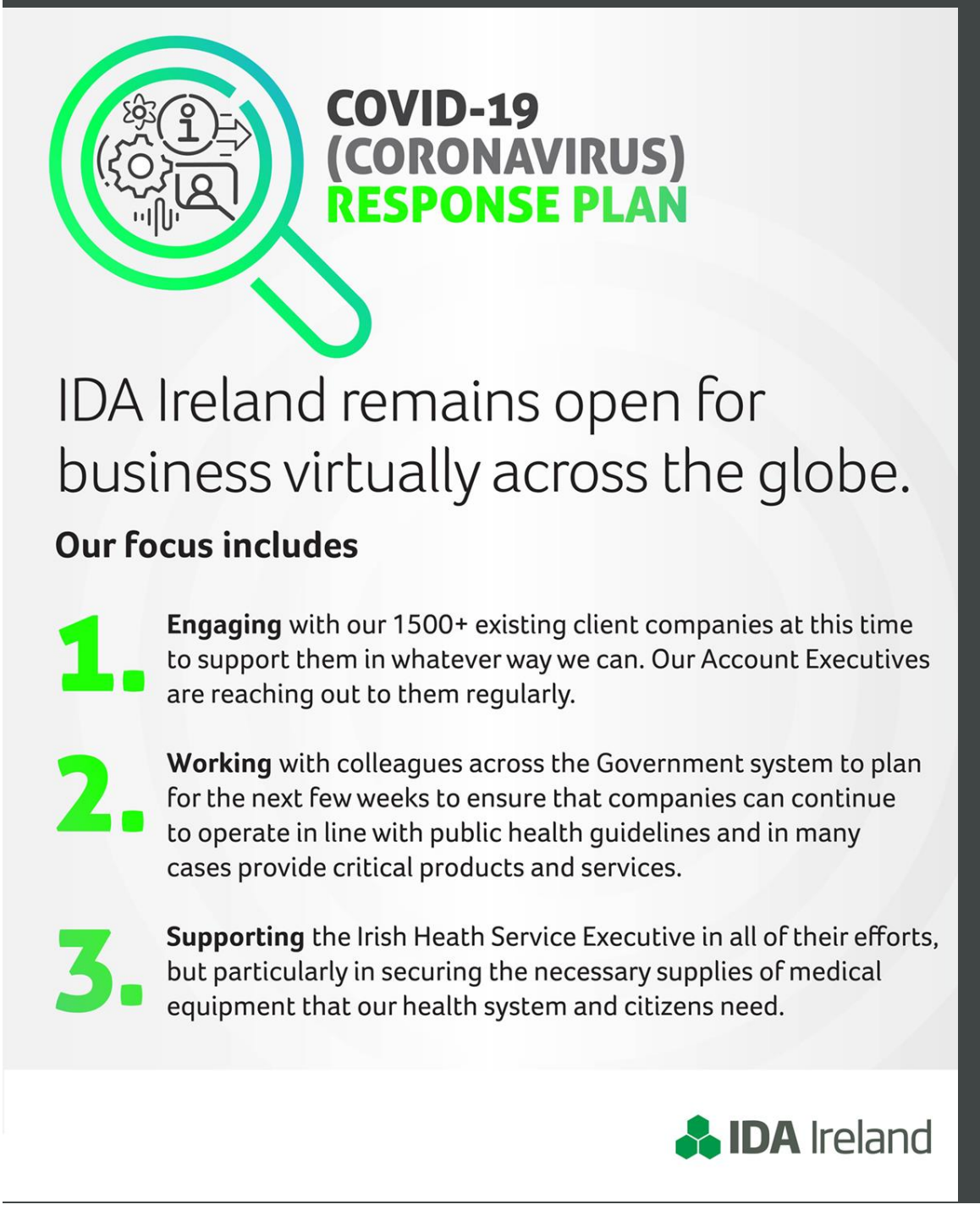
Company Information:

GPE Scientific Ltd was established in 1962 and is a leading distributor and manufacturer of laboratory equipment, glass blowing products and specialised glass components for the industrial, laboratory and research markets. There are many reasons to choose GPE Scientific above our competitors; we pride ourselves in stocking thousands of products from leading suppliers providing you with the best selection of laboratory equipment on the market. This includes being the exclusive distributors for Chemglass Life Sciences and Chemical Reactors, Norell NMR Tubes and Accessories and the portable Nanalysis NMReady Benchtop Spectrometer.

IDA IRELAND'S COVID-19 RESPONSE PLAN



IDA Ireland is firmly committed to supporting our client companies during this turbulent period. For queries on how we can assist, please do not hesitate to contact your IDA Ireland account manager. Alternatively, contact us directly via email **idaireland@ida.ie** or via phone +353 1 603 4000 and we will put you in touch with the right person who can help.

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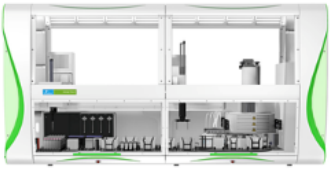

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UPMC to Create 60 Jobs and Open Global Technology Operations Centre in Kilkenny to Support International Expansion

11 June 2020

PITTSBURGH, Pa., June 11, 2020 – UPMC, a leading integrated healthcare provider and insurer, announced today that it is establishing the UPMC Global Technology Operations Centre in Kilkenny to support the health system's continuing international expansion. The new centre—to be located in MacDonagh Junction, a historically significant mixed-use development—is expected to employ up to 60 skilled technology workers and other support staff over the next three years, adding to the more than 475 staff already in Ireland.

The project is supported by the Irish government through IDA Ireland.

Kilkenny was chosen because of its proximity to other key UPMC facilities, including hospitals, cancer centres and an outpatient site in Waterford, Cork, Carlow and Kildare, as well as for the country's strong tech talent pool, business-friendly environment, significant presence of major tech companies and its active innovation community supporting tech start-ups and incubators.

"Our multinational business requires a technology platform that allows us to consistently provide the highest quality care at the lowest cost, regardless of location," said Ed McCallister, chief information officer of UPMC. "As we considered locations worldwide that would best meet our needs, Ireland—and its centrally located, multi-cultural workforce—quickly rose to the top."

UPMC International Senior Vice President David Beirne, who also is managing director in Ireland, noted that support from IDA Ireland, which encourages foreign investment and job creation, was one of many advantages that UPMC weighed. "This new centre will give us the unique ability to accommodate regulatory, cultural and language requirements across our international sites, including in Ireland, Italy, Kazakhstan and China."

Minister for Business, Enterprise and Innovation Heather Humphreys TD said, *"I am delighted to see UPMC expand their presence in Ireland with the opening of a new Global Technology Operations Centre in Kilkenny. This will result in the creation of 60 highly skilled jobs, which will support the company's international expansion. This is very welcome news for the county and will be a significant boost to the wider region. This demonstrates, once again, that the South East is an attractive location with much to offer investors."*

IDA Ireland CEO Martin Shanahan *said, "This investment by UPMC demonstrates a huge vote of confidence in Ireland, our strong value proposition and our agile and adaptable business environment that we've sustained despite the unprecedented changes imposed as a result of the Covid-19 pandemic. Kilkenny is an ideal choice of location, given the availability of highly skilled creative talent there. The new jobs being created are a welcome boost to the economy of the South East. I wish UPMC every success with this latest expansion."*

To prepare for the opening of its new centre in Kilkenny, UPMC already is hiring network, systems and

security engineers, security and privacy analysts and other information technology managers. Candidates can watch for available positions here. The Global Technology Operations Centre staff will initially be housed in temporary space at MacDonagh Junction, adjacent to UPMC Nowlan Park, while the new UPMC offices are completed. UPMC will be the first healthcare tenant in this redevelopment project, which during its long history has been the site of a hospital and a workhouse for the poor.

With multiple healthcare facilities in Italy and Ireland, an advisory agreement to support an academic medical centre in Kazakhstan and a planned partnership to manage a network of new hospitals in China, UPMC has one of the largest and most experienced international divisions of any academic medical centre. With a focus on offering patients the best care close to home—wherever that may be—UPMC collaborates with healthcare providers, governments and other partners in its four focus countries to create sustainable, high-quality medical services.

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About Sigma-Aldrich: Sigma-Aldrich is a leading Life Science and High Technology company whose biochemical, organic chemical products, kits and services are used in scientific research, including genomic and proteomic research, biotechnology, pharmaceutical development, the diagnosis of disease and as key components in pharmaceutical, diagnostics and high technology manufacturing.

Sigma-Aldrich customers include more than 1.3 million scientists and technologists in life science companies, university and government institutions, hospitals, and industry. The Company operates in 35 countries and has nearly 9,000 employees whose objective is to provide excellent service worldwide.

Sigma-Aldrich is committed to accelerating customer success through innovation and leadership in Life Science and High Technology.

For more information about Sigma-Aldrich, please visit its website at **www.sigma-aldrich.com**

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Minister Humphreys announces new scheme aimed at supporting the production of COVID-19 related products

- The COVID Products Scheme will accelerate the production of vital medicines, potential vaccines and essential medical equipment.
- The Scheme allows for grant aid of up to 50% of eligible capital investment.
- The life sciences sector directly employs over 60,000 people in Ireland.

Minister for Business, Enterprise and Innovation, Heather Humphreys TD, today announced details of a new grant scheme aimed at supporting the production of vital medicines and medical equipment in Ireland. The Department of Business, Enterprise and Innovation received approval for the Scheme from the European Commission today.

The COVID Products Scheme has been developed under a new European Commission Temporary Framework that allows additional aid to be granted by EU Member States to companies that are developing or producing medicinal products used in the fight against COVID-19. The scheme will be delivered through IDA Ireland and Enterprise Ireland under the terms of the Temporary Framework, which is aimed at supporting the research, development, and production of COVID-19 related products in Ireland.

The scheme allows for up to €200m in targeted State support to facilitate the research and development of COVID products, to enable the construction or upgrading of testing and upscaling infrastructures that contribute to the development COVID-19 relevant products, as well as to support the production of products needed to respond to the outbreak.

Minister Humphreys said*: "The challenge of COVID-19 is first and foremost a health emergency and we will continue to prioritise the medical response to the pandemic. The intention of this new scheme is to accelerate the production of vital medicines and potential vaccines, along with essential equipment, used in the fight against COVID-19".*

Minister Humphreys continued: *"The life sciences sector directly employs over 60,000 people right around the country and virtually all of the world's top companies have chosen Ireland as a manufacturing base. This new scheme aims to capitalise on that hard-earned reputation and the positive effects of this additional investment will be felt not only in additional direct employment, but also throughout the economy, as many companies based in Ireland are an integral part of the materials and services supply chain".*

The introduction of the scheme will allow IDA Ireland and Enterprise Ireland to generate significant additional capital investment from firms in the life sciences sector, thereby helping the national economic recovery from the COVID-19 crisis. Companies in the pharmaceutical sector, including a number of existing IDA clients, are currently engaged in developing both COVID-19 treatments and vaccines. Companies are also seeking to increase manufacturing capacity to meet intense global demand for treatments found to be effective.

CEO of IDA Ireland, Martin Shanahan, said:

"This new State Aid Framework sanctioned for Ireland by the EU and targeted at Medicinal products for Covid-19 is a significant step forward. The Life Sciences sector will be central to creating an environment where human health is protected and economic life can begin to return to normal and this will allow us to support the sector.
"The size and breadth of Ireland's Life Sciences industry makes us well placed to leverage the Framework to support the industry to quickly respond to Covid-19 demand and form a key pillar in Ireland's comprehensive economic recovery plan."

CEO of Enterprise Ireland, Julie Sinnamon, said: *"Enterprise Ireland very much welcomes the announcement of this new scheme. We have a fantastic cluster of Irish companies in the medtech, engineering, consumer and digital technology sectors in Ireland who have demonstrated the strength of their innovative capabilities in the face of the Covid-19 crisis. Driven by the increased demand for lifesaving solutions their response to Covid-19 has positioned the country 6th in the world for Covid19 innovations and will see growth opportunities for this cohort across the globe. The Commission's approval of this new scheme will allow us to further support this sector in driving increased innovation and production of products, supporting research and development of Covid-19 products, and enabling the construction or upgrading of testing and manufacturing facilities in Ireland."*

The scheme allows for grant aid of up to 50% of eligible capital investment. This will ensure that the intervention will have a substantial impact on COVID-19 related production and will drive a significant return for the State.

Details on the opening of the scheme will be made available in the coming days. Applications for aid under the scheme must be approved no later than 31 December, 2020.

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Greenfield Global Presents Its New European Manufacturing Headquarters in Ireland

Portlaoise 28th July 2020 Greenfield Global Inc., a global leader in the production of ethanol, high-purity speciality alcohols, and solvents, will soon commence the commissioning phase of their new EU Manufacturing Headquarters in Portlaoise, Ireland.
The new 3,800 sq. metre facility, the company's first outside North America, will produce Pharmco branded products serving Life Science customers globally and is located on IDA Ireland's Business and Technology Park. This new facility will result in 75 new jobs over the next five years, while 170 construction jobs were created during the build and fit-out phase of the project. The Portlaoise facility is one of the first NZEB (near zero energy buildings) to be completed under the new European standards. Project financing is provided by Allied Irish Banks and is supported by the Irish Government through IDA Ireland.
Greenfield Global, which has its headquarters in Toronto, Canada, has operations in 12 locations across North America, manufacturing and distributing a wide range of products to customers in over 50 countries.

Greenfield Global President and CEO Howard Field said "Greenfield Global has been supplying Pharmco branded mission-critical alcohols, solvents and bio-processing materials to Life Science companies across the globe for more than two decades. Until now, those products have been produced, packaged and delivered from our distilleries and manufacturing facilities in North America. Today, I am very excited to announce that our Portlaoise Ireland plant construction is essentially completed and we are excited to enter the commissioning phase of the facility in preparation to commence the validation

program."

Managing Director of Greenfield Global Ireland Ken Finegan said "This achievement for Greenfield erecting a complex facility with an aggressive timeline in normal settings are something to celebrate and be proud of. The fact that our onsite team, DPS Engineering and all of our contractors had to very quickly change protocol to account for COVID-19, launch and manage a new set of health and safety standards, while still moving this project forward is a feat. All while maintaining Greenfield's standards of excellence. We are encouraged to move this project to the next phase and will soon be able to service our existing and new customers with Pharmco branded products, including pharmaceutical companies, from Europe and beyond. Greenfield's manufacturing headquarters in Portlaoise will become a critical part of the Life Science ecosystem in Europe and beyond, especially considering the improvements we can make to globally damaged supply chains caused by COVID-19."

Minister of State Department of Finance with responsibility for Financial Services, Credit Unions and Insurance Sean Fleming TD said: "This investment is a very positive development for the Midlands region and is further evidence of the benefits of locating in the regions outside Dublin where there is access to talent, lower operating costs, and higher staff retention rates. Greenfield Global's decision to locate their new EU manufacturing headquarters here is not only a sign of the capacity and capabilities that the Midlands provides, but also a sign of Ireland's expertise and our strong and growing life sciences ecosystem. I would like to welcome Greenfield Global to the area and I look forward to working with them over the coming years."

CEO of IDA Ireland Martin Shanahan said "I wish to congratulate Greenfield Global on reaching this milestone – the establishment of its EU Manufacturing Headquarters in Portlaoise - which is also Greenfield Global's first facility outside of North America. Greenfield Global's presence in the Midlands is of considerable benefit to the economy of the region and enhances Ireland's vibrant EIT sector. I wish the team here and in North America continued success with the ongoing support of IDA Ireland."

Greenfield is commencing with its validation program and customer audits starting August 2020 which can be scheduled by contacting Ken Finegan, Managing Director at Ken.Finegan@greenfield.com.

END

About Greenfield Global Inc.
Greenfield Global is a global leader in the production of high-value, mission-critical raw materials, ingredients and additives that are vital to businesses, improve people's lives, and preserve the health of the planet. Greenfield is the largest ethanol producer in Canada and owns and operates four ethanol distilleries, four specialty chemical manufacturing and packaging plants, and three next-generation biofuel and renewable energy R&D centres across North America and Europe. Since its beginning in 1989, Greenfield continually develops more efficient and sustainable technologies and products while shrinking its own carbon footprint. From start-ups to the largest brands in the world, customers trust Greenfield's extensive portfolio of premium products, regulatory expertise, and industry-leading service. Under its Pharmco and Commercial Alcohols brands, Greenfield delivers hundreds of products to thousands of Life Science, Food, Flavor, Fragrance, Personal Care and Beverage customers in more than 50 countries worldwide. To learn more, visit www.greenfield.com.

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Nine Irish researchers and innovators awarded over €2.9m in funding in response to Covid-19

12th August, 2020

Garrett Murray, National Director for Horizon 2020 at Enterprise Ireland.

Enterprise Ireland welcomes European Commission's announcement of funding for researchers and innovators as part of Horizon 2020 emergency funding action for Covid-19 outbreak

The European Commission has announced that 23 projects were short-listed for funding with a total of €128.2 million involving 347 research teams from 40 countries in Europe under the emergency funding action issued in May. Nine Irish researchers and companies were awarded over €2.9m under the funding action.

Projects were funded in the areas of rapid repurposing of manufacturing for vital medical supplies and equipment (€22.1m), behavioural, social and economic impacts of the outbreak responses (€28 million), pan-European Covid-19 cohorts (€19.9m) and collaboration of existing EU and international cohorts of relevance to Covid-19 (€3m) and medical technologies, digital tools and artificial intelligence analytics to improve surveillance and care at High Technology Readiness Levels (€55.2m).

Irish applicants did particularly well in the area of medical technologies, digital tools and artificial Intelligence analytics.

Enterprise Ireland client Palliare Limited is coordinating a project focusing on controlling viral aerosols in COVID-19 and beyond. Trinity College Dublin, University College Dublin, University College Cork, TUDublin, and Cork spin-out BioPixS Limited are also all partners in successful consortia.

BioPixS is a key member of a consortia led by Spanish researchers working on a portable platform for the assessment of microvascular health in Covid-19 patients at the intensive care.

Speaking following the announcement, Garrett Murray, National Director for Horizon 2020 at Enterprise Ireland said: "This announcement is a great success for Ireland and is testament to the capability and talent within the Irish research and innovation system particularly in areas relevant to the challenges posed by Covid-19. As citizens we rely on our innovators and researchers to help us overcome some our greatest societal challenges and as drivers of economic growth.

To date, Irish companies and researchers have been awarded and contracted in excess of €987m in funding under Horizon 2020 - with more in the pipeline. There continues to be many opportunities for Irish enterprises and researchers under the Horizon 2020 Programme, including calls for proposals under the European Green Deal, worth circa €1bn that will be issued in the autumn."

Following the announcement, Sanathana Konugolu Venkata Sekar, CEO, BioPixS Ltd stated: "In VASCOVID, our novel phantoms will fast track instrument development by enabling standardized approach to characterisation/verification, and also provide quality control during day to day operations of VASCOVID device. A spinout of IPIC/Tyndall/UCC, this is a proud moment for us to positively impact on the challenges posed by this pandemic by partnering with leading institutes across Europe."

Enterprise Ireland encourages all Irish researchers and innovators to look at the remaining opportunities under the Programme and to contact their National Contact Points in Enterprise Ireland and across the Horizon 2020 national support network for information, guidance and expert support in evaluating opportunities and making applications.

ENDS

Notes to the Editor:

https://ec.europa.eu/info/sites/info/files/research_and_innovation/events/documents/facsheet_call2_projects-10-august-2020.pdf

https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1460

About Horizon 2020

Horizon 2020 is the EU's Framework Programme for Research and Innovation. It is one of seven flagship initiatives in Europe 2020, the European Union's ten-year jobs and growth strategy. It has a budget of €75 billion and runs from 2014 to 2020. Horizon 2020 funding (i.e. grants) is awarded on a competitive basis to researchers and companies across three main pillars: Excellent Science, Leadership in Enabling and Industrial Technologies and Societal Challenges.

Enterprise Ireland leads the national support network for Horizon 2020, working to increase participation by Irish companies and academic institutions in the EU's main instrument for funding research in Europe. Led by Enterprise Ireland, the national support network for Horizon 2020 has 9 member organisations; the Department of Agriculture, Food & the Marine, Enterprise Ireland, the Environmental Protection Agency, the Health Research Board, the Irish Research Council, the Irish Universities Association, the Marine Institute, the Sustainable Energy Authority of Ireland and Science Foundation Ireland. For more information visit www.horizon2020.ie

For further information:

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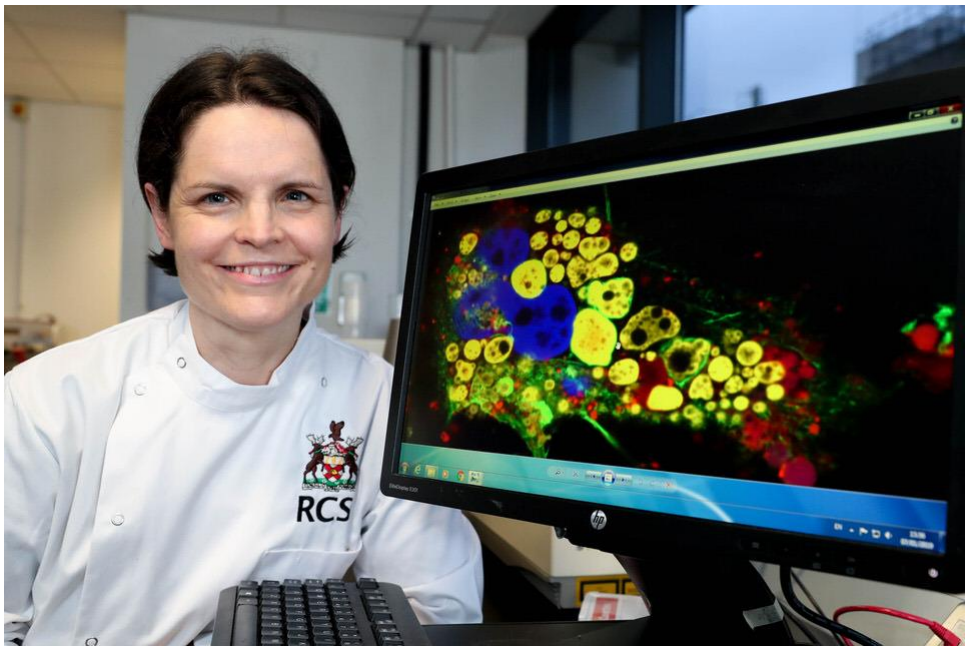
Enterprise Ireland Awards €1.3m To Three Projects To Support The Commercialisation of Third-Level Research

10th August, 2020



Professor Sally Ann Cryan, RCSI University of Medicine and Health Sciences.

Enterprise Ireland today announced it has awarded €1.3m to three projects through its Commercialisation Fund. Each project will receive over €400k.

The Enterprise Ireland Commercialisation Fund provides a mechanism through which researchers can transform their ideas into commercially relevant businesses. Enterprise Ireland has been working with third-level researchers for a decade on their journey as they seek to bring commercially relevant technology out of the lab and into the marketplace.

Commenting on the announcement, Eithne McShane, Senior Commercialisation Specialist with Enterprise Ireland, said: "The Commercialisation Fund is an avenue for Ireland's brightest scientists to commercialise their research and bring it to the market. At Enterprise Ireland, we recognise that funding innovation is key to ensuring that the Irish economy remains competitive on the world stage through the creation of technology-based start-up companies and the transfer of innovations developed in Higher Education Institutes and Research Performing Organisations to industry in Ireland."

The three projects, all of which are led by women, which have been awarded funding are:

- StarMAT Technologies - star-shaped polypeptide materials for biomedical applications, led by Principal Investigator, Professor Sally Ann Cryan, RCSI University of Medicine and Health Sciences;
- Adjuvenate - A platform solution for improved subunit vaccines, led by Principal Investigator, Associate Professor, Aisling Dunne, Trinity College Dublin;

- Development of gene therapies for common retinal disorders, led by Principal Investigator, Professor Jane Farrar, Trinity College Dublin.

Eithne McShane, of Enterprise Ireland, continued: "We are delighted that the projects which have been awarded funding are all women-led. The medical research being undertaken by each of their teams will be looking at issues such as infectious diseases, adult blindness and drug delivery. We have seen in recent months the importance of medical research and look forward to assisting each on their journey to the marketplace with the ultimate goal of improving lives."

Prior to the awarding of this funding, all three projects also received €15,000 from Enterprise Ireland to conduct commercial feasibility studies.

Previous awardees of the Commercialisation Fund include AudioSourceRE, Cala Medical and Senoptica Technologies. The fund comprises business resources as well as financial support.

Notes to the Editor:

Further Information on Research Projects:

Development of gene therapies for common retinal disorders, led by Principal Investigator, Professor Jane Farrar, Trinity College Dublin.

Age related Macular Degeneration (AMD) is the most common cause of blindness in the developed world. There are two distinct forms of AMD - Dry AMD and Wet AMD.

While there are several effective treatments for Wet AMD there are no licensed medical therapies for Dry AMD. The Dry form of AMD represents more than 90% of cases of AMD and affects approximately 150 million people globally.

The Team have developed novel gene therapy, based on a yeast derived gene encoding mitochondrial complex I (Ndi1) in an adeno associated virus (AAV) vector.

The Team conducted a Commercial Case Feasibility study – also funded by Enterprise Ireland in 2019 which highlighted that the global market for Dry AMD is predicted to reach $8.9 billion by 2022.

Among the outcomes targeted through this approval from the Commercialisation Fund are:

- Develop in vitro human Retinal Pigment Epithelial (RPE) cell-models and finalise in vivo preclinical data packs for Ndi1 therapies with associated study reports (Stage 1).
- Initiate key commercialisation activities, finalise target product profile (TPP), the clinical development plan and first-in-human study design.

The research of the ocular genetics team in Trinity is funded by Science Foundation Ireland, the Health Research Board, Fighting Blindness Ireland, Health Research Charities Ireland, the Irish Research Council and Marie Skłodowska-Curie funding.

Adjuvenate - A platform solution for improved subunit vaccines, led by Principal Investigator, Associate Professor Aisling Dunne, Trinity College Dublin.

The rise in infectious disease and the need to develop new vaccines that are capable of eliciting effective and sustained immune responses is a significant global issue – as evidenced by the current COVID pandemic.

Another respiratory disease that exemplifies the need for better, more effective vaccines is whooping cough – which is caused by the bacterium, Bordetella pertussis.

This disease is on the rise due to inability of current vaccines to provide sustained immunity.

Many vaccines employ adjuvants but there is a significant need to develop new, more effective adjuvants that enable vaccine makers to produce vaccines that elicit a sustained, lasting immune response.

The team at TCD have discovered and patented a new pertussis-vaccine component and this novel protein has the potential to be a 3rd generation stand-alone booster vaccine for whooping cough.

The Commercialisation Fund will support the further development of this novel adjuvant, in the first instance to develop a new, improved whooping cough vaccine.

Secondly, the team will continue to develop the adjuvant molecule as a novel adjuvant for combination with other new vaccines in development to help induce a more effective and sustained immune response.

StarMAT Technologies - star-shaped polypeptide materials for biomedical applications, led by Principal Investigator, Professor Sally Ann Cryan, RCSI University of Medicine and Health Sciences.

The multi-disciplinary team led by Prof. Cryan (pharmacist & pharmaceutical scientist) and co-led by Prof. Andreas Heise (polymer chemist) has developed a versatile, “star-shaped” polypeptide-based materials’ platform which may be used to overcome the delivery challenges associated with getting many emerging advanced biotherapeutics, including gene- and protein-based medicines, into clinical use.

The patented StarMAT technology developed at RCSI can be tailored to deliver specific drug payloads, be integrated with medical devices when required to target specific tissues and cells and may be particularly well suited to applications in biotherapeutic delivery in respiratory and regenerative medicine.

The team conducted a commercial feasibility study, also funded by Enterprise Ireland, which engaged with multiple Industry partners. The analysis highlighted the demand for direct-to-cell delivery technologies particularly for so-called Advanced Therapeutics Medicinal Products (ATMPs) including nucleic acid-based therapies (e.g. RNA-based therapies) – which includes some of the COVID vaccine technologies currently in development. A key highlight from the research was the need for better methods of delivering drugs via inhalation direct into lung epithelial cells for targeted treatment of respiratory disease.

Among the milestones that the Commercialisation Fund will support are development of scalable processes for drug payload incorporation & product refinement based on customer feedback and further toxicology studies on the StarMAT nanoformulations.

General information on the Commercialisation Fund and previous projects funded can be found at:

https://www.enterprise-ireland.com/en/researchers/research-commercialisation-supports/commercialisation-fund.shortcut.html

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PlasmaBound seals €1.1 million Investment Round

24 June

Pictured (l-r) at University College Dublin are PlasmaBound co-founders, Alan Barry, CEO and James Nicholas Barry, Technical Director. (Nick Bradshaw, Fotonic)

PlasmaBound, a University College Dublin (UCD) spin-out, which has developed a novel surface treatment technology to enable global manufacturing industries to reduce product weight and meet fuel efficiency and carbon emissions requirements, has today announced the closing of a €1.1 million investment round.

The investment round was led by the Atlantic Bridge University Fund, with Enterprise Ireland, and a number of private investors. Legal counsel was provided by Flynn O'Driscoll.

PlasmaBound's patented technology, called controlled polymer ablation (CPA), uses a repeatable and high-speed one-step process, involving the structural adhesive joining of lightweight materials, namely carbon and glass fibre reinforced composites.

The technology enables global players in the automotive, aerospace/space and wind turbine industries to achieve light weighting goals with simplified and fully automated work streams. Such work streams generate significantly less manufacturing waste, dramatically reduces product weight and also assists industry players to achieve stringent carbon emission and fuel efficiency goals.

PlasmaBound, headquartered at Nova UCD, the Centre for New Ventures and Entrepreneurs, was co-founded in 2017 by Dr James Nicholas Barry, Alan Barry and Xavier Montibert as a spin-out from the

UCD College of Engineering and Architecture, following the completion of Enterprise Ireland Commercialisation Funding.

The company is also an Enterprise Ireland High-Potential Start-Up.

Alan Barry, CEO, PlasmaBound, said, *"Our CPA technology supports the accelerated adoption of lightweight composite materials into multi-material structural assemblies, by enabling reliable adhesive joining. This will allow international enterprises, who are aggressively pursuing light weighting opportunities, to meet current and future carbon emissions and fuel efficiency requirements, with no waste production, reduced reliance on metal fasteners and lower production cost through in-line operation simplification."*

He added, *"We are delighted to have closed this investment round led by Atlantic Bridge University Fund which will enable us to further develop our first-generation product offering and support PlasmaBound as we scale globally."*

He concluded, *"Our technology took over 5-years to develop at UCD, so today's announcement is a significant milestone for the company".*

Brendan Cremen will join the PlasmaBound Board of Directors on behalf of Atlantic Bridge.

Dr Helen McBreen, Investment Director at Atlantic Bridge University Fund said, *"I am very pleased to welcome UCD spin-out company PlasmaBound to the Atlantic Bridge University Fund portfolio. The company's ground-breaking technology, which has the potential to support significant reduction in carbon emissions, is an excellent example of the world-class, commercially-focused research underway at UCD and through this investment Atlantic Bridge University Fund is looking forward to helping to scale this early-stage company internationally."*

Julie Sinnamon, CEO, Enterprise Ireland, said, *"We are delighted to support PlasmaBound and to be part of this investment round. With more and more emphasis on reducing carbon footprint, PlasmaBound is developing innovative solutions to enable manufacturers across industries to meet their current and future targets in cutting carbon emissions and generating fuel efficiency. NovaUCD continues to elevate companies such as PlasmaBound that are driving advanced solutions to streamline and simplify processes in manufacturing. I wish the team luck with the project and congratulate the company on its success to date."*

PlasmaBound was previously awarded €50k through the ESA Business Incubation Programme and secured an additional €40k through the competitive ESA Technology Transfer Demonstrator Fund.

Ends

Editor's Notes

PlasmaBound is helping industries lose weight and reduce their Carbon footprint globally. www.plasmabound.com

Atlantic Bridge has €950 million assets under management and invests in high growth technology companies globally and accelerates the scale up of companies by applying its proprietary Bridge Model into the US and Chinese markets. The firm has investment teams, offices and extensive networks in Dublin, London, Palo Alto, Munich, Paris and Beijing.

Atlantic Bridge's €60 million University Fund is focused on accelerating the commercialisation of ground-breaking research and the scaling of global businesses from University College Dublin, Trinity College Dublin and all third level research institutions. The Fund was initiated in a joint leadership collaboration between UCD and Trinity in 2015, with further support from European Investment Fund, Enterprise Ireland, Bank of Ireland and AIB. www.abven.com.

At **NovaUCD**, the hub for new ventures and entrepreneurs at University College Dublin, we nurture and support new high-tech 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 such as PlasmaBound. 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.novaucd.ie

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Smarter Surfaces named as SFA's Exporter of the Year

28th July 2020

L-R Ronan Clarke, Founder of Smarter Surfaces, Audiola Lumnica of Smarter Surfaces, John Byrne, Smarter Surfaces, Sven Spollen-Behrens, Director of the Small Firms Association, Marta Giovannini, Smarter Surfaces and Enterprise Ireland, Regional Director for Dublin, Eoghan Hanrahan

Dublin based company, Smarter Surfaces has been named as this year's Small Firms Association, 'Exporter of the Year' sponsored by Enterprise Ireland.

Now in their sixteenth year, the annual Small Firms Associations' awards celebrate the achievements, innovation and excellence of businesses across a wide range of industries in Ireland and to recognise their vital contribution to the Irish economy.

Founded in 2011, Smarter Surfaces is now a leading manufacturer of innovative commercial wallcoverings, films, paints and plasters designed to help businesses increase collaboration and productivity by making walls writable, magnetic and projectable. Its exports to 25 global markets account for over 95% of its business, and clients across a variety of industries include Microsoft, Coca Cola, AirBnB, NASA and Deloitte. The company is continuing to expand direct sales, distribution partners and e-commerce websites in 5 different languages.

Commenting this morning, Founder of Smarter Surfaces, Ronan Clarke said, *"I am delighted to accept this award on behalf of the entire Smarter Surfaces team as well as our customers worldwide. To be recognised among so many other successful Irish companies and to receive this award is a boost for us all particularly during these challenging economic times.*

"Our business will continue to focus on designing products that help encourage collaboration, teamwork and productivity in work and learning spaces. As organisations, schools and workplaces look to examining how to make a return to operation during the Covid-19 pandemic, there is a renewed emphasis

on promoting meaningful engagement, better planning and communication. Smarter Surfaces can be a part of the solution going forward.

"I would like to thank the Small Firms Association for putting together a brilliant programme this year despite constraints and I wish to extend my congratulations to each of this year's finalists."

Enterprise Ireland Regional Director in Dublin, Eoghan Hanrahan added, *"Over the past 9 years, Smarter Surfaces has steadily expanded its business and boosted its global presence with its innovative solutions. In being recognised at this year's 'Exporter of the Year', the Smarter Surfaces team are demonstrating that entering overseas markets and exporting can lead a business to new heights of success.*

Enterprise Ireland is committed to ensuring that these companies are supported and encouraged to generate world beating products and services. This award reflects the tireless work and effort that Irish entrepreneurs invest into forging a strong and resilient business. Well done to Smarter Surfaces on a well-deserved recognition."

***Notes to Editor:**

Company background

While working in the construction industry, a customer asked Ronan, the founder of Smarter Surface, to cover an entire meeting room with whiteboards. He quickly realised that this solution wouldn't fit their needs and looked terrible with all the joints and unused surface area. Ronan had a better idea. What if you could write on the entire wall seamlessly? The idea for Smarter Surfaces was born.

In 2009 the research and development process began for their initial product, Smart Whiteboard Paint, before launching the product in 2012. The success of Smart Whiteboard Paint enabled the company to expand their product range and include a selection of wallpapers, self-adhesive films, paints and plaster. Research and development has been a key component in the product creation process. It has remained core throughout the Smarter Surface's rapid growth as the company continues to innovate and introduce new products.

Smarter Surfaces is now the world leader in providing innovative whiteboard, magnetic and projection surface solutions, promoting collaboration, teamwork and productivity, to a global range of customers. Their products include a functional surfaces range of magnetic, whiteboard and projection paints and wallcoverings.

Bio on Ronan Clarke, Founder

Ronan is a proven entrepreneur with a background in construction and property investment at home and overseas. From 1998 to 2008, Ronan founded and managed a successful multi-million euro construction business, which employed fifty staff. In 2011, Ronan founded Smart Wall Paint. Ronan's entrepreneurial talent has been recognised with the awarding of the 2013 David Manley Business Category Award and the 2013 PwC Docklands Innovation Awards. In 2015, Smart Wall Paint rebranded to Smarter Surfaces to reflect the growing range of products.

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Smarter Surfaces Website

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siliconrepublic

Dublin-based pharma research firm APC is partnering with Australian biotech company Vaxine to help develop a Covid-19 vaccine candidate.

10 June

Dr Mark Barrett, CEO of APC. Image: Naoise Culhane Photography

A new partnership may see a promising Covid-19 vaccine candidate be developed here in Ireland. Pharma research company APC announced today (10 June) that it has signed a partnership with Australian biotech company Vaxine.

This partnership aims to accelerate the development and launch of a Covid-19 vaccine using facilities at APC's Dublin headquarters. The APC site is currently developing more than 20 other medicines for a variety of conditions including cancers, respiratory diseases, Alzheimer's and HIV.

APC employs a team of 130 people, the majority of which are chemical engineers, process and biopharmaceutical scientists.

The full article by Colm Gorey is available at the link below:-

Colm Gorey/Siliconrepublic.com

This article first appeared on www.siliconrepublic.com and can be found at:

https://www.siliconrepublic.com/innovation/covid-19-vaccine-ireland-vaxine-apc

siliconrepublic

EU tasks TU Dublin to help create 'European University of Technology'

9 June

TU Dublin is one of eight universities chosen as part of an EU project that could lead to a European-wide model for third-level education.

An alliance including TU Dublin has been chosen as one of the 24 winners of the second call for proposals in an EU initiative to create European universities of the future.

As part of the eight-member European University of Technology Alliance, Ireland's first technological university is looking to create a new single entity that would span the continent, with each of the existing universities acting as regional hubs.

The consortium includes universities from Bulgaria, Cyprus, France, Germany, Latvia, Romania and Spain. TU Dublin would become the Dublin campus of the group, with its 28,000 students being part of a larger university group of 100,000 students…….

Towards a European Education Area

The European Commission announcement today (9 July) sees 24 European Universities join the initial cohort of 17 alliances selected in 2019…….

The full article by Colm Gorey is available at the link below:-

Colm Gorey/Siliconrepublic.com

This article first appeared on www.siliconrepublic.com and can be found at:

https://www.siliconrepublic.com/innovation/tu-dublin-european-university-of-technology

siliconrepublic

Future Human will be first major international tech event to go hybrid this October

Future Human, the successor event to the award-winning Inspirefest, will go ahead as planned on 29 and 30 October this year, but with a twist. It will be the first major international tech event in the world to go hybrid.

While most of its attendees will watch live from homes and offices around the world, the event itself will take place on a state-of-the-art, purpose-built broadcast stage in Dublin. Many speakers will appear on stage, with social distancing in place, while those overseas will be dialled in seamlessly to the stage. Discussions will be moderated by event MCs and chairs, including Future Human founder Ann O'Dea and BBC broadcaster Dearbhail McDonald.

The inaugural Future Human line-up includes Cambridge Analytica whistleblower Brittany Kaiser, former NASA astronaut Joan Higginbotham, Félix Lajeunesse of the Emmy Award-winning Félix & Paul studio, composer and Oscars ceremony conductor Eimear Noone and young entrepreneur Shane Curran, to name just a few. Many more announcements are also expected.

"We knew with the insidious nature of this virus that hosting an event with thousands of attendees this October was unlikely to be a runner, but we didn't simply want to put it off to 2021," said Future Human founder and curator Ann O'Dea.

"We were getting so many enquiries from our community as to whether we'd go ahead. We knew there was an appetite out there to get together this year – albeit virtually for the most part."

To this end, O'Dea explained, the Future Human team has been trialling platforms, examining best practice and visiting studios to see just what the possibilities were. "We were never going to be happy with a glorified webinar. Yes, the majority of our attendees will be attending from the comfort of their own homes and offices, but we plan to stage a full, live event, which will be very far from just an online conference."

> **'We plan to stage a full, live event, which will be very far from just an online conference'**
>
> **– ANN O'DEA**

The fifth and final year of Inspirefest had around 3,000 attendees from 52 countries and O'Dea is optimistic that this international element will only increase through the hybrid model, allowing those who previously could not travel to experience the event in full to join from their own location.

In 2021, though, Future Human will host a full live event at the new, cutting-edge Trinity Business School building in Dublin. The 2021 event will continue to embrace the hybrid model, with online-only tickets being made available for those overseas.

“We have always prided ourselves on running the most forward-looking, progressive and inclusive large tech events in the world, and Future Human 2020 will be that and more,” said O’Dea.

Partners for Future Human 2020 include Johnson & Johnson, Nokia Bell Labs, Slack, IDA Ireland and many more.

Attendees are told to expect plenty of hyper-current sessions, from ‘Chasing a Covid-19 Vaccine’ and ‘Dispelling Remote Work Myths’ to ‘Mixed Reality in Today’s Normal’ and ‘Your Data, Your Property’.

“Many thanks to Trinity Business School and its dean, Prof Andrew Burke,” said O’Dea. “We were so excited to host the event there this year, but happy that he has welcomed us back for 2021, and will stay involved this year.”

Depending on the prevailing situation with Covid-19, more small, in-person gatherings will be staged around the main event, while all the main-stage talks, masterclasses and workshops – and even a virtual exhibition – will be available to ticket holders online in October.

The event schedule has even been designed to facilitate virtual attendees from overseas, as well as domestic attendees.

Further updates from Future Human are expected in the coming weeks. The line-up to date and online tickets can be found at futurehuman.xyz.

Future Human is Silicon Republic’s international sci-tech event focusing on the future of work, climate change, AI, security, robotics and life sciences. On 29 and 30 October 2020, it will take place as the first major hybrid tech event of its kind in the world. General, Executive and Student tickets are available now.

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AWARD WINNING MANUFACTURING

Innovation Through Excellence

WINNERS 2020

WINNERS ANNOUNCED

Congratulations to all our winners of the IMR Manufacturing & Supply Chain Awards.

The awards were held on January 29th, City West Hotel Dublin.

We are delighted with the quality of entries for the awards and we look forward to building on its success in years to come.

https://www.awards.manufacturingevent.com/winners-2019

Highlights: https://www.youtube.com/watch?v=Y8N2IN0D7nQ

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National Manufacturing & Supply Chain Conference & Exhibition 27 – 28 January 2021

Join us at the 2021 National Manufacturing Conference & Exhibition on the 27 – 28 of January to hear from an impressive line-up of manufacturing leaders, academics and government agencies who will engage in a stimulating blend of key note addresses and debates.

Creating an Innovative Manufacturing & Supply chain Ecosystem

Companies invited to attend include:

Johnson & Johnson, Standard Brands, Intel, Dell Products, Pfizer, Smurfit Packaging, Kerry Group, Boston Scientific, Forest Laboratories, Glanbia, Gilead Sciences, Glen Dimplex, Astellas Ireland, Irish Dairy Board, Swords Laboratories, Kellogg Europe, Benex, Aryzta, Dawn Meats, Genzyme Ireland, Irish Food Processors, Abbott Ireland, Atlantic Industries, Pepsi-Cola, Schering Plough, Diageo, Elan, Kepak, Medtronic Vasvular, Glaxosmithkline, Irish Distillers, Eli Lilly, Fyffes, Lakeland Dairies, Green Isle Foods, Allergan, Bausch & Lomb, Baxter Healthcare, Thermo King, KCI Medical Resources, Phardiag, Greencore, Teleflex Medical, Rosderra Meats, Merck Millipore, McDermott Laboratories, GE Healthcare, Cadburys, Connacht Gold, Donone Baby Nutrition, Monaghan Mushrooms, Takeda Ireland, Helsinn Birex, Recordati, Cook Ireland, Teva Pharmaceutical, Henkel Ireland, Fair Oak Foods, Stiefel

Laboratories, C&D Foods, Carbery Milk Products, Leo Pharmaceuticals, Project Management, Shire Pharmaceuticals, Tibotec Pharmaceuticals, Vetpharm International, Renishaw Ireland, Proctor & Gamble, Creganna, FMC International, Donegal Meat Processors, Alltech Ireland, Novartis, Rottapharm, Barclay Chemicals, Cognis Ireland, HJ Heinze, Becton Dickenson, ABB, Bimedia, Mylan, Connaught Electronics, Zimmer Orthopedics, Lake Region Manufacturing, Roche Ireland, Sanofi Aventis Ireland, Pinewood Laboratories, Clonmel Healthcare, Merit Medical and many more….

New approaches and technology have been introduced in recent years that have created significant organisational and process improvements. The aim of the conference is to showcase such innovative approaches and to disseminate the cutting edge research that underpins them.

The conference will be of interest to senior management, established practicing engineers and researchers together with those that are much earlier in their careers.

Delegates have registered from leading food, pharmaceutical, medical, chemical, electronics and engineering manufacturing sectors.

Manufacturing on this island of Ireland has some of the best people, products, brands and innovation. We deserve nothing less than the best business environment to chart a new economic course to growth. But government needs to set the climate and conditions to allow this to happen.

Manufacturers small and large from across the country will gather to challenge political decision makers to deliver a business environment which manufacturing deserves. Delegates attending the conference will:

– gain industry insights to help their business plan ahead
– share good practice and learn from each other’s experience
– connected with senior business leaders to find new business opportunities
– meet with key technology providers in the dedicated exhibition area

Procurement, Lean Manufacturing, Control & Automation, Supply Chain Optimisation, Information Technology Logistics, Energy Management, Facilities Management Sustainability, Project Management, Health & Safety Warehouse Management, Materials Handling & Robotics

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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.

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