

NEWSLETTER



Spring 2024

The All Ireland Cancer Liquid Biopsies Consortium (CLuB)

CLuB is the All-Ireland Cancer Liquid Biopsies Consortium Emerging Hub of Excellence, the commitment to excellence in research and teaching of which brings together academic institutions, cancer researchers at all career stages, patients, policymakers and industry representatives across the Island of Ireland. In 2022, the programme was awarded €4 million in funding under the HEA's North South Research Programme, for which we are very grateful.

Vision & Mission

CLuB is an exciting collaboration building on internationally-recognised leadership in cancer research at Trinity College Dublin, Queen's University Belfast, and the University of Galway.

CLuB's ambition and focus are on identifying and developing minimally-invasive, cost effective, blood tests to complement or, where possible, replace surgical biopsies for cancer diagnosis and optimal treatment selection. CLuB also uses excised tumours as "avatars" to better understand the specific origin of important components of the liquid biopsy and to test the optimal drug treatment regime for a given patient. Our overall desire is a better outcome for cancer patients.

Welcome Message



CLuB Founder & Lead Investigator Professor Lorraine O'Driscoll

Welcome to CLuB's Newsletter! Our first year has been busy: recruiting a great project manager, enthusiastic researchers, a talented nurse and technician.

CLuB's primary focus is performing excellent research on blood samples and tumours, in order to develop easier and cheaper ways of diagnosing cancer and selecting the best treatment option for each patient. This could be a 'game changer' in the clinical management of poor outcome cancers, including ovarian, lung, gastric, pancreatic, and triple-negative breast cancers. Our ambition is to expand to many other cancer types, including brain cancer. Examples of the research performed and associated activities so far are summarised within.



CLuB Lead Investigator Northern Ireland Professor Paul Mullan

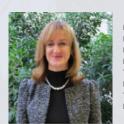
We are indebted to the patients who consent to us studying their donated samples, to patient advocates, and to those working at the biobanks. Also, to the Government of Ireland and Higher Education Authority for supporting this beyond-state-of-the-art research, through the north-south research programme. We also look forward to engaging further with policy makers and industry to achieve our collective goal of better outcomes for cancer patients.

In March 2022, the Taoiseach Micheál Martin and the then Minister for Further and Higher Education Research, Innovation and Science (FHERIS), Simon Harris - now Taoiseach - visited Trinity College Dublin to announce successes of the Government of Ireland Shared Island fund for collaborative research funding Call, showcasing CLuB.



MEET THE TEAM

Lead Investigators



Professor Lorraine O'Driscoll, Founder & Lead Investigator, Professor & Chair of Pharmacology and Biomedicine, Trinity College Dublin, Research Director, Trinity St. James's Cancer Institute



Professor Paul Mullan, Lead Investigator. Professor and Reader, Queen's University Belfast

Co-Investigators



Dr Kathy Gately, Co-Investigator. Clinical Senior Lecturer, Trinity College Dublin



Professor John O'Leary, Co-Investigator. Chair of Pathology, Trinity College Dublin



Dr Sharon O'Toole, Co-Investigator. Senior Research Fellow, Trinity College Dublin



Dr Pilib Ó Broin, Co-Investigator. Asst. Professor (Bioinformatics), University of Galway



Dr Niamh Buckley, Co-Investigator. Reader in Personalised Medicine and Pharmacogenomics, Queen's University Belfast



Dr James P Beirne, Co-Investigator. Consultant Gynaecological Surgical Oncologist & Senior Lecturer, Trinity College Dublin

Project Manager



Ms Dominique Plant, Project Manager, Trinity College Dublin

Research Nurse



Ms Sinead Hurley, Research Nurse, Trinity College Dublin

Post-Doctoral Researchers



Dr. Alex McIntyre, Post-Doctoral Researcher, Queen's University Belfast



Dr. Ezgi Oner, Post-Doctoral Researcher, Trinity College Dublin



Dr. Brian Henderson, Post-Doctoral Researcher, Trinity College Dublin



Dr. Syed Umbreen, Post-Doctoral Researcher, Queen's University Relfast



Dr. Seán Patmore, Post-Doctoral Researcher, Trinity College Dublin



Dr. Aghil Hooshmand Post-Doctoral Researcher, University of Galway

Biobank Technician



Mr. Ryan Barr, Biobank Technician, Queen's University

PhD Candidates



Ms. Faye Lewis, PhD Candidate, Trinity College Dublin



Mr. Michéal Ryan, PhD Candidate, Queen's University Belfast



Ms. Volga Saini, PhD Candidate, Trinity College Dublin



Dr. Szilárd-Krisztián, PhD Candidate, Trinity College Dublin

Inaugural Meeting of CLuB

The All-Ireland Cancer Liquid Biopsies Consortium (CLuB) Inaugural Meeting was held in Trinity College Board Room on February 3rd, 2023. The meeting was chaired by Professor Lorraine O'Driscoll. The meeting was attended by CLuB's Lead and Co-Lead Investigators, PhD Candidates, Post-Doctoral Researchers, Project Manager and Research Nurse. The meeting included a series of sessions on the whole project structure, with the morning session focusing on the project's work packages and deliverables including ethics, sampling, and data-sharing. The afternoon session focused on PPIE (Public and Patient Involvement and Engagement in Research), training activities, dissemination, and outreach activities.



CROSS COMMUNITY ENGAGEMENT

Public and Patient Focussed Events

CLuB has hosted an array of online and in person publicpatient focussed events since its formation. These PPI events have successfully given CLuB the opportunity to explain and present the potential role of the liquid biopsy. In turn, patients and members of the public have given their invaluable perspective and advice. Below are examples of great opportunities that CLuB personnel really got to engage with the general public in an informal and fun way.

World Ovarian Cancer Day

On 8th May 2023, World Ovarian Cancer Day, CLuB Co-Investigator Dr Sharon O'Toole, an expert in ovarian cancer and its associated research, delivered a highly informative interview on RTE's Morning Ireland about ovarian cancer and its symptoms. Dr O'Toole, who is Coordinator of the World Ovarian Cancer Day Campaign at Irish Network for Gynaecological Oncology (INGO), also spoke to Jennifer Zamparelli on RTE 2FM about the signs and symptoms of ovarian cancer.

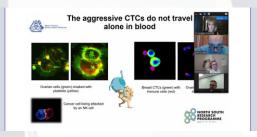


Balmoral Show 2023



CLuB's Co-Investigator Dr Niamh Buckley, along with Dr Syed Umbreen and Ms. Rachel Chambers from Queen's University Belfast demonstrated the potential of liquid biopsies in the diagnosis of cancer at the Balmoral Show 2023 in Northern Ireland.

Online PPI Event



CLuB hosted its first very successful online PPI event on June 1st, 2023. The event involved an array of remarkable presentations across the consortium explaining what liquid biopsies are and their potential in cancer diagnosis and treatment. The Consortium received excellent input, encouragement, and advice from patients.

World Gynaecological Oncology (GO) Day



CLuB Co-Investigator and Coordinator for the Irish Network for Gynaecological Oncology (INGO), Dr. Sharon O'Toole, launched World GO Day on 20th September 2023.

Our Researchers also showcased the All-Ireland Cancer Liquid Biopsies Consortium (CLuB) research programme at the Information Desk in the concourse of St James's Hospital throughout the day.

European Researchers' Night



On September 29th 2023, Researchers from CLuB took part in European Researchers' Night at Trinity College Dublin, where they demonstrated and showcased several activities to explain the potential of liquid biopsies in the diagnosis of - and treatment selection for - cancer.



CLuB Symposium 2023



CLuB held its Inaugural Symposium in the Tercentenary Lecture Theatre, Trinity Biomedical Sciences Institute, Trinity College Dublin on October 25th 2023. The event was opened by Professor Lorraine O'Driscoll, Founder and Lead Investigator.

Keynote speakers were Professor John O'Leary, Co-Investigator, and Ms Jacqueline Daly (PPI Advocate). The title of Professor John O'Leary's keynotes talk was "Novel Insights into the Cancer Metastatic Cascade", and Ms Daly spoke about "Science for Advocates". The morning session also included an array of stimulating presentations delivered by CLuB funded personnel including MDs, PhD Candidates, Post-Doctoral Fellows, Nurse and Technician.

The afternoon session was dedicated to a series of talks by associated industry, with presentations from Accuscience, Angle Europe Ltd, Biomodal, Bio-Rad Laboratories Ltd, Malvern, Nonacus, Nanostring, Illumina, Flow Robotics, and Oxford Nanopore Technologies Ltd. The event was closed by Lead Investigator, Professor Paul Mullan from Queen's University Belfast.

CLuB was delighted that members of the HEA attended the event and interacted with the researchers.



Ms Soledad Fernandez and Mr Michael Duffy from HEA's North-South Research Programme, with Professor Lorraine O'Driscoll

EDUCATIONAL EVENTS

Like research, engagement and education are of utmost importance to CLuB. The cancer liquid biopsies and the relevance of same has been introduced to undergraduate students (including pharmacy and medical degree programmes) and post-graduate students (including students on taught courses such as the MSc in Pharmaceutical Sciences and the QP course; those undertaking CPDs in hospital pharmacy; MD students; and in seminars to PhD students from at least 5 disciplines). Transition year students (>40) and a cohort of students from Singapore have visited CLuB laboratories to learn about its research.

CLuB Hosts TY Students

On March 7th 2023, Dr Kathy Gately Co-Investigator and CLuB scientists Ms. Volga Saini and Dr Ezgi Oner were delighted to host 25 Transition year (TY) students in their laboratory during the week-long TY programme in Molecular Medicine at TTMI, St. James's Hospital.

Dr Gately delivered a lecture on the role of the lung cancer biobank at SJH and how it is used in her translational research programme which focuses on the liquid biopsy. Volga and Ezgi demonstrated how a patient's blood sample is processed before isolation of ctDNA, extracellular vesicles (EVs), circulating CTCs and proteins. On March 5th 2024, CLuB hosted more TY students to CLuB laboratories, to learn about its research.







CLuB invites Dr Karl Keegan from Singer Capital Markets, London, to speak at TCD Research Seminar

On 23rd November 2023, Dr Karl Keegan, Head of Equity Research at Singer Capital Markets, London, delivered a superb lecture on 'The Art and Science of Biotechnology Valuation' as part of the Research Seminar Series at the School of Pharmacy & Pharmaceutical, Trinity College Dublin. The lecture was well attended by academics, students and researchers.



CLuB hosts Monthly Research Meetings

Researchers and Supervisors host monthly meetings to discuss and present their ongoing research in liquid biopsies. These meetings are informal and enlightening with all funded researchers presenting updates on their work. On April 26th 2023, CLuB held its first Monthly Research Meeting in the Board Room at the School of Pharmacy and Pharmaceutical Sciences, Trinity College Dublin (TCD).



CLUB'S ORAL AND POSTER CONFERENCE PRESENTATIONS

Since emerging as a Hub of Excellence, CLuB has engaged extensively with peers both nationally and internationally, ensuring awareness of the relevance of cancer liquid biopsies and of the great support to this research and education by HEA via the North-South Research Programme. The Team at CLuB have presented at numerous events, a selection of those are highlighted below.

2023 Trinity Translational Medicine Institute (TTMI) Conference

CLuB Researchers delivered an array of excellent presentations at the 2023 Trinity Translational Medicine Institute (TTMI) Conference. CLuB PhD candidates Ms Faye Lewis and Ms Volga Saini delivered their first oral presentations on evaluating the liquid biopsy in ovarian cancer and lung cancer. CLuB's Co-Investigator Dr Pilib O'Broin spoke about single cell characteristics of the hematopoietic bone marrow interactome in acute myeloid leukaemia.





The Trinity St James's Cancer Institute (TSJCI) Inaugural Research Day 2023

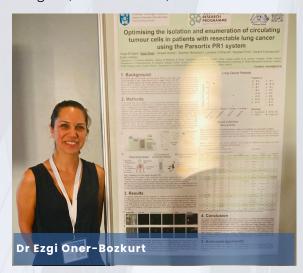


The Trinity St James's Cancer Institute (TSJCI) held its Inaugural Research Day on June 23rd in the Davis Coakley seminar room in MISA. The event was opened by CLuB's Lead Investigator and TSJCI Research Lead, Professor Lorraine O'Driscoll. CLuB's Co-Investigator Professor John O'Leary directed and guided the open forum discussion and concluded the morning session. CLuB's Post-Doctoral Fellow, Dr Brian Henderson delivered an interesting presentation on "The Selection of Cold Tumour Phenotype (Cell) specific Aptamers". Also on display during the event was CLuB's eye-catching poster which captured the background of CLuB and provided information on CLuB's funded Research Team.



6th ACTC Congress

On September 21st 2023, CLuB's Post-Doctoral Fellow Dr Ezgi Oner-Bozkurt presented her poster "Optimising the isolation and enumeration of circulating tumour cells in patients and resectable lung cancer using the Parsortix PR1 system" at the 6th ACTC Congress, Skiathos Island, Greece.



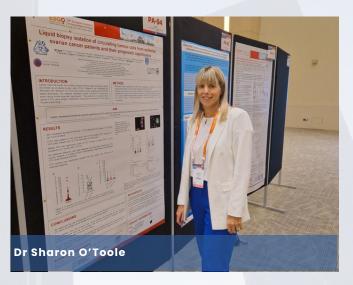
Bioinformatics and Computational Biology Seminar Series

On September 28th 2023, CLuB Post-Doctoral Fellow Dr Seyed Aghil Hooshmand from the University of Galway, presented at both the University of Galway's Bioinformatics and Computational Biology Seminar Series, and the Irish Computational Biology and Genomics Symposium. Dr Hooshmand's goal and mission within the group is to leverage data to drive progress in the field of cancer diagnosis, prognosis, and treatment. Dr Hoohsmand works under the mentorship of CLuB Co-Investigator Dr Pilib Ó Broin.



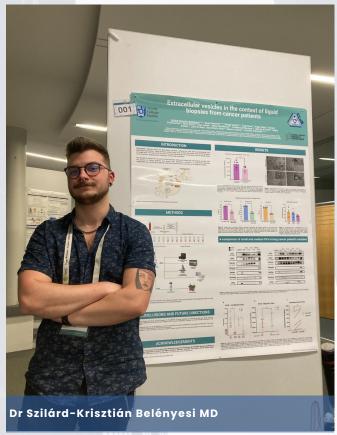
24th European Society of Gynaecological Oncology

On September 29th 2023, CLuB Co-Investigator Dr Sharon O'Toole presented at the "commented poster session" of the 24th European Society of Gynaecological Oncology, Istanbul, Turkey.



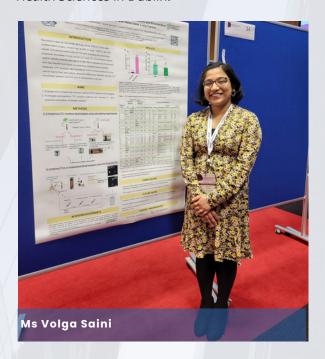
EMBL Liquid Biopsies Meeting

Dr Szilárd-Krisztián Belényesi MD, CLuB PhD Candidate, presented his first poster titled "Extracellular vesicles in the content of liquid biopsies from cancer patients" at the EMBL Liquid Biopsies Meeting in Heidelberg, Denmark, on October 9th 2023.



2023 Pittsburgh-Ireland International Lung Conference

On October 16th 2023, CLuB PhD Candidate Ms Volga Saini presented at the 2023 Pittsburgh-Ireland International Lung Conference (PIILC 2023) at the RCSI University of Medicine and Health Sciences in Dublin.



ISGO Conference 2023

CLuB showcased at the Irish Society for Gynaecological Oncology (ISGO) Conference 2023, when PhD Candidates Ms Faye Lewis (TCD) and Mr Michael Ryan (QUB) both presented posters. Ms Faye Lewis presented "Enumerating circulating tumour cells in serous and non-serous epithelial ovarian cancers", and Mr Michael Ryan presented "In vitro modelling of ovarian cancer cell lines for the development of novel liquid biopsy tests".

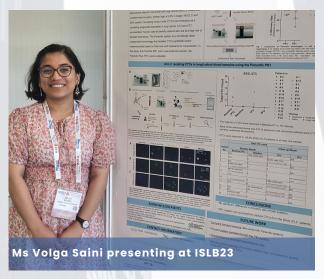


5th Annual Congress of Liquid Biopsy (ISLB23)

On November 20th 2023, Ms Volga Saini presented her poster "Evaluation of the Parsortix PR1 and PX+ systems for the isolation of circulating tumour cells in patients with resectable lung cancer" at the 5th Congress of Liquid Biopsy: "Opportunities and Challenges of Liquid Biopsy" (ISLB23) in Madrid, Spain.

The International Society of Liquid Biopsy (ISLB) is the first international professional organisation committed to the improvement and implementation of liquid biopsies in clinical routine practice and the promotion of a multidisciplinary approach for the diagnosis and treatment of cancer patients based on the use of liquid biopsies. CLuB's esteemed colleague Dr Mark Ward also presented his poster titled "Opportunities and Challenges of Liquid Biopsy" at the conference. Also in attendance at the event was CLuB's Research Nurse Ms Sinéad Hurley, and CLuB Co-Investigator Dr Kathy Gately.





Trinity St James's Cancer Institute (TSJCI) Research Blitz 2023

The Trinity St James's Cancer Institute (TSJCI) held it's Christmas Research Blitz in the Durkan Theatre, Trinity Translational Medicine Institute, on December 8th 2023. The event was opened by CLuB Founder and Lead Investigator Professor Lorraine O'Driscoll who gave an overview of TSJCI Research and announced Round 2 of the CREST Research Stimulus Awards. CLuB PhD Candidate Dr Krisztián Belényesi delivered an excellent presentation on "Extracellular vesicles in the context of liquid biopsies from cancer patients", and CLuB's colleague Dr Mark Ward presented "Utilising the prognostic significance of circulating tumour cells (CTCs) and circulating tumour DNA (ctDNA) in cancer". Overall, there were twenty excellent presentations on the day many by early career researchers - exemplifying fundamental, translational, and clinical cancer research.





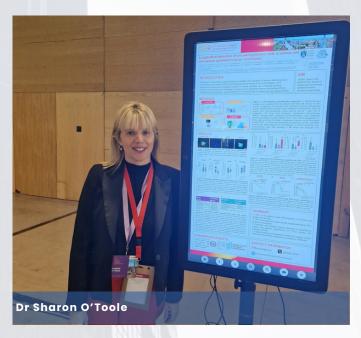
International Pharmaceutical Biotechnology Webinar

Dr Ezgi Oner-Bozkurt was invited to present at the International Pharmaceutical Biotechnology Webinar, hosted by Ege University, Turkey, on 8th February 2024. Dr Oner-Bozkurt provided an insightful introduction to liquid biopsy and shared recent studies conducted by CLuB Researchers within the Thoracic Oncology Research Group at the Trinity Translational Medicine Institute (TTMI).



25th Congress of the European Society of Gynaecological Oncology

On 8th March 2024, CLuB Co-Investigator Dr Sharon O'Toole showcased the liquid biopsy work of CLuB Scientists at the 25th Congress of the European Society of Gynaecological Oncology at the at International Barcelona Convention Center, Barcelona, Spain.



EACR-AACR-IACR 2024 International Conference 2024

The European Association for Cancer Research (EACR) and American Association for Cancer Research (AACR) in collaboration with the Irish Association for Cancer Research (IACR) held their Basic and Translational Research Conference this year in the Dublin Convention Centre. The Joint Conference focused on bringing the latest discoveries from basic science to the clinic and was held from February 27th – 29th 2024. Over the course of the conference, CLuB's inspiring team (research scientists, clinicians, research nurse and senior technician) presented their research to an audience of basic and translational scientists and clinicians.



CLuB Founder and Lead Investigator, Professor Lorraine O'Driscoll delivered an Invited talk entitled "Cancer Liquid Biopsies: Investigating the Sum of their Parts for Patients Benefit". This was a fantastic talk that provided a complete overview of the power of liquid biopsy in so many different cancers, including the pioneering research at Trinity College Dublin's School of Pharmacy and Pharmaceutical Sciences and TSJCI.



IACR 60th Anniversary Satellite Meeting



On February 26th 2024, CLuB's PhD Candidate Ms Faye Lewis won the Patrick G. Johnston Award for Excellence in Cancer Research, at the IACR 60th Anniversary Satellite Meeting in the Royal College of Surgeons Ireland (RCSI), and CLuB's colleague Dr Mark Ward scooped the EACR Senior Researcher Prize for his work entitled "Prognostic significance of circulating tumour cells (CTCs) and circulating tumour DNA (ctDNA) in high grade serous ovarian cancer".

Keynotes, Invited Talks, and International Recognition

Over the last eighteen months, CLuB personnel have been invited to talk at various National and International Conferences and Events. CLuB's Co-Investigator Dr Sharon O'Toole was invited to talk at the Gynocare Conference North Macedonia on "The Liquid Biopsy in Rare Gynaecological Cancers".

On August 4th 2023, CLuB Co-Investigator, Professor John O'Leary, was invited to speak at the Weill Cornell Medical School, The New York Hospital, New York, USA. Professor O'Leary delivered a talk on "Novel Insights

into the Cancer Metastic Cancer".

CLuB Founder and Lead Investigator, Professor Lorraine O'Driscoll was invited to talk at the 10th International Symposium on Translational Research in Oncology at the Herbert Park Hotel, Dublin, and was also an invited member to the *International Organising Committee* for the ISEV Workshop "EV-based biomarkers: Commercialisation and clinical implementation" which was held in Aalborg, Denmark from 12th – 14th October 2023.

As an indication of Professor O'Driscoll's *international recognition* as a leader in the field of Extracellular Vesicles (EVs) she was invited, by the President of the American Association of Extracellular Vesicles (AAEV), to join its Board of Directors. On October 17th she delivered two talks "EV reporting standards" and "EVs in cancer" at the Karolinska Institute, Medical University, Stockholm, Sweden.





CAREER DEVELOPMENT - RESEARCH AWARDS SECURED

The CLuB team were very busy throughout 2023 securing a range of awards. Dr Brian Henderson, CLuB Post-Doctoral Researcher, received a Cancer Research Stimulus Award (CREST) for €12,000 from the Trinity St James's Cancer Institute (TSJCI). This award will provide Dr Henderson with seed funding to foster and develop a new research collaboration within the Trinity St James's Cancer Institute. Dr Ezgi Oner-Bozkurt secured a Building Engagement in Health Research Award (BEHR) grant to develop 3D-Printed Organoids to the value of €10,000. CLuB's Investigator, Dr Sharon O'Toole was granted an award from the Royal City of Dublin Hospital Trust Fund for €41,918 to investigate "Integrating Radiomics into Ovarian Cancer Management".



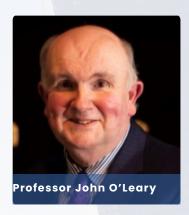


NEW INDUSTRY PARTNERSHIP

CLuB has engaged with a broad range of industry over the past year - some at a fundamental bi-directional educational level, with others reciprocating with in-kind benefits by supporting antibody costs. These include Accuscience, Angle Europe Ltd, Biomodal, Bio-Rad Laboratories Ltd, Malvern, Nonacus, Nanostring, Illumina, Flow Robotics, Oxford nanopore Technologies Ltd.; all of whom presented and interacted at our CLuB Inaugural Symposium.

Next Generation Sequencing Laboratory

In a co-production between Professor John O'Leary, CLuB Co-Investigator and Eurofins, the build of a new full robotics NGS laboratory has commenced at the Trinity Translational Medicine Institute (TTMI). The laboratory will include cancer genomics, CTC biology, cancer neutrigenomics and nutrigenetics, non-invasive testing, spatial transcriptomics and genomics (multi-omic analysis), genomic imprinting, and Al digital pathology.



INTERNATIONAL TRAINING

In August 2023, CLuB's PhD Candidate Dr Szilárd-Krisztián Belényesi attended the Extracellular Vesicles in Health and Disease Summer School, organized at the University of Aarhus, Denmark. While there, Dr Belényesi gained hands-on experience on genetically engineered EVs, and their uses in his research. Post-Doctoral Researcher Dr Seán Patmore attended the Amsterdam Vesicle Center EV Flow Cytometry Summer School, Amsterdam UMC, in September 2023, where he learned advanced methods to optimise EVs detection through flow cytometry for use on clinical samples.



CLUB IN THE MEDIA

On March 2nd 2022, the Taoiseach Micheal Martin and Minister Simon Harris, Minister for Further and Higher Education, Research, Innovation and Science (FHERIS) visited Trinity College Dublin (TCD) including the School of Pharmacy and Pharmaceutical Sciences laboratories in Trinity Biomedical Sciences Institute (TBSI) - to announce the successes of the Government's Shared Island Fund for Collaborative Research. Professor Lorraine O'Driscoll was invited to meet and present to the Taoiseach and Minister Harris, on CLuB €4m Shared Island North-South Cancer Liquid Biopsies Research Program (see also page 1).

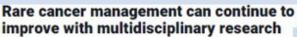


presenting to Taoiseach Michael Martin and Minister Simon Harris

Newspaper Articles

On June 19th 2023, the All-Ireland Cancer Liquid Biopsies Consortium (CLuB) featured in a compelling article written by Mr James Martin in the Irish Independent. The article profiled CLuB as a new emerging hub of excellence, highlighting CLuB as a ground-breaking collaboration, building internationally recognised leadership in cancer research at Trinity College Dublin, Queen's University Belfast and University of Galway.







CLuB's Co-Investigator Dr Niamh Buckley featured in an article in the Irish Independent on June 19th 2023. This article detailed the aims and focus of the Irish Association of Cancer Research (IACR), where Dr Buckley holds the position of Grants and Awards Officer.



CLuB Co-Investigator Dr Sharon O'Toole contributed some very insightful words in an article written by Mr James Martin on "Why prevention is better than treatment for any gynaecological cancer", which was published by the Irish Independent on September 27th 2023.

FUTURE EVENTS

CLuB Symposium 2024 will take place in Queen's University Belfast in October 2024

CLuB will host 2nd on-line PPIE Event on June 6th 2024

Interested in hearing more about our PPIE Events or joining our PPIE **Group?**

Please contact Ms Dominique Plant Email: plantd@tcd.ie



CLUB LAUNCHED ITS NEW WEBSITE, INCLUDING DETAILS OF FUTURE EVENTS. **CLICK HERE FOR MORE INFO!**

The All-Ireland Cancer **Liquid Biopsies** Consortium (CLuB)

Ms. Dominique Plant - Project Manager Email: plantd@tcd.ie

Professor Lorraine O'Driscoll – Founder and Lead Investigator Email: lodrisc@tcd.ie



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