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Centre for
Applied **Bioscience**
Research

Biotechnology • Bioresources • Bioeconomy

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Bioscience For Business



Bringing Together Ireland's Cosmetics Industry (Cosmetics Innovation Forum 2026)

CABR and Enterprise Ireland brought together industry experts, investors, retailers and researchers to explore the opportunities and challenges involved in developing successful cosmetics brands in Ireland.



Where Life Science Meets Art

CABR and Tralee Art Group transformed cell biology research into visual artworks.



CABR Research Colloquium

Showcasing CABR applied bioscience research across many areas, including bioeconomy and cell models.



Developing Value from Wool

Determining limit levels for clean and safe wool to support innovation in wool scouring and processing.

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Bringing Together Ireland's Cosmetics Industry (Cosmetics Innovation Forum 2026)

CABR and Enterprise Ireland brought together industry experts, investors, retailers and researchers to explore the opportunities and challenges involved in developing successful cosmetics brands in Ireland.



Ms Niamh Ryan (Ella & Jo) at the Cosmetics Innovation Forum 2026



Cosmetics Innovation Forum 2026, Athlone, May 2026

The Centre for Applied Bioscience Research (CABR), in partnership with Enterprise Ireland (EI), hosted the Cosmetics Innovation Forum 2026 on 23 April 2026 at the Hodson Bay Hotel, Athlone. The event brought together cosmetic businesses, industry experts, investors, retailers, researchers and state support agencies to explore the opportunities and challenges involved in developing and growing successful cosmetic brands in Ireland.

The forum opened with welcome addresses from Dr Liam Brown (Vice President Research, Development and Innovation, Technological University of the Shannon) and Ms Rachael James (Senior Client Adviser, Enterprise Ireland).

Throughout the day, attendees heard practical insights and real-world experiences covering key areas of cosmetic business development, including ingredient selection, formulation and manufacturing, product distribution, research and development, intellectual property protection, regulatory compliance, scientific communication, brand development and retail readiness.

Sessions included:

1. Ingredient Selection and Natural Extract Development - Panel Discussion
2. Formulation and Manufacturing of Cosmetic Products
3. Cosmetic Distribution
4. Investing in Cosmetics: A Venture Capital Perspective
5. Intellectual Property Protection for Cosmetics Businesses
6. Research and Development Pathways - Panel Discussion
7. Building a Values-Based Brand: The Ella & Jo Story
8. B Corp Certification Journey
9. Cosmetics Regulatory Outlook in 2026
10. Cosmetic Claims and Scientific Communication
11. Buyer Insight Panel: Being Retail Ready

The event highlighted the importance of collaboration between industry, research organisations, investors and support agencies in strengthening Ireland's cosmetics sector and supporting innovation-driven business growth. We would like to thank all speakers, panellists and attendees for contributing to a successful event.

Read more about the event on: www.cabr.ie



[From left] Dr Hande Ermis (CABR), Ms Feebee Foran (Forager), Ms Tracey Ryan (Doctrine Skincare), Ms Sinead O'Keeffe (BioClover), Mr Chris Mitchell (Green Angel)



[From left] Dr Tim Yeomans (CABR) and Mr Kieran Walsh (National Beauty Distribution)

Where Life Science Meets Art (Science+Art Project)

A collaborative project between CABR and Tralee Art Group (TAG) transforming cell biology research into original works of visual art.



Ms Caitriona Foley (Tralee Art Group)



Science+Art Project Exhibition opening,
MTU Kerry, May 2026



[From left] Prof Hugh McGlynn (MTU),
Ms Saray Morey (MTU)

CABR hosted the opening of the Science+Art Project Exhibition on 6 May 2026 at the An Cuan STEM Building, Munster Technological University (MTU) Kerry. The project brought together researchers and artists through a unique collaboration between CABR and Tralee Art Group, supported by the MTU Arts Office CREATE Le Chéile Arts Project Awards. The exhibition featured 21 original artworks created by 18 artists, inspired by scientific imagery generated through cell biology research at CABR.

The opening event included welcome addresses from Ms Sarah Morey (Arts Officer, MTU Arts Office), Mr Damian Gornik (Communications Officer, CABR and Science+Art Project Manager), Ms Caitriona Foley (Chairperson, Tralee Art Group), Dr Tim Yeomans (Centre Manager, CABR), and Dr Angela Wright (Head of Teaching and Learning, AnSEO, MTU).

About the Project

As part of the collaboration, CABR researchers provided artists with microscopic and laboratory-generated images, alongside explanations of the research behind them. The images included cells, cellular structures, and biological processes studied through CABR's research activities. In addition, artists from the Tralee Art Group were invited to visit CABR laboratories, where they met researchers and gained first-hand insights into the scientific work being undertaken at the centre.

Using the scientific images and laboratory visit as inspiration, the artists created original paintings and visual artworks that interpreted scientific research through creative expression, creating a unique connection between art and science.

Ms Caitriona Foley, Chairperson of Tralee Art Group, said:

"The Science+Art Project has pushed many of us to think outside of our comfort zone and get insights into the incredible research that CABR is doing."

The project was led by Mr Damian Gornik (CABR), who coordinated the collaboration between CABR, Tralee Art Group and the MTU Arts Office.

We would like to thank Tralee Art Group, all participating artists, Ms Caitriona Foley, the MTU Arts Office, particularly Ms Sarah Morey, the CABR researchers who contributed images to the project, including Dr Anuma Singh, Dr Ashley Sullivan, Dr Wisdom Shadrach, Dr Tielidy de Lima and Mariana Juca da Silveira e Silva, MTU Kerry Library, our event speakers, and everyone who attended the exhibition opening.

The exhibition was subsequently displayed at the MTU North Campus Library, where members of the public had the opportunity to explore the artworks and discover how scientific research can inspire creative practice.

The Science+Art Project is supported by MTU Arts Office CREATE Le Chéile Arts Project Awards.



[From left] Ms Sarah Morey (MTU), Dr Tim Yeomans (CABR),
Dr Angela Wright (MTU), Ms Caitriona Foley (Tralee Art Group),
Mr Damian Gornik (CABR)



Ms Olena Shulhina (Tralee Art Group)

CABR Research Colloquium (April 2026)

Showcasing CABR applied bioscience research across many areas, including circular bioeconomy, sustainable textiles, and advanced cell models.



CABR Research Colloquium, TUS, Limerick,
April 2026



Dr Habiba Khalid (CircAB at CABR)

From Irish wool biorefinery innovations to biomass-to-protein conversion, CABR's April 2026 Research Colloquium at Technological University of the Shannon: Midlands Midwest (TUS:MM), Moylish Campus was a great showcase of the applied bioscience research happening across CABR. The event featured ten presentations covering circular bioeconomy, sustainable textiles, agri-food systems, artificial intelligence and applied bioscience.

Presentations included sustainable wool biorefinery innovations, biomass-to-protein conversion as part of the RuralBioReFarmeries project, application of keratin and ceramides derived from Irish sheep wool for skincare and medical devices, AI-guided microbial conversion of C1 gases to bioethanol, and mechanochemical green recycling of PLA materials and smart textile design.

Additional topics covered improving cosmetic efficacy testing with 3D cell culture models, transcriptomic analysis and organ-on-chip systems for innovative treatments, circular biorefinery approaches for IMTA-cultivated Codium seaweed, and the EPA-funded JusTACE project on fair, inclusive transition to sustainable, circular food systems in Ireland.

Thank you to all presenters, including Ms Ameera Naeem Butt, Dr Joanna Przyborska, Dr Arnold Marisa, Dr Habiba Khalid, Ms Zeliha Ece Ozcelik, Mr Necdet Ozcelik, Dr Wisdom Shadrach, Dr Flaviane Maria Galvão Rocha, Ms Margarida Matias and Dr Tracey O'Connor, as well as everyone who attended the event.

Developing Value from Wool

(WOOLMARKED Project)

Determining limit levels for clean and safe wool to support innovation in wool scouring and processing.



The WOOLMARKED project, which is a collaboration between CABR, MTU and University College Cork (UCC), addresses the lack of standardised criteria and a definition of "clean" wool suitable for textile, packaging, construction, and other applications. Washing (scouring) wool is an essential step in converting raw wool after shearing into clean wool suitable for use. Raw wool typically contains suint, dirt, soil, vegetable matter, pesticides, bacteria, fungi, and parasites. At present, all wool is cleaned in the same way, and the wool at the end of this process is essentially sterilised.

The project will review risks associated with unscoured wool and determine limit levels for these risks consistent with ultimate use. It is likely that wool used for non-apparel applications such as insulation, composites, flooring and packaging does not need to be cleaned to the same levels as wool used for clothing. As the project progresses, wool scoured using novel and sustainable techniques will be measured against these limit levels. The resultant information and data will be presented to government, industry and regulators to inform policy.

The project is essential for an Irish scouring facility and will support independent processors who wish to scour their own wool in a regulated manner. The project may subsequently have impact at an EU level.

The WOOLMARKED project is funded by the Department of Agriculture, Food and the Marine and is in collaboration with University College Cork.

Meet CABR Team

Dr Tielidy Lima

Postdoctoral Researcher, Bioengineering Organ-on-Chip (BOOC)
Research Group at CABR

Dr Tielidy Lima is a Postdoctoral Researcher at the Technological University of Shannon (TUS), focusing on wool biorefinery processing (SPRINGWOOL project), as part of the Bioengineering Organ-on-a-Chip (BOOC) Research Group at CABR. She evaluates the potential for reusing sheep wool, focusing on the growing demand for sustainable solutions to manage new by-products.

Dr Lima was awarded a Bachelor's degree in Chemistry and a Master's degree in Materials Engineering from the Federal University of Paraná (Brazil). After 11 years of working in industry, she completed a PhD in Polymer Engineering at TUS.

Her background is in forestry research, using different residues in sustainable practices. Her research interests include hydrogels, nanotechnology, controlled drug delivery, polymer materials, nanocellulose, biodegradable polymers, natural polymers, and materials characterisation.



Meet CABR Team

Dr Anuma Singh

Postdoctoral Scientist, CABR

Dr Anuma Singh is a Postdoctoral Scientist in marine cosmetic skin science at CABR, MTU, currently working on an industry collaboration project with VOYA, an Irish skincare brand.

Dr Singh earned a Master's degree in Applied Microbiology from Banaras Hindu University (BHU, India; 2010-2012) and a PhD in Natural Product Chemistry from the Indian Institute of Technology Guwahati (IITG, India; 2012-2019). Following her PhD, she worked in a number of roles, including Scientist Fellow (Natural Product Chemistry Division at the Institute of Bioresources and Sustainable Development), Postdoctoral Fellow (Vellore Institute of Technology), and Associate Scientist at Dazzeon Biotech Co. Ltd., Taiwan.



With research experience in both academic and industrial R&D settings, her expertise ranges from spectroscopy, chromatography, and photophysics to cell biology, molecular biology, and bioimaging techniques. She has also collaborated with various CROs and academic institutions, served as an invited reviewer for several international journals, and has a strong publication record in peer-reviewed journals.

Meet CABR Team

Ahmed Abdellatif

PhD Researcher, Circular Agriculture and Biotechnology (CircAB)
Research Group at CABR

Mr Ahmed Abdellatif has an Erasmus Master's degree in Food Science and Technology. His Erasmus programme involved four universities in Europe: KU Leuven in Belgium (hosting university), Universidade Católica Portuguesa in Portugal, Hochschule Anhalt in Germany, and University College Dublin in Ireland, which provided him with experience in multicultural working environments and the ability to adapt quickly.

Ahmed is now pursuing a PhD at the Technological University of the Shannon (TUS) under the supervision of Dr Sushanta Kumar Saha, Dr Marija Mojicevic, and Dr Lena Madden.



Ahmed joined CABR in October 2024 and has been working on the DAFM-funded CircoVal project. His research project aims to develop efficient biofuel production from meat industry by-products, followed by the bioremediation of waste streams using microalgae and bacteria for the production of value-added biomass and biopolymers such as bacterial nanocellulose and polyhydroxyalkanoates, within the framework of circular bioeconomy and environmental sustainability concepts.

Meet CABR Team

Megan O'Brien

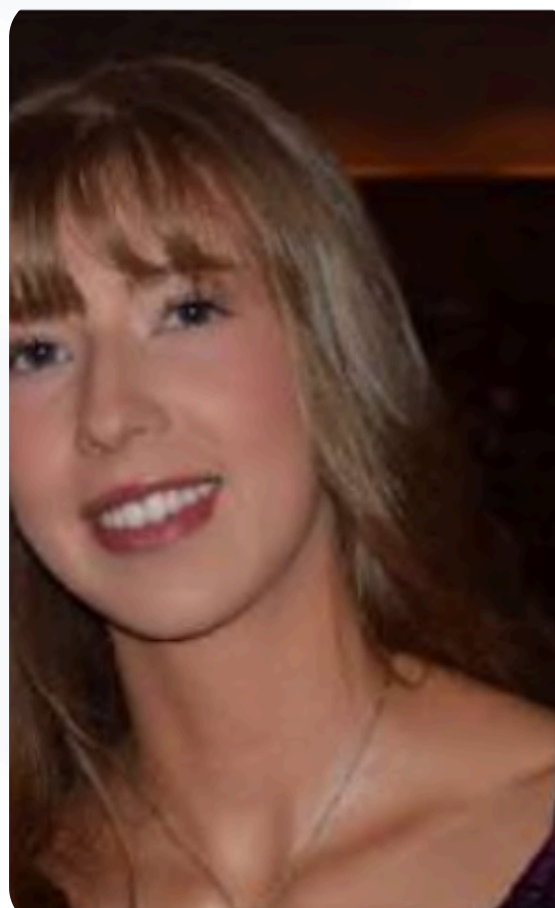
PhD Researcher at CABR, supported by BiOrbic and Research Ireland

Ms Megan O'Brien is conducting her doctoral studies at CABR, MTU, under the supervision of Dr Joanna Tierney, Dr James Gaffey, Dr Joanna Przyborska, and Dr Helena McMahon.

Her research focuses on testing and optimising sustainable feedstocks and products in green biorefinery systems, aiming to advance resource efficiency and develop innovative pathways for the bioeconomy. Megan's research is supported by BiOrbic and Research Ireland.

Megan earned a first-class honours BSc (Hons) in Agricultural Science from Munster Technological University (MTU) Kerry, reflecting her dedication to sustainable agricultural research.

Her undergraduate thesis, conducted in collaboration with Kerry Dairy Ireland (now Kinisla), investigated nitrogen use efficiency and the estimated mineralisation of grasslands on heavy soil profiles in south-west Ireland. The findings contribute to more sustainable land-use practices and enhanced agricultural productivity.



2D-LC–Q-TOF Mass Spectrometry System (CABR Equipment Spotlight)

*Advanced compound identification and characterisation
for research and industry collaborations.*



2D-LC–Q-TOF Mass Spectrometry System

- Manufactured by Agilent Technologies
- Funded by Enterprise Ireland
- Available at CABR for industry collaborations

What is the 2D LC/MS system?

The 2D LC/MS system combines two-dimensional liquid chromatography with high-resolution quadrupole time-of-flight mass spectrometry.

Two-dimensional chromatography uses two complementary separation steps, providing greater separation capacity and selectivity than a conventional one-dimensional method. This is particularly valuable when analysing complex samples or compounds that are difficult to separate.

The Q-TOF mass spectrometer provides accurate mass and MS/MS data that can support the detection, identification and characterisation of sample components. ESI and APCI ionisation options extend the range of compounds that may be analysed, subject to the instrument configuration and analytical method used.

Key Capabilities

- Enhanced separation of complex mixtures using two-dimensional liquid chromatography
- Accurate-mass measurement and MS/MS characterisation
- Analysis of a broad range of small molecules, peptides and proteins
- Targeted screening and quantification using suitable reference standards and analytical methods
- Investigation of compounds that are unresolved or co-elute in conventional LC methods

Applications Across Sectors

Cosmetics

- Characterisation of selected bioactive compounds in ingredients and formulations
- Targeted quantification and comparative formulation studies
- Quality-control method development

Biopharmaceutical and Pharmaceutical

- Characterisation of active ingredients, impurities and selected matrix components
- Accurate-mass analysis of small molecules, peptides and proteins
- Targeted screening for specified contaminants

Food and Bioresources

- Identification and targeted quantification of selected bioactive compounds
- Characterisation of complex natural extracts
- Screening for specified contaminants, including selected mycotoxins and pesticides, subject to method detection limits

Medical Devices

- Characterisation of drug-release and leachable profiles from coatings and device materials
- Identification of selected released, stabilising or degradation-related compounds

The exact analytical approach, detection limits and reporting capability depend on the sample, target compounds and method-development requirements.

Interested in exploring how CABR's 2D LC/MS system can support your business? Contact us via our website: www.cabr.ie/contact-us

Case Study

How CABR Helped BioClover (previously Red Clover Farm) Validate the Skin Benefits of Its Natural Skincare Products (Case Study)



Case Study Highlights

- Company Name: BioClover (previously Red Clover Farm)
- Project Funding: Enterprise Ireland Innovation Voucher
- Project Goal: To evaluate the skin health benefits of BioClover skincare products, with a focus on their moisturising effect, skin barrier support and anti-inflammatory potential.
- CABR Solution: CABR conducted a series of in vitro tests (lab-based experiments using skin cells) to evaluate the potential skin benefits of BioClover natural skincare products.
- Staff Involved: Dr Ashley Sullivan (Postdoctoral Scientist), Dr Siobhan O'Sullivan (Business Development / Postdoctoral Scientist), Dhanyamol George (Research Scientist)

About the Company

BioClover (previously Red Clover Farm) is a family-run business based in Mallow, County Cork, specialising in natural, plant-based skincare and herbal tea products designed to support women during perimenopause and menopause.

Project Context & Problem

BioClover were seeking scientific validation for the skin health benefits of their products, with a focus on their ability to:

- **Promote collagen production**

Collagen is a structural protein that helps maintain skin firmness and elasticity. Its natural decline with age contributes to fine lines and wrinkles. Products that support collagen synthesis may help preserve skin structure and reduce visible signs of ageing.

- **Reduce trans-epidermal water loss (TEWL)**

TEWL is the process by which water evaporates from the skin's surface. When TEWL is elevated, it can indicate a compromised skin barrier, leading to dryness, irritation, dehydration and premature ageing. Products that reduce TEWL help retain moisture and support skin hydration.

- **Protect the skin barrier under stress**

The skin barrier plays a critical role in defending against environmental stressors and maintaining moisture levels. Under stress conditions (e.g. exposure to irritants), maintaining barrier integrity is essential to prevent damage and preserve skin health.

- **Reduce inflammation**

Inflammation is a natural biological response to stress, damage, or external irritants. In the context of skincare, reducing inflammation can help soothe the skin, minimise redness, and support recovery from irritation or environmental stress.



Ms Sinead O'Keeffe (BioClover)

CABR Solution

CABR conducted a series of in vitro tests to evaluate the potential skin benefits of BioClover natural skincare products:

- Collagen Production – Non-cytotoxic concentrations of each product were assessed for their ability to support collagen production, a protein that helps keep skin firm, smooth, and resilient. This was measured using an ELISA test, a laboratory method used to detect and quantify specific proteins in skin cell samples.
- Moisturisation and Barrier Protection – The same products were tested using the 3D SkinEthic™ Reconstructed Human Epidermis (RHE) model, a lab-grown skin model that mimics the outer layer of human skin. Moisture retention was assessed by measuring trans-epidermal water loss (TEWL), and barrier protection was evaluated by exposing the skin model to a chemical stressor.
- Anti-inflammatory Activity – Red Clover Extract and C Serum were further assessed for their potential to calm skin irritation.

Project Results

- All of the tested BioClover products were found to be non-cytotoxic (safe for skin cells), confirming that none of the products cause harm to human skin cells at the tested levels.
- The tested BioClover products demonstrated moisturising properties and it's ability to support skin hydration.
- Red Clover Extract and C Serum demonstrated their ability to maintain skin health under challenging conditions (exposure to a chemical stressor).
- Red Clover Extract and C Serum showed anti-inflammatory activity, suggesting that both products have potential skin-soothing and anti-irritation properties.

Testimonials

"I've worked with the Centre for Applied Bioscience Research (CABR), and their support has been instrumental in building my new business. I'm delighted with the professional results and excited to now be moving on to a new portfolio of ingredients and actives. Without Dr Tim Yeomans and the staff, this would never have been possible. They were always just a phone call away and provided incredible guidance and support throughout the process."

- Sinead O'Keeffe, Cosmetic Chemist & Founder, BioClover

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In Memory of Dr Sushanta Kumar Saha

We are saddened to share the news of the passing of our friend and colleague, Dr Sushanta Kumar Saha. Sushanta died unexpectedly on Tuesday evening last week while visiting his home in India.

Sushanta had worked with Shannon ABC, now CABR, for more than 15 years and led the early work that was carried out around microalgae. Sushanta had an innate desire to pass on knowledge and information, and this was reflected in the undergraduates, postgraduates, and researchers that he mentored and inspired, as well as in the companies that he helped.

One of the companies Sushanta was working with described his passing as “a great loss of such an inspiring soul.”

Sushanta will be deeply missed. Our condolences go to his family and to those who knew him.

