TECHNOLOGY CENTRE PROGRAMME 2019

GET THE COMPETITIVE EDGE

ANALYTICS AND LEARNING TECHNOLOGIES

MANUFACTURING AND MATERIALS

FOOD & HEALTH

BUSINESS PROCESSES

ENTERPRISE IRELAND

IDA Ireland

Technology Centre Programme

The Technology Centre programme is a joint initiative between Enterprise Ireland and IDA Ireland. It allows Irish companies and multinationals to work together on market focused strategic R&D projects in collaboration with research institutions. The 10 Technology Centres in the programme are resourced by highly-qualified researchers who provide a unique ecosystem for collaboration in areas identified, by industry, as being strategically important.

TECHNOLOGY CENTRES

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CeADAR

CeADAR is the National Centre for Applied Data Analytics & Machine Intelligence. CeADAR is a market-focused technology centre that drives the accelerated development and deployment of data analytics and machine intelligence (DA&MI) technology and innovation. The Centre's work focuses on developing tools, techniques and technologies that enable more people, organisations and industries to use analytics and machine intelligence for better decision making and competitive advantage. CeADAR is the bridge between the worlds of applied research in data analytics and machine intelligence (DA&MI) and their commercial application.

The primary outputs of the Centre are prototypes, and demonstrators, alongside contract research plus in-depth reviews of state-of-the-art technology. CeADAR is funded by Enterprise Ireland, IDA Ireland and by contract research. The Centre is headquartered in University College Dublin and is a partnership with the Technological University Dublin.

CeADAR has particular strengths in predictive analytics, machine and deep learning, Blockchain, real time analytics, text analytics and visualisation. The Centre has an extensive catalogue of technology demonstrators, know-how and technology reviews which are all available at no-cost to members.

Industry membership of CeADAR has grown significantly in recent years and now totals over 80 industry partners ranging from multi-nationals to indigenous SMEs spanning every industry vertical.

CeADAR's position is at the intersection of Data Analytics, Artificial Intelligence, and Machine Learning, The Centre is also the focal point of a thriving national ecosystem delivering frequent seminars, conferences, and members' networking events throughout the year.

CeADAR was awarded the Dun & Bradstreet prize for Best Analytics Research Group Ireland at the DatSci Awards and has the EU BDVA i-Spaces accreditation which was awarded in 2018.

CeADAR's 3 core work programmes are in:

- Visualisation & Intelligent Analytic Interfaces
- Advanced Analytics and Blockchain/Smart Contracts
- Machine Intelligence and Deep Learning

Examples of areas where CeADAR has developed demonstrators are:
customer analytics, contact centre analytics, text analytics, analytics in real time, social media analytics, location-based analytics, sentiment analysis, sentiment analytics, image analytics, predictive analytics, machine & deep learning, preventative maintenance, blockchain & smart contracts.

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LEARNOVATE

LEARNOVATE
Leading Learning Innovation

Learnovate is one of Europe's leading research and innovation centres in learning technologies. An industry-led technology centre funded by Enterprise Ireland and hosted by Trinity College Dublin, we connect world-class research with entrepreneurs at the leading edge of the global learning technologies sector.

Learnovate has a core of technology-enhanced learning expertise and a wealth of experience in learning design, product design, user interface design, software development and business innovation including:

Technology – AI, API's, NLP, Cloud, Machine Learning

Learning Design – Needs Analysis, Competency Frameworks, 21st Century Skills, Scaffolded Learning, Formative Assessment

Product Design – User Research, UX, UI, Usability, Gamification Innovation – Outcome Led Innovation, Jobs to be Done, Lean Innovation, Design Thinking

Learnovate offers strategic research and innovation services to individual companies that develop learning technologies; and companies that acquire and use learning technologies. The centre's expertise and experience encompasses a wide range of learning contexts including corporate learning, higher-ed learning, school learning, and non-formal learning.

Organisations who have collaborated with Learnovate include Intel, Microsoft, GAA, BNY Mellon, WBT Systems, Sureskills, CJ Fallon, Cobblestone Learning, Ellucian and Houghton Mifflin Harcourt.

Learnovate can help you build your digital learning success story, whether you are:

- a new venture seeking funding support
- an expanding company in need of expert guidance
- a learning and development professional deploying learning technologies to internal customers

Research areas:

- Digital Content
- Games and Gamification for learning
- Interoperability
- Learning Analytics
- Social and informal learning
- Mobile and collaborative learning
- Assessment and learning analytics
- Personalisation and adaptive learning
- Game mechanics for learning

Research performed by:

Trinity College Dublin, University College Dublin, NUI Galway, Waterford Institute of Technology.

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ICOMP

The Irish Composites Centre (IComp) provides world class innovative R&D, consultancy and networking opportunities for industry throughout Ireland and across all sectors where there are opportunities to use composite materials and associated technologies.

IComp provides the focal point in Ireland for academia and industry to work together to address some of the critical issues related to the use of composite materials which have been identified by IComp industrial members who include companies from the supply chain and, for example, the aerospace, land transport, construction, marine and renewable energy and consumer goods sectors.

IComp is hosted in the Bernal Institute at the University of Limerick (UL), and currently comprises four academic partners (UL, UCD, AIT, NUIG) and 27 industrial members. IComp's R&D activities include materials innovation and composite manufacturing & processing, the design of composite components and structures, joining technologies (including adhesive bonding and surface engineering) and damage detection and repair, supported by a comprehensive programme of modelling, experimental testing and in-depth characterisation. Additionally, bespoke experimental support, consultancy, networking and information services are available to industrial members.

IComp has well-equipped laboratories with the capability of manufacturing, processing, testing and inspecting composite components and structures up to the semi-tech scale, as well as one of the few Laser-Assisted Tow Placement (LATP) research equipment in Europe. The world class faculty and research staff at UL, UCD, AIT and NUIG has many years of experience working in national and international funded research programmes.

Selected research areas:

- Innovative processing and product development of thermoplastic composites including recycling
- Liquid resin infusion processes and product innovation for out-of-autoclave manufacture
- Adhesives and adhesion science for bonding and dis-bonding composites and metals
- Surface engineering to tailor composite, polymer, fibre and metal surfaces to optimise performance
- Damage prediction, detection and repair of composites

Research performed by:

University of Limerick, University College Dublin, Athlone Institute of Technology, National University of Ireland Galway

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IMR

Irish Manufacturing Research (IMR) is an independent manufacturing and industrial energy efficiency research centre focused on delivering solutions for the manufacturing ecosystem throughout Ireland. Our passion is to make Ireland a world leader in advanced manufacturing operations.

As an independent research centre, the IMR offers manufacturing industry a unique environment to collaborate with peers across all manufacturing sectors, and to inform and guide manufacturing research that not only addresses industry problems but also visions for future factories.

We are a cross-sectoral research centre with partner companies in semiconductors, ICT, pharmaceuticals, medical devices, food, energy services, aerospace and other areas. We work closely with academic, Government and industry partners, and through bringing this cross-sectoral interaction around one table, we establish best in class knowledge and behaviours as the starting point for future research.

Through pilot projects embedded in company facilities, IMR research has demonstrated productivity improvements and efficiency savings opportunities in excess of €20M for member and partner companies. It has achieved this through delivery of enterprise-ready solutions in areas such as schedule optimisation, operations simulation, metrology, HVAC commissioning and energy-efficient production.

We are open to all levels of collaboration with Irish-based SMEs and large/MNC manufacturers.

Research areas:

- Manufacturing informatics
- Operational excellence
- Energy management
- Energy efficiency
- Operations research
- Industry 4.0
- Additive Manufacturing
- Robotics & Automation

Research performed by:

Irish Manufacturing Research, Dublin City University, Limerick Institute of Technology, Maynooth University, NUI Galway, Trinity College Dublin, Institute of Technology Tralee, University College Cork, University of Limerick, University of Ulster

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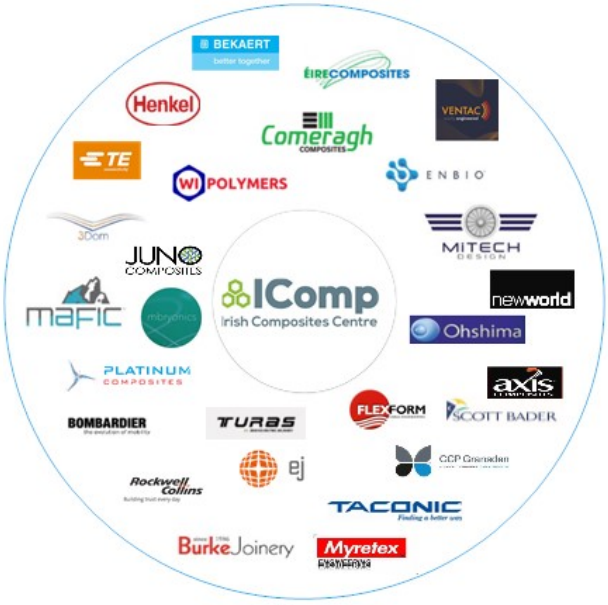
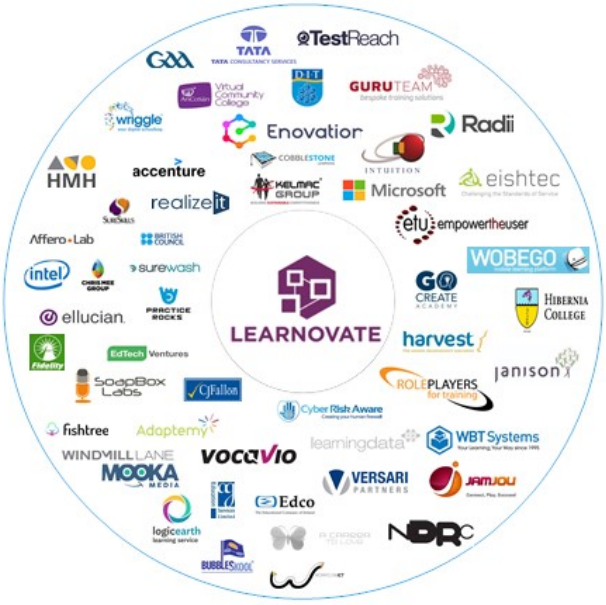
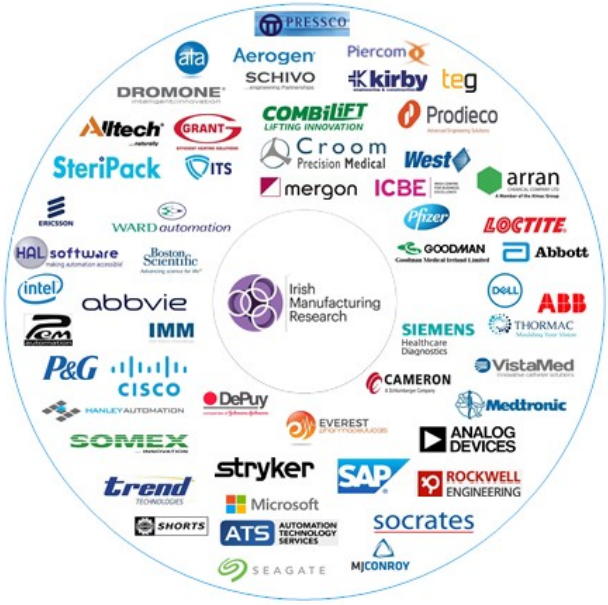
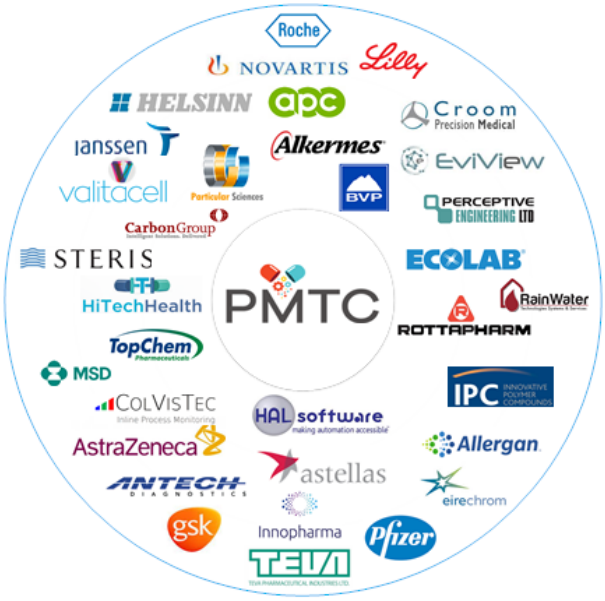
COMPANIES IN TECHNOLOGY CENTRES







COMPANIES IN TECHNOLOGY CENTRES



MCCI

MCCI's (Microelectronic Circuits Centre Ireland) vision is to be the first choice for Microelectronics research that enables future products and applications. MCCI is a technology centre focused on carrying out microelectronic circuit research for the benefit of industry and is a world leader in analogue and mixed-signal integrated circuit research.

We recognise that Microelectronics is at the heart of all technology, driving & powering the Irish economy. Our vision emphasises high impact research outcomes, but beyond that the development of our researchers into independent thinkers and future leaders in Irish companies and in the global semiconductor landscape. We value the trusted networks of industry-led collaborative research and commit to timely execution that benefits not only our industry partners, but which contributes fundamentally to a better, more prosperous society.

MCCI is working with medical companies on new ultra-low power implantable microchips to monitor the human body, with smart food companies on microchips that can detect DNA in food products, with energy companies to reduce the power in data centres and communications companies on networks of the future. The world-class circuits that we design allow companies to differentiate their products.

In the last number of years alone there have been 11 commercial licences from MCCI, 38 of MCCI research staff have transferred into industry, and our member companies have created over 1,000 new jobs, with 120 of those jobs attributed to MCCI.

Research areas:

- Analogue and mixed-signal circuits research
- Sensor interfaces
- Communications
- Smart medical devices
- Smart agri-food devices

Research performed by:

Tyndall National Institute, University College Dublin, University College Cork, University of Limerick, Maynooth University, Cork Institute of Technology.

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PMTC

PMTC
Advanced Technology Solutions in Pharmaceutical Manufacturing

The Pharmaceutical Manufacturing Technology Centre (PMTC) is a leading industry informed research centre focused on developing advanced technology solutions for all stages of pharmaceutical manufacturing. The market-focused research delivers solutions to contemporary issues currently facing the pharmaceutical industry.

The PMTC is hosted at the University of Limerick with core funding from the Irish Government, supplemented with co-funding from industry and leveraging further research funding. The PMTC is coordinated by an industry–academia advisory committee with an industrially driven research programme. Indigenous SMEs along with MNCs access the PMTC to inform the research agenda.

Company engagement allows the PMTC to execute world-leading, industry-relevant research in advanced technology solutions to address contemporary manufacturing issues across the pharmaceutical sector. Members benefit by having access to core capability and skills in continuous processing, mathematical modelling, statistics and process optimisation; and, unrivalled awareness of research programme outputs.

Other benefits include pre-agreed project agreements; professionally managed, timely access to IP and research outputs; opportunities to identify talent for future recruitment; and, access to members only networking forums with key industry players, academia, regulators and government agencies. The Centre accesses state-of-the-art research facilities capable of delivering molecule to patient solutions through its Irish academic members.

Research areas:

- Advanced rapid micro-analytical techniques
- Enabling and control of continuous processing by process analytical technology (PAT)
- Soft sensor modelling tools
- Active pharmaceutical ingredient (API) real-time release PAT
- Pharmaceutical packaging technologies
- Cleaning, validation and verification

Research performed by:

University College Cork, University of Limerick, Institute of Technology Tallaght, Waterford Institute of Technology, Cork Institute of Technology, Tyndall National Institute, NUI Galway, NIBRT, Dublin City University, Dublin Institute of Technology.

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DPTC

The Dairy Processing Technology Centre (DPTC) is an industry–academic collaborative research centre, hosted by the University of Limerick, with a research agenda driven by the long-term growth opportunities for the dairy sector created by the removal of milk quotas in 2015.

DPTC has been established as a centre of excellence for dairy processing research and innovation. The Centre will help to fuel growth in the Irish dairy sector by performing research focused on cost-efficient processing, facilitating a step-change in environmental sustainability and creating, validating and commercialising a pipeline of science and technology-based manufacturing platforms for dairy ingredients.

The foundation of the DPTC is a strong, long-term industry–academic collaborative partnership that will develop, build and translate the knowledge and capabilities in dairy processing that are needed today and for the long-term growth development of the sector. Current members of the Centre are the industry partners Arrabawn Co-op, Aurivo Co-op, Carbery Group, Dairygold Co-op, Glanbia Ingredients Ireland, Kerry Group, Lakeland Dairies and Tipperary Co-op, and together with Teagasc, University College Cork, University College Dublin, and NUI Galway, and collaborating partner institutions Dublin City University, Dublin Institute of Technology, and Institute of Technology Tallaght.

Research areas:

- Efficiencies – cost competitiveness in dairy processing
- Process development – next generation dairy processing science and technology
- Product innovation – innovating for value through dairy processing
- Quality and safety – product quality and safety by design
- Environmental sustainability – towards a zero emissions dairy industry

Research performed by:

University of Limerick, Teagasc, University College Cork, University College Dublin, NUI Galway, Dublin City University, Trinity College Dublin, Dublin Institute of Technology, Institute of Technology Tallaght

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FHI

Food for Health Ireland (FHI) unites world-class science and industry expertise to improve health through innovation in food. Its purpose is to identify novel ingredients coming from milk to develop functional food ingredients that will offer health benefits to consumers.

FHI links world-class academic research with industry vision for the potential of successful market innovations. The industry-focused research strategy within FHI includes the identification, development and exploitation of novel milk-derived bioactive compounds for improving health and wellbeing. FHI also provides a pipeline for the development of new functional food ingredients and products with validated health benefits for consumers.

The FHI approach is to work with Irish food industry partners and in close connection with scientists. FHI has built a unique bridge between high-class research organisations and industry needs.

FHI also provides a contract research facility for small and large global food companies utilising our competencies, resources and technologies. This service provides a gateway to academic research in Ireland and supports open innovation. FHI has completed over 60 projects of this kind since 2008.

Research areas:

- Technology and healthy cheeses
- Infant nutrition
- Appetite modulation
- Glycaemic management
- Performance nutrition and healthy ageing

Research performed by:

Teagasc Food Research Centre, University of Limerick, University College Cork, Dublin City University, NUI Galway, Maynooth University, University College Dublin.

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MTI

STRATEGIC INNOVATION, MAXIMUM IMPACT_

Meat Technology Ireland (MTI) is an industry-led initiative that will build a strategic research and innovation base in beef and sheep meat processing in Ireland. The Centre is a 'one-stop shop' for meat processing research and technology, serving as a hub to co-ordinate all beef and sheep meat processing research needs.

MTI is hosted by Teagasc at its Ashtown Food Research Facility in Dublin with Dublin Institute of Technology (DIT), Dublin City University (DCU), University College Cork (UCC) and the Irish Cattle Breeders Federation (ICBF) involved as research providers. The companies behind the initiative are ABP Ireland, Ashbourne Meat Processors, Dawn Meats Group, Dunbia (Ireland), Hilton Foods Ireland, Irish Country Meats, Kepak Group, Liffey Meats, and Slaney Foods International.

The programme is delivered through 6 strategic research pillars which have been defined by the commercial requirements of the MTI member companies.

Research areas:

- Genomic predictions
- Meat tenderness management
- Meat safety and shelf life extension
- Meat characterisation technologies
- Meat and health
- Future market opportunities

Research performed by:

Teagasc, Dublin Institute of Technology, University College Cork, Irish Cattle Breeders Federation, Dublin City University and University College Dublin.

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IVI

The Innovation Value Institute's (IVI) contribution to Government and industry is the availability of a body of knowledge that directs those managing information and technology in the most effective practices dedicated to optimising their investment and delivering business outcomes and value.

The IVI researches, develops and disseminates empirically proven and industry validated IT best practice through a unique open collaboration between leading academic and industry practitioners. The IVI facilitates a collaborative community of like-minded peers committed to investigating, advancing and disseminating the frameworks, tools and best practices associated with managing IT value and IT enabled innovation.

The IT-Capability Maturity Framework (CMF) has been used by over 500 global organisations to enable and measure improvements in key areas:

- IT capability measurement and improvement;
- IT organisational design and capability management;
- IT business alignment and leadership;
- Organisation benchmarking and best practice;
- IT risk management – DP;
- Enabling digital processes across all business departments

The IVI represents a 'triple-helix' support and innovation model across academia, government and industry, and facilitates a thriving international consortium, which now includes over 100 organisations globally. This collaboration provides the stable foundation and ecosystem to transform the way public and private sector organisations manage IT for value and innovation.

Research areas:

- Defining and presenting the capability that organisations need to use the opportunities presented by technology and information management
- Developing the tools and training needed to allow organisations to use our research output
- Defining and developing an IT capability framework for SMEs
- Using the IVI capability framework to address current business challenges
- Developing a European framework for ICT professionalism for the European Commission

Research performed by:
Maynooth University

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