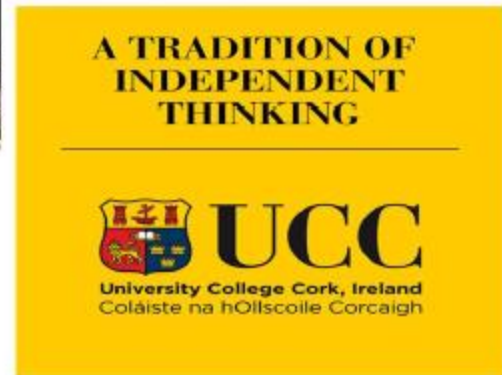


Collaborating to Innovate and Innovating to Collaborate

Industry engagement and support at University College Cork



31st International Manufacturing Conference
4th-5th September 2014



Dr. Tim Roche, Director Technology Transfer, UCC

UCC Profile

- *ca.* 19,000 registered students.
 - 15,835 undergraduates
 - 3,489 postgraduates
 - 1,200 PhD students
 - 2,300 adult and continuing education students
 - 2,415 international students (14%)
 - International students from 102 countries
- 1,203 academic and research staff
- 1,202 administrative and support staff

QS 2013 World University Rankings

Top 100 Institutions Worldwide (top 150 in 2012)

- Modern Languages
- Law
- Biological Sciences

Top 150 institutions Worldwide (top 200 in 2012)

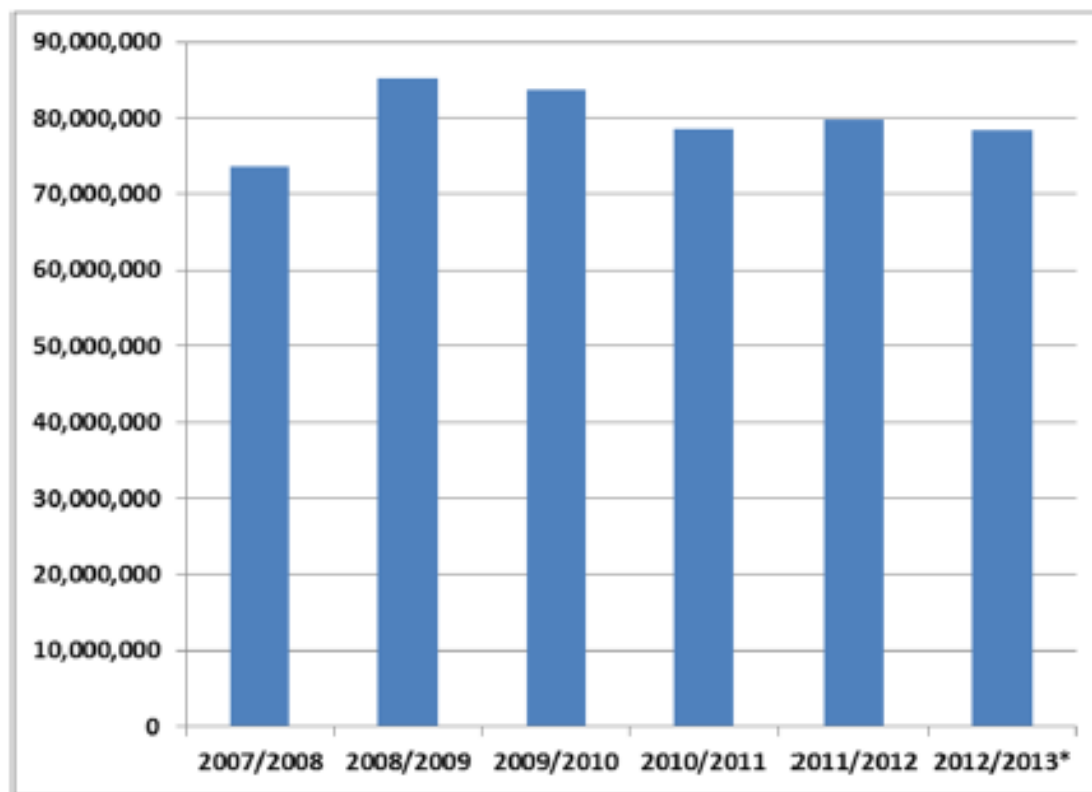
- Electrical Engineering
- English Language & Literature
- Medicine

Top 200 institutions Worldwide

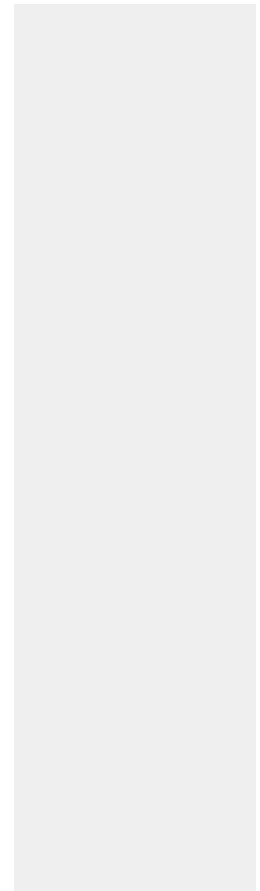
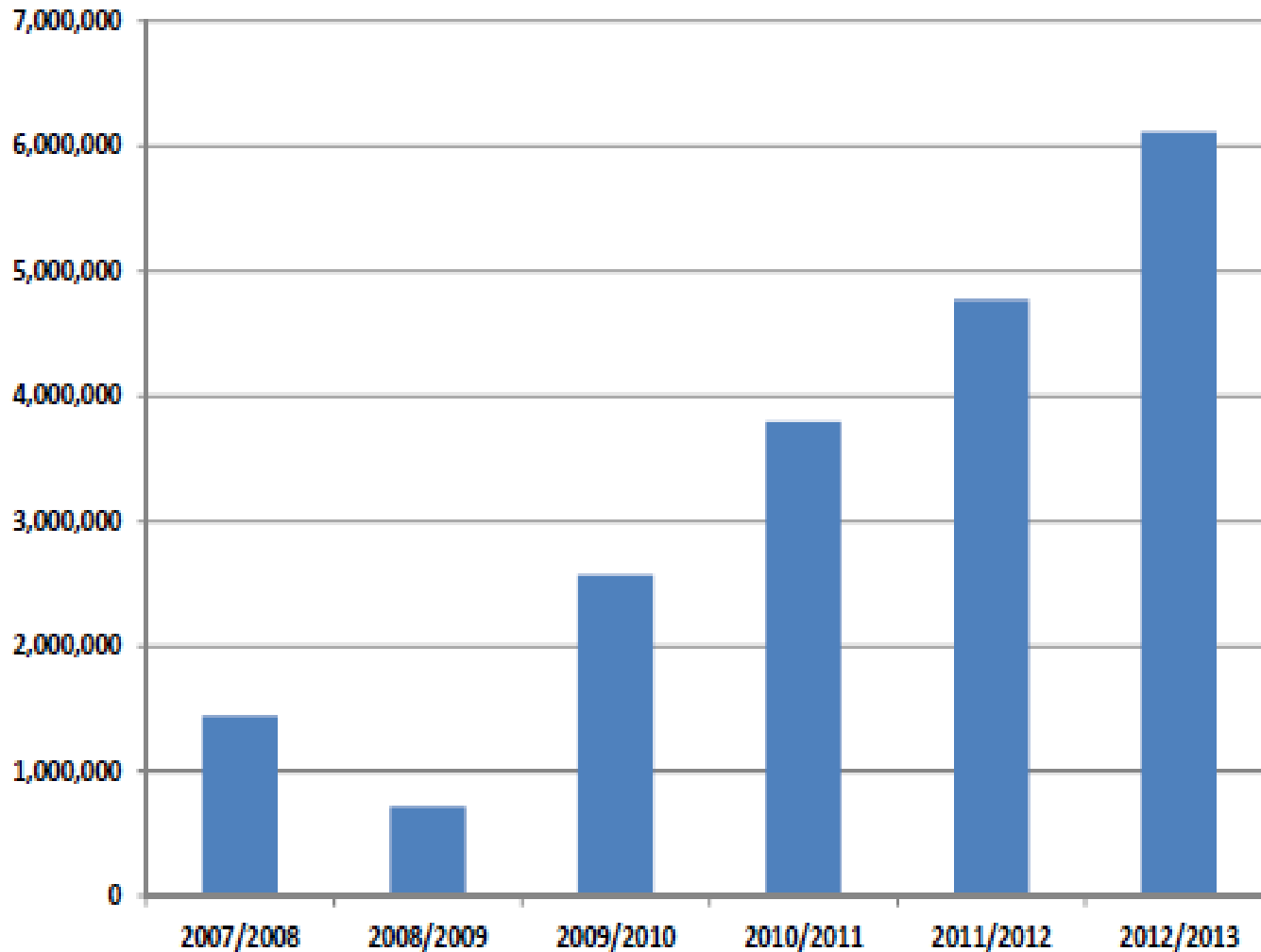
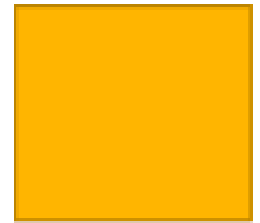
- Geography
- Chemical Engineering
- Pharmacy and Pharmacology
- Environmental Sciences



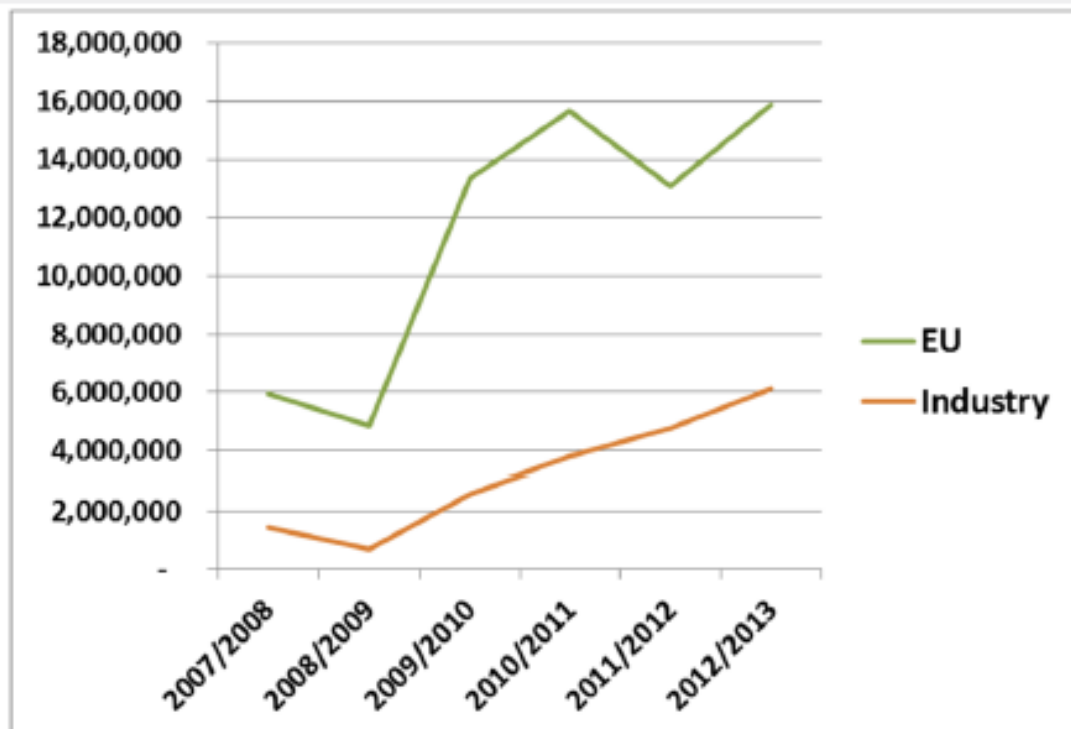
Overall Research Expenditure : 5 Year Profile (€)



New Award Income (€): Industry



New Research Awards — Non-Exchequer Profile (€)



Nature of Engagements at University – Industry Interface

- Research collaboration
- Philanthropic support for Research and / or Teaching and Learning
- Placements / internships – UG / PG
- Service provision
- Training & up-skilling – accredited / bespoke
- Consultancy
- Advisory boards – input to curriculum development and input on strategic development

Research Collaboration

- **Contract research** – entirely industry led and driven; industry owns IP ; usually fully funded by enterprise partner
- **Collaborative research** – jointly led by university and enterprise sector – can be part grant supported
- **Support for PhD students / postdocs** – often the company partner has limited interest in the research outcome; focus on partnership

Grant Support – Collaborative Research



Enterprise Ireland

- Innovation Partnership Programme – ideal for collaborative research. IP usually owned by university partner but IP agreement in place, often with first option to license IP
- Innovation Vouchers – small initial explorations
- Technology Centres – Enterprise Ireland & IDA
- <http://www.enterprise-ireland.com/en/Researchers/Collaborate-with-Industry/>



Grant Support – Collaborative Research



SFI

- Crosses many levels and scales
- Research Centres – formerly CSETS / SRCs – designed for large scale academic – industry engagement. Usually based on prior successful engagement and relationship.
- TIDA awards – encourage commercialisation
- Industry Fellowships
- <http://www.sfi.ie/working-with-enterprise/>



UCC

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

Grant Support – for early career researchers



Irish Research Council

- Enterprise Partnership programme – PhD and postdoc awards – 30% funded by enterprise partner
- Modest contribution – often about connectivity rather than direct research outcomes; excellent first interaction with a research team
- Employment based programme – increased focus on the employer; PhD researcher based in enterprise
- Elevate postdoctoral programme – 2 years in industry overseas; 1 year in HEI in Ireland
- <http://research.ie/funding-opportunities>



NRPE



Report of the Research Prioritisation Steering Group



<http://www.forfas.ie/publications/featuredpublications/title.8958.en.php>

Intellectual Property

- Putting Public Research to work for Ireland



http://www.diei.ie/publications/science/2012/Intellectual_Property_Protocol_Putting_Public_Research_to_Work_for_Ireland.pdf



KTI
Knowledge Transfer Ireland
Where Research & Business Connect

See also: <http://knowledgetransferireland.com>

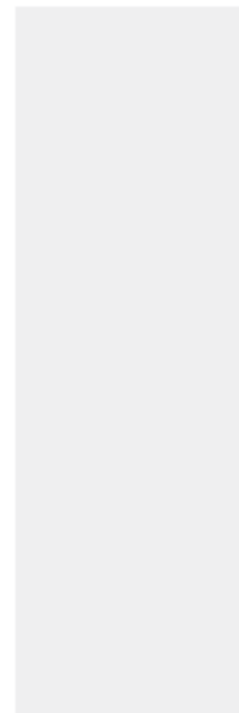


SFI Research Centre Programme, 2012







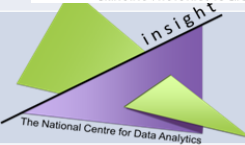

The largest joint state/industry research investment in Irish history (ca €300M)

- 88 initial expressions of interest
- 35 pre-proposal submissions
- 11 full proposals - UCC lead in 6 and partner in 3
- 7 Research Centres selected for funding Q1 2013
 - UCC leads 4, co-leads 1, partner in the remaining 2



SFI Research Centres programme, 2012

Funded Centres

	Centre (Acronym)		Lead/Co-Lead	Partner
1	Alimentary Pharmabiotic Centre (APC) Director : Prof Fergus Shanahan		UCC	Teagasc, CIT
2	Irish Centre for Fetal and Neonatal Translational Research (INFANT) Director: Prof Louise Kenny		UCC	TNI at UCC, RCSI
3	Marine Renewable Energy Ireland (MaREI) Director: Prof Alistair Borthwick		UCC	UCD, NUIG, NUIM, UL
4	Irish Photonic Integration Research Centre (I-PIC) Director: Prof Paul Townsend		TNI at UCC	UCC, DCU, CIT
5	Ireland's Big Data and Analytics Research Centre (INSIGHT) UCC co-lead: Prof Barry O'Sullivan		UCC, UCD, NUIG, DCU	-
6	Advanced Materials and BioEngineering Research Centre (AMBER) UCC lead PIs: Prof Mick Morris, Prof Justin Holmes		TCD	UCC, RCSI
7	Synthesis and Solid State Pharmaceutical Cluster (SSPC) UCC lead PI: Prof Anita Maguire		UL	UCC, UCD, TCD

Total value of SFI investment: €186,567,913

Total value of SFI investment at UCC (incl. TNI at UCC): €94,298,415

www.sfi.ie/working-with-enterprise/how-to-work-with-industry.html

Alimentary Pharmabiotic Centre

<http://apc.ucc.ie>



Fondúireacht Eolaíochta Éireann
Science Foundation Ireland

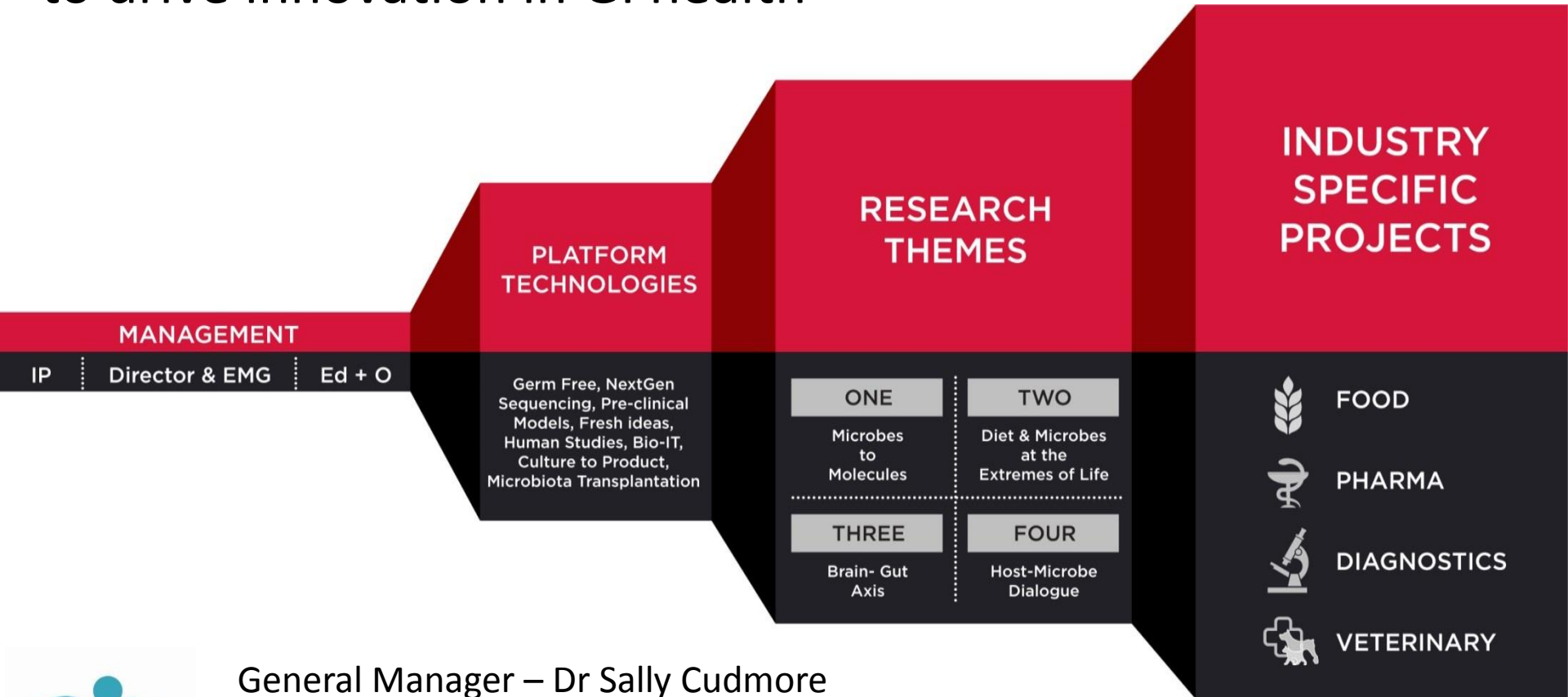
- Over 150 staff, including scientists and clinicians at UCC and Teagasc [Director Fergus Shanahan]



- Mining the **microbiota** for novel pharmabiotics [probiotics, antimicrobials, bacterial products or structures]
- Targeting chronic and acute conditions [brain-gut, infection, inflammation, aging, metabolic syndrome]

Working with industry (food, pharma, diagnostics) to drive innovation in GI health

<http://apc.ucc.ie>



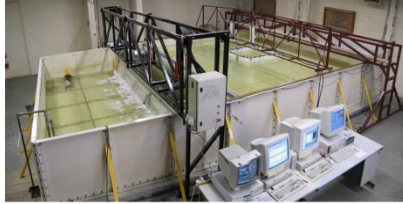
General Manager – Dr Sally Cudmore

s.cudmore@ucc.ie

<http://apc.ucc.ie>

MAREI -Integrated Cluster

Working together to secure Ireland's position as a global leader in Marine Renewable Energy



Tidal Basin (NUIG)



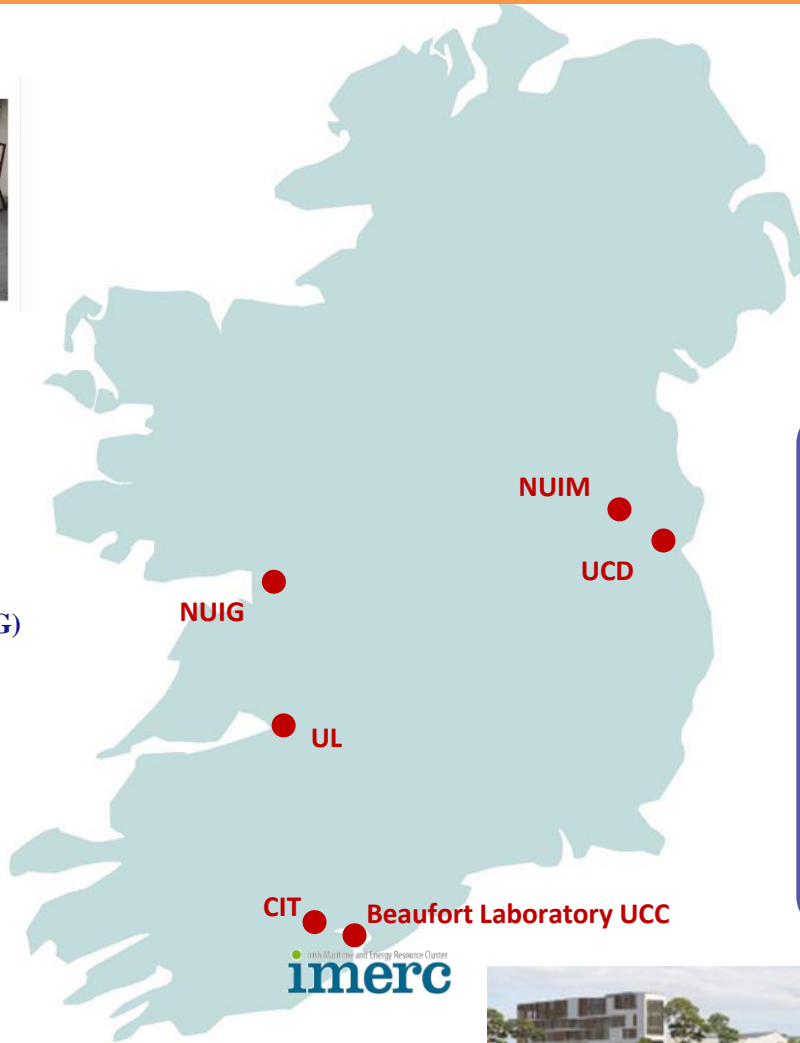
Advanced Materials Testing (NUIG)



Marine Robotics (UL)



National Ocean Test Facility (UCC)



>48 Industry Partners

Strategic R&D Agenda requires:

1. Scope
2. Scale
3. Dynamism
4. Synergy
5. Infrastructure
6. Facilities

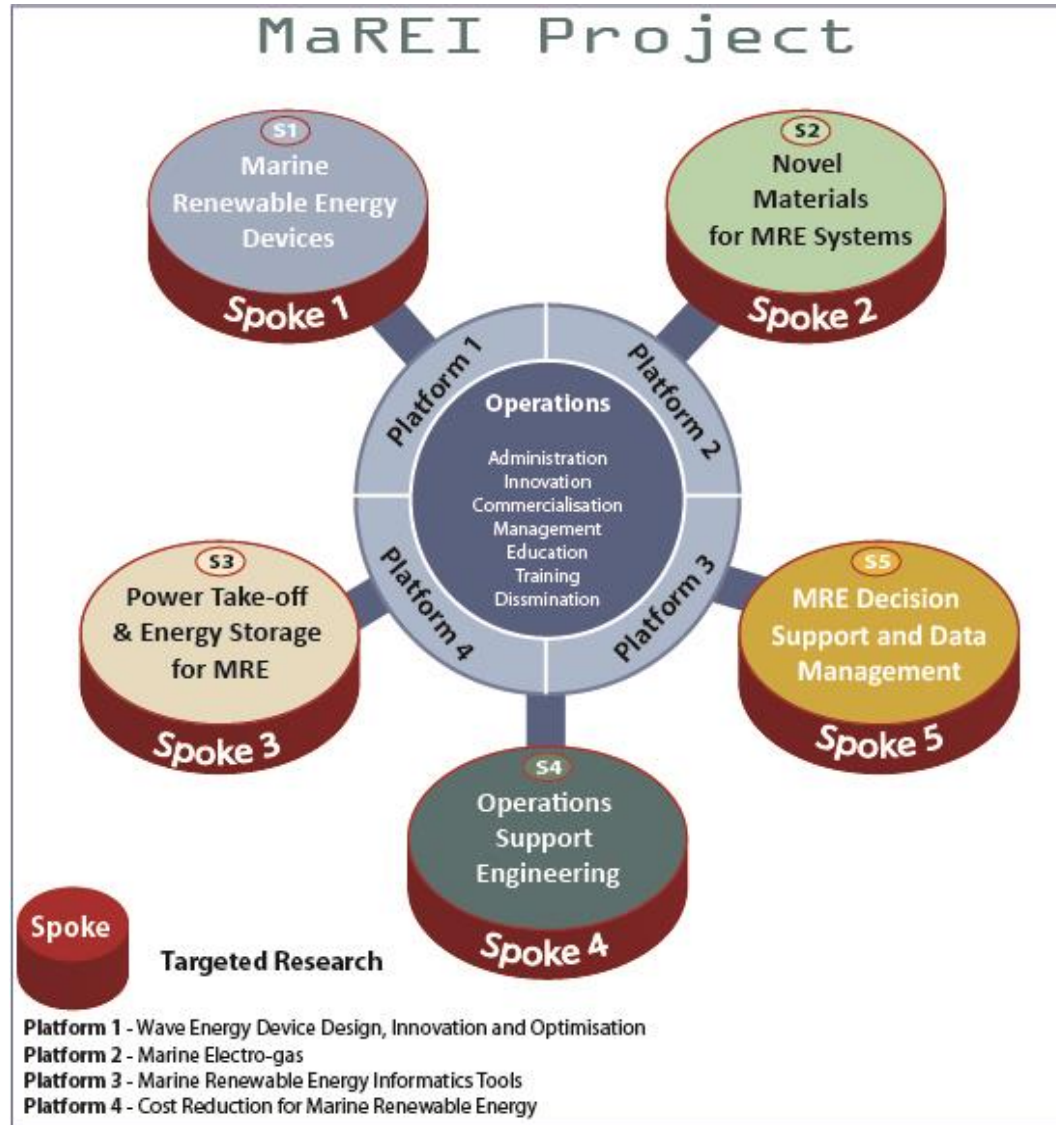


Beaufort Laboratory (UCC)



Fondúireacht Eolaíochta Éireann
Science Foundation Ireland

Research Program

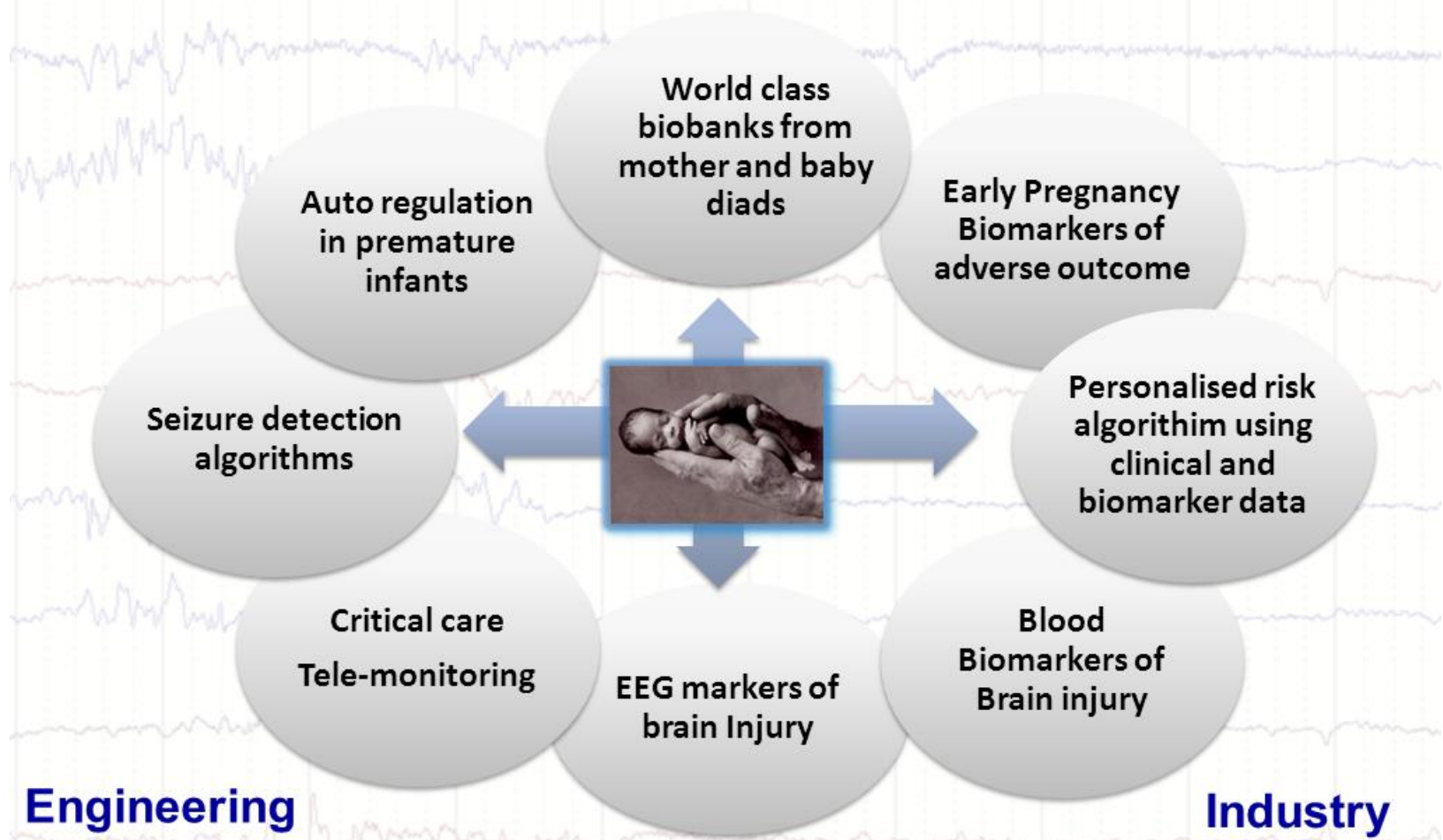




INFANT: Irish innovation in perinatal healthcare research leading the world...scientific excellence with societal and economic impact

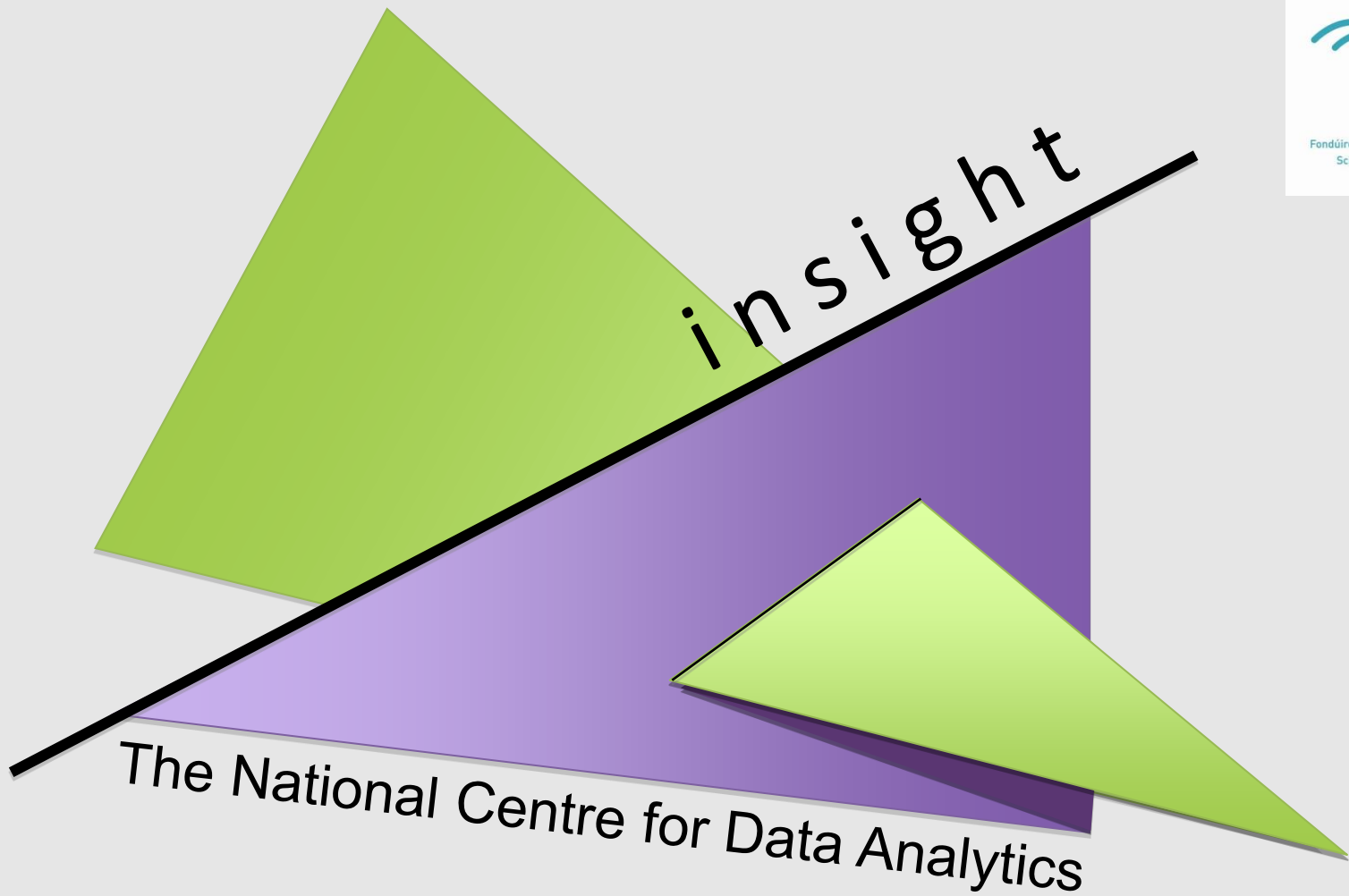
Medicine

Computing

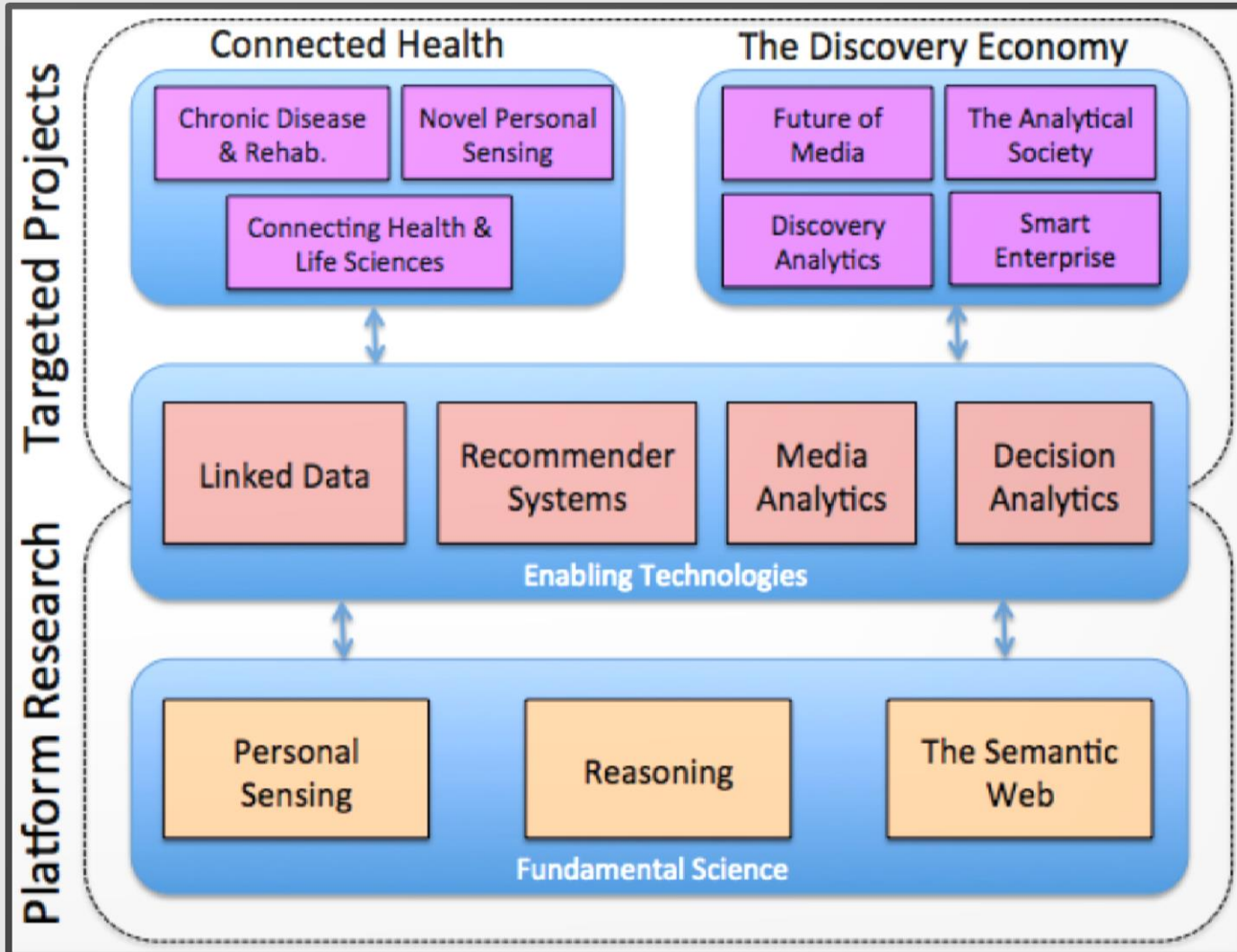


Engineering

Industry



Research Programme



The Irish Photonic Integration Centre



IPIC

BRINGING PHOTONICS TO LIFE

Presenter: Prof. Paul Townsend, IPIC Director and Head of Photonics, Tyndall

Key Research Themes

Communications



Ultra-high capacity coherent communication systems



Energy-efficient photonic interconnects

Biomedical



Miniaturised point-of-care diagnostic systems



Smarter surgical devices

Technology Centres

Technology Centres are based in a University with support from partner colleges to deliver on the research needs of the companies.

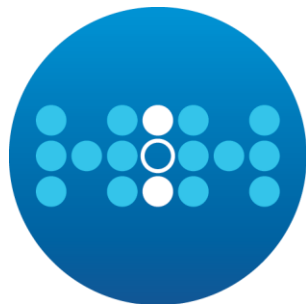
- Applied Nanotechnology [www.ccan.ie]
- Microelectronics [www.mcci.ie]
- Food for Health Ireland [www.fhi.ie]
- Energy Efficiency [www.i2e2.ie]
- International Energy Research Centre [www.ierc.ie]
- Cloud Computing [www.IC4.ie/]
- Financial Services – Governance, Risk and Compliance [www.grctc.com/]
- Data Analytics – CeADAR – [www.ceadar.ie]
- Pharmaceutical Manufacturing [www.sspc.ie]

Health Innovation Hub

- **HIH facilitates and brokers engagement with clinicians to trial products in clinical setting**
- HIH Cork- pilot demonstrator of how best to operate a national HIH
- Have operated two public Calls for healthcare innovations from Irish companies
- Project manage all projects
- Always open to discuss new projects

www.hih.ie

Dr Tanya Mulcahy t.mulcahy@ucc.ie



Health
Innovation
Hub



Department of
Jobs, Enterprise and Innovation

HIH partners



Commercialisation and the University

The point of research for a university, is to get the research out, not to extract a lot of money from research. Good research then produces good companies, which produce jobs, which spin out other companies, which create more jobs... We should really think about universities as a force for economic growth

John Hennessey, President of Stanford University
(in an *Irish Times* interview, June 2010)

The Role of the University in supporting innovation

- A University's duty is to its Community
 - Internal –staff, contractors and students
 - External- local community, industry, funders, alumni, etc.
- Traditionally the University's role is to educate and do research
- Need to deliver greater economic impact
 - Putting research to work in the economy (KT/TT)
 - Provide a return to the exchequer
 - Support the trade of business and the business of trade
 - Support innovative initiatives of industry & entrepreneurs
 - Support emerging sectors AND (not Vs) traditional industry
- Teaching Innovation is NOT Innovation
- Research into Innovation is NOT Innovation
- Technology Transfer is NOT Innovation
- INNOVATING leads to INNOVATION
- Needs to be deliberate, resourced, managed and measured for impact

What does industry want from a University?

- ✓ To see where it can't look
 - To explore the possible
 - 'Blue skies' Research
 - Thought leadership
 - Next generation
 - Horizon (vertical and horizontal) scanning
 - Pre-commercial research
 - Pre-commercial IP
 - International collaborations

- ✓ To look where it can't see
 - To understand the probable
 - Validation/analysis
 - Test-bed
 - Scientific endorsement
 - Access to publicly funded research programs
 - Unconventional Expertise
 - Disruptive technologies
 - Complementary assets (e.g. IP)
 - People with transferable skills

What does industry want from a University (contd..)

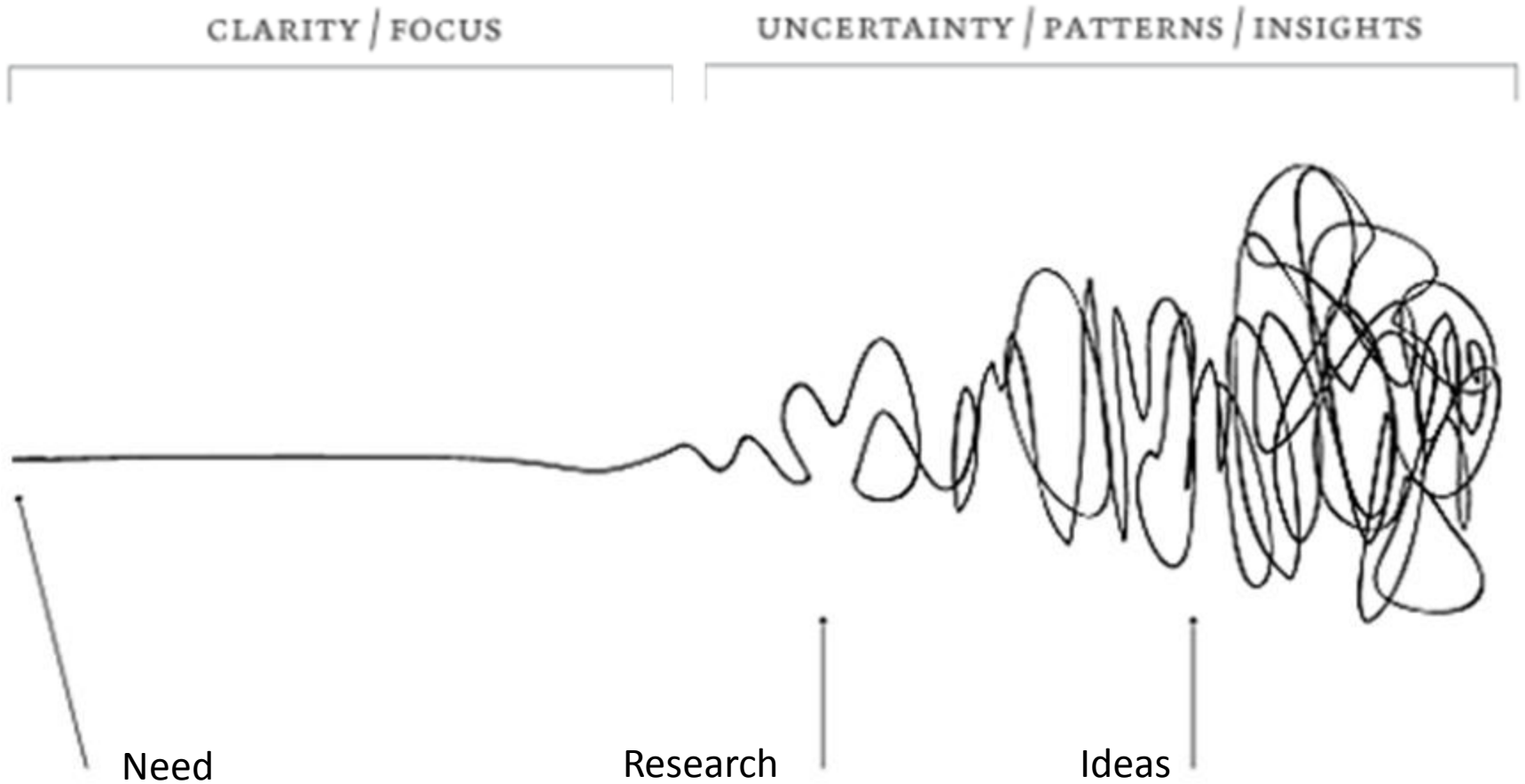
- ✓ 'Say what you do and do what you say' culture
- ✓ Responsiveness/agility/quick turn-around & delivery
- ✓ Value for money
- ✓ Transparency
 - Processes, timelines, deliverables
- ✓ Least bureaucracy possible
- ✓ Confidence in:
 - Quality of service
 - Consistency of terms
 - Confidentiality
 - Protection of and access to/ownership of IP

and well, please tell us what else....

Success at the University – Industry Interface

AGILITY, EFFICIENCY & PARTNERSHIP.....

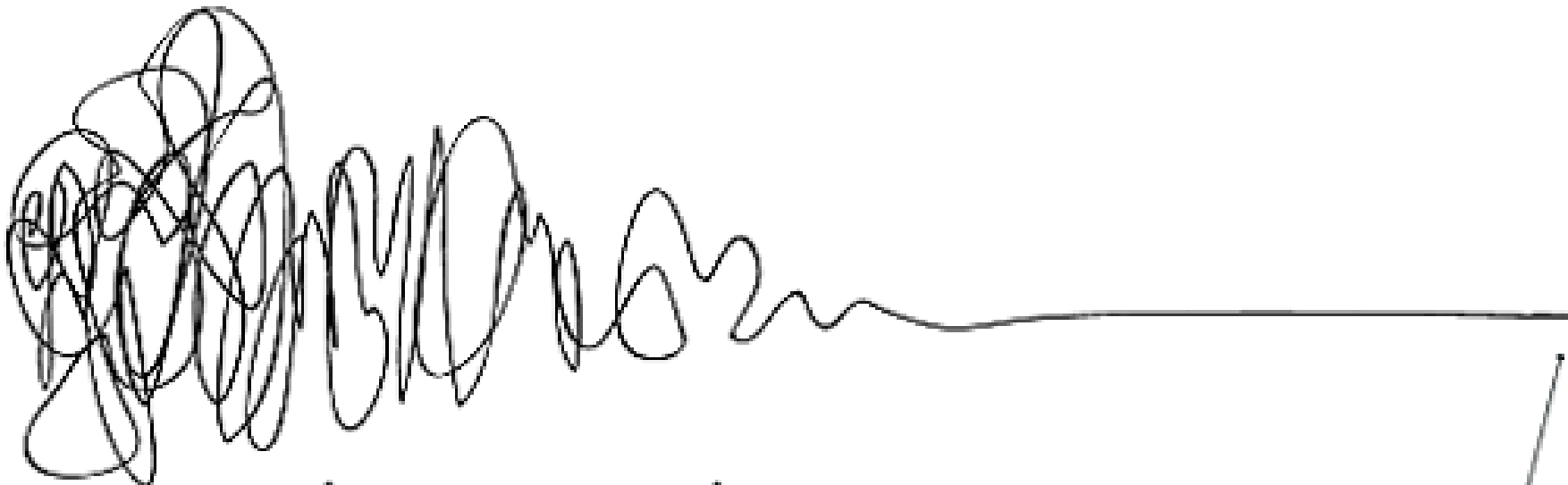
Do you want this



....or this?

UNCERTAINTY / PATTERNS / INSIGHTS

CLARITY / FOCUS



RESEARCH

CONCEPT

PROTOTYPE

DESIGN

How can we support Innovation?

- Industry sectors
 - Research Centres *via* Innovation ‘hub and spoke approach’
 - i.e. centres become the spokes serviced by an ‘Entrepreneurship and Innovation hub’
 - Thought leadership fora
 - National and international Industry-led technology centres/initiatives
- Established companies
 - Awareness of and access to R&D, expertise and IP
 - Partnering into corporate innovation vs process Vs R&D projects
 - Researchers in residence
- Entrepreneurs
 - Start-up incubation (e.g. via GatewaUCC and IGNITE)
 - (Continued) access to R&D, expertise, capital and IP
- Arts & humanities
 - Creativity for ideation and concept development
 - New businesses
 - Communication platforms e.g. social media

Toward improved industry liaison

- Process reviewed in light of
 - Encouraging increased industry engagement
 - New National IP Protocol (2012) for publically funded research
- Suite of newly drafted template agreements
 - reflecting level of industry engagement from collaboration to pure service type work and in turn IP ownership requirements
- Streamlined process and tools to establish accurate brief and facilitate decision-making
- Recruited new case managers (CMs) with aligned commercial experience
- Augmented support for more dynamic and systematic industry liaison
 - Researcher + Case Manager
 - CM acts as liaison between University admin and industry partner
 - Front-line contracts management to ensure more efficient flow and real-time addressing of issues
 - Proactive engagement with key companies in areas of strategic interest
- A more streamlined and tailored response to needs of industry and University
- New CRM system
- Measuring and monitoring efficiency

Fail early if you must (and you must)



“Sometimes you have to go up really high to understand how small you really are”

-Felix Baumgartner



Let us be part of your next big step!!



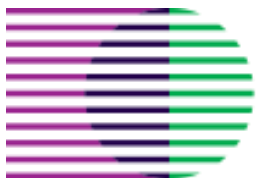
Thank You!

Contact:

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KTI

Knowledge Transfer Ireland

Where Research & Business Connect

**A TRADITION OF
INDEPENDENT
THINKING**



UCC

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh