

Submission to the National Smart Specialisation Strategy**August 9th 2021**

University of Limerick (UL) welcomes the opportunity to make a submission on the development of a Smart Specialisation Strategy for Ireland.

At UL we have a long history of industry engagement across our research and academic programmes. Our hosting of three SFI Centres (Lero, Confirm and SPPC), the SFI Centre for Research Training in Foundations of Data Science as well as two Enterprise Ireland Centres (PMTC and DPTC), as well as the All-Island Composites Materials (ICOMP) Network focusing on advanced light-weight materials for wind, aviation and construction provides a solid foundation for supporting industry in Ireland regionally and nationally. As well as serving a research agenda, the UL hosted centres also provide a talent pool for their sectors and ensure academic programmes associated with them are producing highly skilled and knowledgeable graduates by embedding research in curricula.

Areas of current and emerging strength

We note the reference in the consultation document to the areas of strength in the three regions. While we broadly agree with the areas of strength for the three regions, we recommend the addition of **software** as an area of strength to the Southern region. Lero, the SFI Research Centre for Software is hosted by UL and is internationally recognised as a leading centre for software research. It is home to over 300 researchers across a network of higher education, industry and enterprise partners, many of whom are the leading software companies in the world and based in the Southern region.

We also support the inclusion of pharma as an area of strength in the Southern region. This is supported by the UL hosted SSPC SFI Centre for Pharmaceuticals as well as the Enterprise Ireland PMTC providing a comprehensive research ecosystem for the region as well as nationally. SPPC supports the pharmaceutical and biopharmaceutical sectors and together with companies based in the region provides a skills, assets and capabilities basis for adding **biopharma** to the area strengths of the Southern region. SSPC has successfully grown from its inception in 2007 to become a large centre with a budget of over €61m focused on the entire pharmaceutical production chain with an additional focus on manufacturing and modelling in its current phase. SSPC should also be signalled as a central part of the national pharma/biopharma sector in Ireland in the final strategy document.

With respect to the emerging areas of opportunity, the Bernal Institute at UL is well positioned to support the area of Renewable Energy. The Bernal Institute was founded in 2016 and has established itself as a leader in the field of materials science with a focus on the scientific design and manufacture of structured materials in the areas of health, energy and environment. Researchers in the Institute already partner with a range of industries around the Shannon Estuary, nationally and internationally in areas including marine robotics, material design for wind turbines, energy storage (battery) and conversion, smart grid systems, drone technology as well as carbon reducing technologies.

The opportunities afforded by Shannon airport offer additional benefits for the Southern region as the Estuary Renewable Energy plans develop. Harnessing the strengths of the researchers at UL across a range of areas including risk, advanced manufacturing, structured materials, green chemistry, chemical engineering, the full potential of the region can be exploited as real life testbed for climate resilient solutions and systems at European scale. As such, this approach offers a regional as well as national advantage leveraging existing collaborations that exist internationally to benefit at all levels and position Ireland to lead globally in addressing climate actions.

The Intergovernmental Panel on Climate Change report published August 9th with its unequivocal conclusion that human activity is leading to rapid and widespread changes to land, atmosphere and oceans highlights the urgent need for a range of actions. Not least of these is the need for investment in research and innovation to address areas where solutions don't already exist. Adequate investment will lead to new industries of the future.

Support for research and innovation

The need for greater investment in the research ecosystem has been brought into sharp focus in recent times through the lens of Covid. Addressing the UN Sustainable Development Goals is a priority with many universities and others, including UL, orientating their academic and research agendas to deal with the societal challenges. Such ambitions cannot be meaningfully achieved without a broader investment in research and innovation. The IUA and UL [and other] submissions to the recent Dept of Further Higher Education Research, Innovation and Science Strategy have provided indepth responses to the needs of the research ecosystem including the requirement for significant investment in the system.

In the context of this smart specialisation consultation, consideration should be given to how organisations engage with research to maximise capacity and capabilities and to build impact as well as considering the need for overall investment to strengthen and broaden the system. Such investment is an imperative if Ireland is to remain competitive in the research landscape as well as to keep to the fore of scientific breakthroughs and

hence well positioned to continue to attract foreign direct investment and support small and medium enterprises.

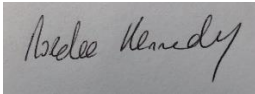
Among the many issues which prevent organisations from engaging in research, development and innovation is the risk involved in these activities from an investment and strategic perspective. Reducing this level of risk is essential and this can be achieved through a combination of financial supports and training as well as continued assistance for Higher Education Institutions to work with companies to realise the full potential of these partnerships. Continued resourcing of Knowledge Transfer Ireland and programmes that support knowledge transfer (eg TTSI) are imperative to ensuring continued innovation in the system.

Supports should also be extended to increase the capacity of the third level sector to engage in knowledge transfer activities as it is currently capacity constrained. The growth of industrial partnerships with HEIs has generated additional complexities and workload in managing partnerships, legal agreements, business development and training researchers in innovation and entrepreneurship. Business engagement functions need to be established and resourced to deal with greater demand for industry collaboration and partnership.

Wider R&D context

While each region has areas of strength, research opportunities and collaborations transcend borders with greater potential for an all-island approach. Partnerships within and across regions (such as the Atlantic Economic Corridor) provide a strong network upon which greater connectivity and advantage can be built. Ensuring autonomy and self-determination of an institution's research agenda is important for an engaged, vibrant research ecosystem. While a region may have a particular focus from a collective industry perspective, a smart specialisation approach to the regions may risk of hindering future innovation and ultimately reducing a regions competitiveness.

The strategy should also consider the value of balanced regional development with research at the heart of that ecosystem providing a catalyst for invention, innovation and new talent development. Connecting the ambition of research agendas with other strategies, for example DFHERIS Research and Innovation strategy, climate as well as housing and transport is vital to ensure key social and economic enablers keep pace with the growth and developments in research. Regional connectivity is fundamental to any agenda for balanced regional growth. Without that connection there is risk to research capabilities and capacities and by extension, the competitiveness of a region and Ireland.

A rectangular image showing a handwritten signature in dark ink on a light-colored background. The signature appears to read "Norelee Kennedy".

Prof Norelee Kennedy,
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