

**Call for Evidence: A Review of Coherent Provision and Sustainability in Further and Higher Education**



**Submission from The Scottish Informatics and Computer Science Alliance (SICSA)**

10th August 2020

**Introduction**

SICSA promotes international excellence in University-led research, education, and knowledge exchange for Scottish Informatics and Computer Science. We are an SFC-funded Research Pool comprising all 14 Scottish Higher Education Computer Science & Informatics Schools and Departments. Responding to the request for evidence, we focus on the role of pooling as an established model for collaboration that enables member institutions to retain their distinctiveness.

**a) What do you think works well in the current further and higher education arrangements that we should keep in order to secure Scotland's inclusive social and economic recovery from the current pandemic? How can we best preserve and strengthen those features of education, research and innovation in Scotland that we most prize, in a very challenging funding environment?**

Pooling has developed a culture of collaboration for research and cooperation across disciplines within Scottish HE. This has been done without the loss of autonomy and distinctiveness for individual institutions. Pooling mechanisms therefore engender trust between HE institutions that would otherwise compete, enabling members to respond flexibly to new funding calls and opportunities. The recent Heathwaite review demonstrated the impact of pooling across a number of disciplines, in terms of research outputs and performance. In the case of SICSA, for example, pooling supported the 14 member institutions to attract £317m of research income, or 18% of the UK total and second only to the South East of England.

Much of the current structure of pooling is relatively low cost, providing grass roots mechanisms that stimulate collaboration across institutions and disciplines. In addition, funding is used to support pooling of research training activity, particularly for graduate students and ECRs where lack of critical mass in single institutions would be unviable. An additional benefit of pooled research training is the growth of inter-institutional networks of researchers, either delivering or receiving the content.

Earlier phases of pooling funding provided additional mechanisms for strengthening inter-institution collaboration, particular the graduate academy programmes which both stimulated research activity through graduate scholarships and enhanced collaboration through joint supervision mechanisms. We believe SFC should take steps to ensure that the trust relationships that have been created through disciplinary pooling are protected and sustained as a means of supporting collaboration and cooperation across HE institutions in the future.

**b) What do you think colleges, universities and specialist institutions should stop doing, or do differently, in order to contribute effectively to an inclusive social and economic recovery? (You may wish to comment on teaching and skills development, sectoral and employer needs and employability, research, innovation and knowledge exchange, widening access and equalities issues.)**

Autonomy is a founding principle for higher education institutions, ensuring that each organisation has the the freedom to experiment and explore new ideas and approaches as they sit, and develop distinctive strengths and identifies. However, research pooling has demonstrated the potential for collaboration where critical mass may not reside in any single institution. Further, pooling has demonstrated that these collaboration mechanisms can be successfully employed for education and training, particularly covering specialist topics. SFC should therefore consider how pooling might be extended to other aspects of HE activity such as knowledge exchange and education in a way that would strengthen the capabilities of individual institutions.

**c) How can colleges, universities and specialist institutions best support Scotland's international connectedness and competitiveness in the postpandemic, post-EU membership environment?**

Individual HE institutions, Universities Scotland and research pools are natural points of connection with international networks through the development of global research collaborations. These can be very informal, through academic conferences or more structured, such as EU funding mechanisms. HE organisations also engage with Scotland's internationalisation mechanisms, such as Scottish Development International and Scotland Is Now, where possible supporting inward investment visits. There is general consensus that the availability of talent pipelines and engagement from HE is a key factor for potential investors when judging where to locate new sites. The SICSA Director for Knowledge Exchange, for example, will facilitate one-to-one meetings with researchers in specialist areas relevant to an investor - frequent topics of enquiry concern AI, data science, cyber security and software engineering. However, research pools lack the capability to respond to these requests on a routine basis. There is a need for additional capability to support inward investment and engagement in international collaboration networks so that these processes can be systematised.

**d) What opportunities and threats does the post-pandemic environment hold for colleges, universities and specialist institutions? For institutional leaders, how are you planning to address these challenges and opportunities?**

We anticipate that many of the threats to higher education will be well understood by SFC, such as loss of funding from tuition fees and disruption to research projects and collaborations. Individual HE institutions can speak to these threats more directly. SICSA as a research pool will continue to build on its remit to foster cross-institutional collaboration within the resources available. For example, we launched a remote collaborations call in May to enable researches to access additional resources to facilitate collaboration remotely.

**e) What forms of collaboration within the tertiary education eco-system would best enable a coherent and effective response to these challenges and opportunities?**

As already noted, pooling has been demonstrated to be a successful model for enabling inter-institutional collaboration that strengthens research capability within Scotland without impacting individual autonomy and distinctiveness. There is an opportunity to augment existing pooling activity through:

- Extension of pooling across disciplines, building an interdisciplinary research pool that can respond flexibly to research challenges at scale. Such a research pool can build upon existing disciplinary research pool activity whilst creating mechanisms for inter-disciplinary research collaboration.
- Expanding research pooling capability for engagement with other partners. In the case of SICSA, there is significant appetite within HE to engage with industry, however, as a pool we lack the resources to do this at scale. Examples of successful collaboration with industry include the graduate apprenticeships programme and Datalab part-funded Data Science MSc internships.
- Extending the remit of pooling mechanisms beyond research into education and training where appropriate. Each individual academic institution will rightly wish to retain its autonomy and distinctiveness. However, there are potential areas of common interest where it makes sense to pursue cross-institutional delivery. For example, technology startup training is delivered in a variety of forms alongside mainstream Computing Science curricula across Scotland. There is an opportunity to develop a more comprehensive training programme in this area that leverages individual institutional strengths across Scotland.

**f) How can SFC, alongside government and other enterprise, skills and education-focused agencies, best support colleges, universities and specialist institutions to make their full contribution to Scotland's inclusive, green and education-led recovery?**

There is an opportunity for SFC to set out a roadmap to a more ambitious form of pooling that reaches across disciplines and beyond research activity. A Scottish HE Pool or Interdisciplinary Institute would require some significant investment to ensure critical mass and sustainability. This funding could be used to directly drive collaborations focused on research challenges that supported a green economic recovery following the pandemic. Further SFC should consider using funding to ease engagement with international research investment instruments.