**Written evidence submitted by the RSE Young Academy of Scotland
(USC0006)**

The Universities and Scotland Inquiry

ORGANISATION

The Young Academy of Scotland (YAS)[1] was established by the Royal Society of Edinburgh[2] (RSE) in 2011 to provide a platform for innovative young professionals from all areas of academia, business, third sector organisations and public life, to address the most challenging issues facing society in Scotland and beyond - we respond to this inquiry in this capacity. Our greatest strength is our membership; drawn from a wide range of professional backgrounds representing communities from all over Scotland. With access to resources and expertise across different sectors, we are uniquely positioned to research and tackle complex problems. Our mission is to help Scotland's people and policy-makers build a future that is equal, enterprising, sustainable, healthy, smart and international.

Together with the RSE, YAS is running a project on Tertiary Education Futures[3] in Scotland. This project aims to amplify the oft-neglected voices of practitioners (lecturers, teachers, researchers) in discussions and consultations about the future of tertiary education (TE). Their work at the frontlines of education gives them unique insights into the challenges and opportunities which lie ahead.

CURRENT UK POLICIES - IMPACT ON UNIVERSITIES AND THEIR SERVICE TO SCOTLAND AND SCOTTISH COMMUNITIES

The UK government is pushing marketisation of HE, however increased marketisation adds to the existing risks to the sector[4]: student recruitment, reduction in research income, student and staff experience and business continuity. Government policies related to universities and innovation may directly impact on recruitment (Brexit, visa regulations, cost of immigration), attractiveness of Scottish universities as a destination for students and staff (graduate employment prospects, responsiveness to new climate and challenges), reputation, as well as investment and growth in the region (e.g. business investment, EU investment).

In the disruptive (yet transformative) era of the 'digital' university'[5] investment is needed to safeguard the equitable access of HE for all, maintain standards across the UK HE institutes and to remain globally competitive. The challenges of post-Brexit immigration policies to non-UK student numbers and consequences of deficits as a result of the pandemic have been faced by all HEIs, however the resources available to each HEI will differ considerably in line with current funding model allocations[6] in Scotland and eligibility for UK government support[7].

[1] https://www.youngacademyofscotland.org.uk/

[2] https://www.rse.org.uk/

[3] Tertiary Education Futures: What is Higher Education For? M. Dornelas, September 2020
https://www.youngacademyofscotland.org.uk/blog/tertiary-education-futures-what-is-higher-education-for/

[4] Managing Risk in Higher Education Higher Education Sector Risk Profile 2019. PricewaterhouseCoopers LLP.
https://www.pwc.co.uk/government-public-sector/education/documents/higher-education-sector-risk-profile-2019.pdf

[5] Transforming Higher Education – The Digital University. PricewaterhouseCoopers LLP. 2020 https://www.pwc.co.uk/government-public-sector/education/assets/transforming-higher-education.pdf

[6] Scottish Funding Council. http://www.sfc.ac.uk/funding/funding.aspx

[7] University research support package explanation notes. Published June 2020. Department for Business, Energy & Industrial Strategy. Gov.UK.
https://www.gov.uk/government/publications/support-for-university-research-and-innovation-during-coronavirus-covid-19/university-research-support-package-explanatory-notes

Brexit and Immigration

With a population growth rate below 1%, and large poorly populated areas, Scotland's industries rely upon an influx of non-Scottish born people across all sectors, from hospitality to health and education. Scottish geographic areas experiencing depopulation include rural communities, island communities as well as areas in the West of Scotland[8]. With deaths exceeding births, Scotland needs a tailored immigration approach[9], ensuring skilled workers in the business and public sector and continued contributions to the local culture and heritage of Scottish communities, in turn enhancing the international profile of Scotland (visibility, reputation, trust, desirability).

Scotland has a high proportion of international students relative to other OECD countries, with the net economic impact of international students for Scotland estimated at £1.94bn in 2016[10]. Overall university income from Non-EU and EU student international fees are projected to be reduced by £752m[11]; 19% of the sector's total income. UCAS reports a 16% increase in non-EU applications in Scottish HEIs[12], however sustaining these levels in the long-term will be challenging with any immigration policy changes implemented post-Brexit[13]. The UK Government recently applied a recruitment cap on English students[14] entering devolved administration HEIs; assuming a 1.5% growth and limits to only recruiting another 5% of students from England. Reduced student cohort quotas go beyond student numbers to impact the learning environment diversity provided by HEIs.

Universities in Scotland play a critical role in attracting a diverse staff (with ~23% non-UK staff in Scottish universities in 2018-19, up from ~19% in 2014-15) and students (~22% non-UK in 2017-18) - of whom approximately a third remain in the UK workforce after graduation[15]. Students from outside of the UK have a significant impact on the Scottish HE sector and the wider economy, and drive the sustainability of some programs of study - e.g. making up more than half the enrolment in some postgraduate programs[16]. Recruitment of these students ensures that courses remain viable and open for local students - enabling a broader skill-base development, employability, and opportunities for graduates.

Maintaining schemes for exchanges between the UK and the world are essential to achieve goals of diversity, openness, enhanced culture. Over the last three decades, over 10 million people have participated in Erasmus+ or its predecessor programmes. Around 1 in 3

---

[8] Migration: helping Scotland prosper - Annex B: Scotland's distinct population and migration needs, p9. By Cabinet Secretary for Economy, Fair Work and Culture, January 2020. ISBN: 9781839603150. https://www.gov.scot/publications/migration-helping-scotland-prosper/pages/9/

[9] Migration: helping Scotland prosper - Next Steps, p7. By Cabinet Secretary for Economy, Fair Work and Culture, January 2020. ISBN: 9781839603150 https://www.gov.scot/publications/migration-helping-scotland-prosper/pages/7/

[10] International Facts and Figures 2019, Universities UK International
https://www.universitiesuk.ac.uk/International/Documents/2019/International%20facts%20and%20figures%20slides.pdf

[11] Combined impact of the Covid-19 Pandemic and Brexit on Scotland's University Research Base. By Richard Lochhead, July 2020 https://www.gov.scot/binaries/content/documents/govscot/publications/foi-eir-release/2020/10/foi-202000083493/documents/foi-202000083493---information-released/foi-202000083493---information-released/govscot%3Adocument/FoI-202000083493%2B-%2BInformation%2Breleased.pdf

[12] Update on HE and FE support: Scottish Government. July 2020. https://www.gov.scot/news/gbp-5m-to-help-disadvantaged-students/

[13] SCOTTISH FUTURES Immigration Policy in Scotland after Brexit. By Russell Hargrave & Fragomen LLP, March 2020 https://www.fragomen.com/file/scottishfuturespdf

[14] Universities and College Union, Protecting jobs in higher education in Scotland from the impact of Covid-19, June 2020. https://www.ucu.org.uk/media/10974/Protecting-jobs-in-HE-in-Scotland-from-the-impact-of-Covid-19/pdf/ucu_covid19_he_protectingjobsinscotland.pdf

[15] Higher Education Student Statistics: UK, 2017/18 - Where students come from and go to study. HESA, January 2019 https://www.hesa.ac.uk/news/17-01-2019/sb252-higher-education-student-statistics/location

[16] The Impact of International Students in Scotland. Scottish Government response to the Migration Advisory Committee. March 2018 https://www.gov.scot/binaries/content/documents/govscot/publications/corporate-report/2018/03/impact-international-students-scotland-scottish-government-response-migration-advisory-committees/documents/00532586-pdf/00532586-pdf/govscot%3Adocument/00532586.pdf

Erasmus+ trainees are offered a position by the company they trained in. In 2016, 1,600 Scottish staff and students visited European countries on study, training or volunteering visits[17], with the programme making study abroad opportunities affordable and inclusive, developing the attributes of Scottish global graduates and creating a new brand of ambassadorship. Between 2014 and 2018, Scottish participants comprised 12% of the total UK figure, with Scotland receiving 13% of total Erasmus+ funding in the UK[18]. Less advantaged students benefit tremendously from periods abroad (1 in 3 youth mobility participants comes from a disadvantaged background[19]) and Erasmus+ is committed to supporting widening participation in HE mobility[20]. Loss of Erasmus+ will damage outward mobility opportunities for Scottish students.

Graduates from Scottish HE providers contribute directly to the visibility of UK and Scottish education globally, with 3% of graduates in 2015/16 working abroad, in 100 of the world's 195 countries (compared to 2.5% of UK graduates)[21] and STEM graduates represented ~39% of those working abroad (compared to ~34% for all UK graduates). However, the impact of UK immigration policy and its perception abroad is already visible with declining numbers of incoming students from particular nations - e.g. 58% reduction in students from India between 2010/11 and 2016/17[22]. With a wide range of destinations available on the international education market, Scotland and the UK HEIs face competition[23] by providers in Australia, Canada, the United States, as well as EU countries developing teaching and research provision with English as the main delivery language. With culture and lifestyle key aspects identified as attractors for international students, it is essential that policies do not damage aspects of life in the UK that are a selling point for applicants. The long-term effect of brand damage cannot be overstated, since 22% of prospective students consider their destination of choice for international study at least 2-years in advance[24].

Recruitment and retention of an innovative, multi-cultural workforce is essential for research, development, up-skilling and competitiveness of local communities. An influx of skilled people has enabled technological and cultural progress which has been effectively captured in innovation hubs across the UK, focusing on collaboration and exchange, as well as the culture strategy for Scotland[25]. Scotland's researchers are highly mobile, publishing extensively outside Scotland (89% vs UK 72%) through high impact collaborations: in fact, between 1996 and 2016, ~57% of the research base was "transitory" (having spent up to 2yrs abroad), achieving greatest productivity and impact through citations[26].

[17] EU Exit and Scottish Colleges and Universities. SRC Corporate Publication. Reference SFC/CP/01/2018. December 2018. http://www.sfc.ac.uk/web/FILES/corporatepublications_sfccp012018/SFCCP012018_EU_Exit_and_Scottish_colleges_and_universities.pdf

[18] Erasmus+ 1st Report, 2018 (Session 5), Culture, Tourism, Europe and External Relations Committee. The Scottish Parliament https://sp-bpr-en-prod-cdnep.azureedge.net/published/CTEERC/2018/3/14/Erasmus-/CTEERS052018R1.pdf

[19] Erasmus+ Annual Report 2018 overview factsheet, Years: 2020. European Commission https://ec.europa.eu/programmes/erasmus-plus/resources/documents/erasmus-annual-report-2018-overview-factsheet_en

[20] Supporting wider participation in higher education mobility, May 2020. Erasmus+ https://www.erasmusplus.org.uk/blog/supporting-wider-participation-in-higher-education-mobility

[21] Recent Graduates of Universities in Scotland now Working in 100 Countries. HESA https://www.hesa.ac.uk/news/scotland-graduates

[22] The Impact of International Students in Scotland. Scottish Government response to the Migration Advisory Committee's consultation on the impact of international students in the UK. Page 20. March 2018 https://www.gov.scot/binaries/content/documents/govscot/publications/corporate-report/2018/03/impact-international-students-scotland-scottish-government-response-migration-advisory-committees/documents/00532586-pdf/00532586-pdf/govscot%3Adocument/00532586.pdf

[23] The Customer Journey of International students in the UK; Summary of research among new IHE students in the UK prepared for The British Council, the GREAT Britain campaign and participating HEIs. IHE Customer Journey: HEI Report 030615. In2Impact and Research Stories. https://www.researchstories.co.uk/wp-content/uploads/2015/07/IHE-Customer-Journey-Headline-Report-2015.pdf

[24] The Customer Journey of International students in the UK; Summary of research among new IHE students in the UK prepared for The British Council, the GREAT Britain campaign and participating HEIs https://www.researchstories.co.uk/wp-content/uploads/2015/07/IHE-Customer-Journey-Headline-Report-2015.pdf

[25] Scottish Government, "A Culture Strategy for Scotland" Published: 28 Feb 2020 https://www.gov.scot/publications/culture-strategy-scotland/pages/4/

[26] Scottish Science Advisory Council, A Metrics-Based Assessment of Scotland's Science Landscape 2007-2016

Local Communities and Widening Participation

The goal of the Commission on Widening Access[27] is to have students from the 20% most deprived areas make up 20% of the higher education population in Scotland by 2030. An important part of this widening access agenda is to support the post-92 university sector which is not as developed in Scotland (8 out of 18 universities) compared to England, but was the HE destination of ~44% of Scottish-domiciled students[28]. A survey in 2015 of 16,600 18-19 year old UK domiciled UCAS Undergraduate applicants revealed that among disadvantaged applicants, 22% of respondents did not want to move away from home[29]. Specific universities were also ruled out because of cost; particularly for Scottish applicants, who said that they could not afford to leave their home country.

The UK Government has established a HE Restructuring Regime committee[30] in response to Covid-19, with one of the measures for stabilisation including potential merging of institutions or closure of 'non-viable' campuses. These measures do not favour HE providers that serve Scottish island or rural communities and would be damaging to widening participation due to loss of local HE access. Mergers may lead to course closures as reduced recruitment and economies of scale will make organisations focus on the current demand for vocational training and not in the diversification and development of new skills that will transform and foster local industries in the face of new emerging challenges (e.g the decline of leisure studies programmes[31]). Many of the criteria for HEI restructuring considerations rely upon 'excellence framework' metrics and rankings. Although there is a UK forum for responsible metrics use[32], justifications for reshaping the HEI landscape on a cost basis must look beyond these metrics and assess the long-term damage of removal of any provision to the local communities affected. The growing tendency to value HE and TE purely in economic terms (e.g. based on league tables, average graduate earnings) is short-sighted and damaging to morale of staff and students across the sector.

OPPORTUNITIES TO FOSTER DIVERSITY, EQUITY, TRANSPARENCY AND SUSTAINABILITY FOR INNOVATION

The imposition of dated business models[33] has dramatically increased bureaucracy while reducing our appetite for risk, and slowing innovation down. The shift toward non-academic governance has had a direct impact on satisfaction (<11%) of academic staff with their senior management, articulated under seven themes[34]: dominance and brutality of metrics; excessive workload; governance and accountability; perpetual change; vanity projects; the silenced academic; work and mental health.

---

https://www.scottishscience.org.uk/sites/default/files/article-attachments/Scotland%27s%20Science%20Landscape%20Short%20Report.pdf

[27] Working to Widen Access, Universities Scotland, November 2017 https://www.universities-scotland.ac.uk/wp-content/uploads/2019/02/Working-to-Widen-Access.pdf

[28] Higher Education Student Statistics: UK, 2018/19 - Where students come from and go to study. January 2020. HESA. Statistical Bulletin SB255.
https://www.hesa.ac.uk/news/16-01-2020/sb255-higher-education-student-statistics/location

[29] Through the lens of students: how perceptions of higher education influence applicants' choices, UCAS July 2016 https://www.ucas.com/file/70776/download?token=Y0R-kzLM

[30] Establishment of a Higher Education Restructuring Regime in Response to COVID-19. Department of Education, July 2020 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/902608/HERR_announcement_July_2020.pdf

[31] Fletcher, T., Carnicelli, S., Lawrence, S., & Snape, R. (2017). Reclaiming the 'L'word: Leisure Studies and UK Higher Education in neoliberal times. Leisure studies, 36(2), 293-304. https://www.tandfonline.com/doi/abs/10.1080/02614367.2016.1261182

[32] The UK Forum for Responsible Research Metrics. Universities UK https://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/forum-for-responsible-research-metrics.aspx

[33] Rethinking the undergraduate business model. Times Higher Education (THE). By Robert MacIntosh, July 2018 https://www.timeshighereducation.com/blog/rethinking-undergraduate-business-model.

[34] Erickson, M., Hanna, P., & Walker, C. (2020). The UK higher education senior management survey: a statactivist response to managerialist governance. Studies in Higher Education, 1-18. https://www.tandfonline.com/doi/full/10.1080/03075079.2020.1712693

With the reinvention of students as 'customers' and the courting of a wide range of international markets, staff have found themselves wrestling not only with increasingly high workloads but also with worrying erosion of their academic freedom[35]. This includes the impact of political and cultural beliefs on perception of university staff inside and outside of the classroom and the need to redefine academic expertise and scope of practice in line with research strategies and funders priorities. Funders' emphasis on impact agenda and institutional valuation of income detracts from the value of academic research[36]. Research strategies can overlook country-specific / local priorities. This calls for better, clearer integration of structures with regional, national and international priorities. Indeed Scotland-specific priorities (e.g. ruralness and remoteness, ageing active population, skill gaps in emerging technologies) are poorly catered for in UK-wide strategies.

Financial competition between institutions may drive positive change, but it also encourages institutional protectionism and can limit resource and expertise-sharing: the very things that progress learning and collaboration. Collaboration brings the opportunity to redefine success and the over-use of metrics that contribute to poor early career researcher job security, and the spiraling workloads of mid-career and senior academics. The first opportunity is to develop policies and funding opportunities to transition from competition to collaboration, establishing new rules for work at the interfaces between fields, practices, and businesses. The Grand Challenge approach adopted by the government[37], as well as the Young Academy of Scotland[38], can drive interdisciplinarity and relate research to broader social agendas. Building on Scotland's strengths and opportunities, the Muscatelli Report [39] sets key recommendations: for the innovation agenda to become a national mission delivered collaboratively by universities, industry, government and organisations, focusing on increased agency by all stakeholders, following principles of transparency and clarity.

Funding allocation

The value for money provided by Scottish research is high[40]: with 10% of the UK researcher population producing 12% of the UK research outputs in 2015. The high productivity of Scottish research is demonstrated with an average of 8.54 publication per £million expenditure (compared to 4.81 for England in 2016), with average citation per researcher ~63% greater than the UK average - highlighting the scope for further investment in the region, especially in the context of increasing global competition in research.

Support for business-led innovation remains low[41], with only ~4% of the total Innovate UK budget allocated to Scotland in 2017-18, and the funding per business claiming R&D tax credit approximating 80% of the UK average. Regional Gross Expenditure on R&D (GERD) and Business Enterprise R&D (BERD) are highest in London, the South East and East of England (combined 52% versus Scotland 7% for GERD, and 53% versus Scotland 5% for BERD). R&D density in London and the South East explains this skew in distribution, and also highlights the

[35] Academic freedom in the UK; Protecting viewpoint diversity. Policy Exchange 2020 https://policyexchange.org.uk/wp-content/uploads/Academic-freedom-in-the-UK.pdf

[36] Grove, Lynda (2017) The effects of funding policies on academic research. Doctoral thesis, University College London. http://eprints.lse.ac.uk/88207/1/Grove_Thesis_2017.pdf

[37] Policy paper The Grand Challenges; Department for Business, Energy and Industrial Strategy, Updated 13 September 2019 https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges

[38] https://www.youngacademyofscotland.org.uk/our-work/grand-challenges/

[39] THE MUSCATELLI REPORT; Driving Innovation in Scotland – A National Mission, Muscatelli A. November 2019 https://www.gla.ac.uk/media/Media_700300_smxx.pdf

[40] Scottish Science Advisory Council, A Metrics-Based Assessment of Scotland's Science Landscape 2007-2016 https://www.scottishscience.org.uk/sites/default/files/article-attachments/Scotland%27s%20Science%20Landscape%20Short%20Report.pdf

[41] Regional distribution of funding for research and business. UKRI https://www.ukri.org/funding/funding-data/regional-distribution-of-funding-for-research-and-business/

lack of investment in larger, underserved areas. Scotland emerges as an area which has not received the support it deserves, with historically poor success in Industrial Strategy Challenge Funds. This highlights a need to develop the Scottish expertise to secure funds which are essential to drive local innovation, competitiveness, and attract skills to the area. Increasing regional BERD capacity to work in collaboration with HE R&D is essential to ensure that the university sector in Scotland contributes to innovation, responds to industry needs and leads teaching innovation to develop the skills required regionally, nationally and internationally.

The UK research funding model relies on time and intellectual investments, which is at odds with increasing workloads and time scarcity experienced across the HE sector. Research funding allocated by UKRI also appears biased by gender, ethnicity and age[42]; funding success rates are systematically lower for women; in engineering and physical sciences, the gap deepens as grants get larger, with the difference in success rates even greater (over 10%) between white and black and other minority ethnic groups investigators[43]. This is a particular threat for Scottish Universities, when funding diversity and inclusivity is essential to foster innovation, growth and sustainability and attract and retain a diverse talent base.

The current funding model is unlikely to provide actual value for money: every fundable idea that goes unfunded is a missed opportunity in a finite funding landscape. Whether the system is set to enable the fair, unbiased assessment of genuine (collaborative) innovation responding to regional or inter-disciplinary drivers is also unclear.

Processes in place that still enable biased, unbalanced or over-conservative allocation of funds need to be revised. An opportunity to react and pivot, adopting measures that will leverage the innovative potential of all researchers is needed. A fairer distribution of research funds calls for new allocation methods focusing on (modified) lotteries for projects identified as fundable, ending the concept of non-resubmission of fundable non-funded bids, and paying attention to the equitable spread of funds between researchers and units.

Egalitarian share of research funds has been shown to be feasible[44] while eliminating the *Matthew effect* at play (allocation of majority of funds to a known, already-funded minority). The approach, implemented by the Health Research Council of New Zealand (HRC) in their Explorer Grant fund, relies on randomised funding allocation, to address the challenge of high-quality, high-risk research that would often go unfunded due to budgetary constraints and conservativeness of the allocation panels. A fair and transparent solution to distribute funding between equally qualified applicants, the HRC modified lottery system gained approval of researchers (63% of interviewed researchers for Explorer Grants)[45].

REFRAMING POLICIES: REIMAGINING THE UNIVERSITY AND HOW IT IS PORTRAYED

Universities should be seen as a vector for public good, reducing social inequalities and fostering responsible debate, dissemination of experience and expertise, and innovation. However, education has become an instrument for economic progress moving away from its original role to provide context for human development. This narrow re-imagining of the social value of HE both stems from and contributes to another major challenge: the growing disconnect between HE, research and society. As a result, education, as a commodity,

[42] Diversity results for UKRI funding data 2014-15 to 2018-19, UK Research and Innovation, 2020 https://www.ukri.org/files/about/ukri-diversity-report/

[43] Understanding our portfolio - A gender perspective. Engineering and Physical Science Research Council, 2020. https://epsrc.ukri.org/files/aboutus/epsrcunderstandingourportfolio-agenderperspectivereport/

[44] Vaesen, K., & Katzav, J. (2017). How much would each researcher receive if competitive government research funding were distributed equally among researchers?. PLoS One, 12(9), e0183967. https://doi.org/10.1371/journal.pone.0183967

[45] Liu, M., Choy, V., Clarke, P., Barnett, A., Blakely, T., & Pomeroy, L. (2020). The acceptability of using a lottery to allocate research funding: a survey of applicants. Research integrity and peer review, 5(1), 3. https://researchintegrityjournal.biomedcentral.com/articles/10.1186/s41073-019-0089-z

becomes expensive despite policies directed towards openness and widened participation. In practice, few have the finances to afford it[46].

There is a need and opportunity for policy-making that redefines the role of the university in the context of contributing to national missions and Grand Challenges. A particular example is rethinking education for the data society: building more on care, creativity and collective action, with goals of finding ways for humans to thrive with technology, not be replaced by it. Recognising that automation will create a situation where workers need higher cognitive skills, HEIs need to be supported to become more flexible in meeting that need, linking with best practice and innovative models anticipating future skills needs. CodeClan[47] is a good example of what universities could have done, and should be doing - collaboratively.

There is scope for policies to place universities as a host for the new wave of crowd created content (moving school assessment away from 'tasks' and towards the creation of knowledge through citizen science), rewarding collaboration and provision of interdisciplinary solutions to complex challenges with direct impact on local and global communities.

Report drafted for the RSE Young Academy of Scotland by Margaret Cunningham and Emilie Combet, with input from *Peter McColl, Jessica Enright, Caroline Gauchotte-Lindsay, Sandro Carnicelli, Alice König, Kitty Meeks, Allison Jackson, Maria Dornelas and Morven Chisholm*

October 2020

---

[46] Kromydas, T. (2017). Rethinking higher education and its relationship with social inequalities: past knowledge, present state and future potential. Palgrave Communications, 3(1), 1-12. https://www.nature.com/articles/s41599-017-0001-8

[47] https://codeclan.com/