Association of Higher Education Careers Services

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Postgraduate Research Students
Task Group

# An Exploration of Career & Skills Development among Arts Humanities & Social Science (AHSS) Postgraduate Research Students in Ireland

May 2020

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# Association of Irish Careers Services (AHECS) Postgraduate Research Students Task Group

## An Exploration of Career & Skills Development among Arts Humanities & Social Science (AHSS) Postgraduate Research Students in Ireland

**May 2020**

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# Executive Summary

This paper provides a snapshot of Funding, Motivations, Career Aspirations and Development Opportunities of Postgraduate Research Students (PGRs) in Irish Higher Education Institutions (HEIs). Survey responses from Arts & Humanities, Social Science, Journalism and Information, Business Administration and Law (AHSS) were compared to those of Science, Technology, Engineering and Mathematics (STEM) PGRs. The Postgraduate Research Student Task Group of AHECS examined anonymized data from *The Irish Survey of Student Engagement for Postgraduate Research Students National Report 2019* (PGR StudentSurvey.ie) through the prism of career and skills development.

Significant differences were noted between the AHSS and STEM cohorts relating to motivation, funding, teamworking and career aspirations. AHSS PGRs are more likely to be self-funded, motivated by passion for their subject, aspire to an academic career and report less opportunity for teamworking than their STEM counterparts. However, it was noted that the percentage of **all** PGRs taking part in an internship, who have experience in technology transfer or have availed of careers advice was low.

The task group envisages that the observations in this report will inform policy decisions leading to timely career interventions for all PGRs and raising awareness, particularly among AHSS PGRs, of the national and international career prospects beyond graduation. In addition, the findings may influence stakeholders in AHSS researcher education to look, through additional funding and/or creative re-configuration of programmes, to build more development opportunities, particularly teamwork into the AHSS research experience.

# Introduction

Strategic investment by the Irish Government in applied research and development has been central to Ireland's economic growth and development. Major funding initiatives have led to an increased number of PGRs over the past two decades. Central Statistics Office (2016) data show a 31% rise of doctoral graduates since 2011, and 99% since 2006. In terms of employment, according to the HEA (2016) 20% - 30% of graduates with a PhD will work in academia (including postdoctoral positions) and the majority of PGRs will work in industrial or public sector environments (Neumann & Tan 2011). The delivery of doctoral education in Irish HEIs (Nerad et al 2014) has been moving towards a more structured model incorporating skills development. This transformation of doctoral education combines research specific expertise with professional skills training to increase cross-sectoral mobility. The Postgraduate Research Task Group (from DCU, NUIG, MU, Trinity, UCC, UCD, UL) questioned if the significant concentration on STEM research over the past twenty years, has led to a different research experience for AHSS PGRs. The task group analysed the relevant sections of the 2019 PGR StudentSurvey.ie to address possible differences between the two cohorts.

## Aims and Objectives

The aim of this study was to understand more fully the experiences and perceptions of AHSS PGRs and compare them to the experiences and perceptions of STEM PGRs. The research also aimed to address how the training provided to AHSS PGRs may need to be highlighted or re-configured. The objectives were to inform best practice in professional skills training and development and influence policy decisions in HEIs which support the employability of AHSS PGRs.

## Data Source

**Table 1: Fields of Study**

| AHSS<br>N=2828 | STEM<br>N=6286 |
|---|---|
| • Arts & Humanities<br>• Social Sciences, Journalism and Information<br>• Business Administration & Law | • Natural Sciences, Mathematics & Statistics<br>• Information & Communication Technologies (ICTs)<br>• Engineering Manufacturing & Construction<br>• Agriculture, Forestry, Fisheries & Veterinary<br>• Health & Welfare<br>• Education* |

**Education was not included in the Cohorts of Interest (AHSS): the hypothesis being that Professional Doctoral students in education may already be in employment and/or studying part-time and less likely to seek career advice*

The underlying data in this report originate in the 2019 PGR StudentSurvey.ie. which surveyed the overall education experience of all postgraduate research students from 22 Irish HEIs (See Pages 17-37 of the PGR StudentSurvey.ie 2019 for further details). The 2019 PGR StudentSurvey.ie followed a 2018 pilot study: together they represent snapshots of students' engagement with their HEI at two fixed points in time. The Task Group closely examined the anonymized data sets. There was very little difference in outcomes between the two surveys, as both dealt with largely the same group of students within a short time span. The Task Group, therefore, decided to focus on the 2019 data set, which had an overall response rate of 29.9%. The first step was to focus on responses which have direct relevance to the funding motivations and development opportunities of all PGRs. This was followed by analysis and quantification of the differences between AHSS and STEM. In addition, the report serves as a benchmark for future Irish Surveys of Student Engagement for Postgraduate Research Students National Reports, which, going forward, will be biennial with the next one scheduled for 2021. The results of the study are outlined below.

# Results and Analysis

## *Funding, Motivations and Career Aspirations*

On close examination of the raw data, significant differences appear between AHSS and STEM cohorts in relation to:

- Funding
- Motivation: Interest in subject
- Career Aspirations

**Table 2: Funding and Motivation**

| **Percentage differences in:** | **AHSS (%)** | **STEM (%)** |
|---|---|---|
| Funding*<br>• Scholarship<br>• Scholarship (fees only)<br>• Self-funded<br>• Grant<br>• Employer-funded | <br>55<br>8<br>30<br>7<br>8 | <br>60<br>6<br>13<br>22<br>9 |
| Motivation: Interest in Subject ** | 74 | 64 |
| Career Aspirations<br>• Academic Career in Higher Education (Research & Teaching)<br>• Research Career outside of Academia | <br>71<br>42 | <br>55<br>57 |

** Multiple responses allowed*

*** % calculated as number of responses indicating 1st, 2nd and 3rd priority divided by total number of students*

## Fig 1: Funding

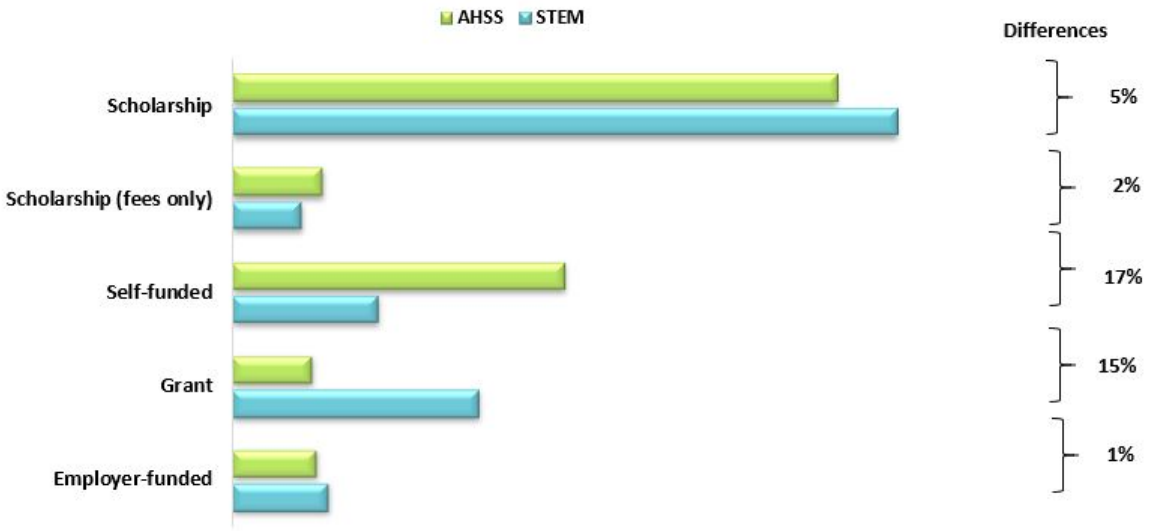



**Table 2 and Fig 1** above**,** indicate funding disparities between AHSS and STEM particularly between the percentage of AHSS and STEM who are self-funded or in receipt of a grant. Possible reasons for the difference could be that since the late 1990s in Ireland large-scale funding awards were directed towards research and development in STEM. These awards led to increased numbers of researcher positions and contributed, either directly or through overheads, to increased budgets for equipment, travel and training.

## Fig 2: Interest in my Subject

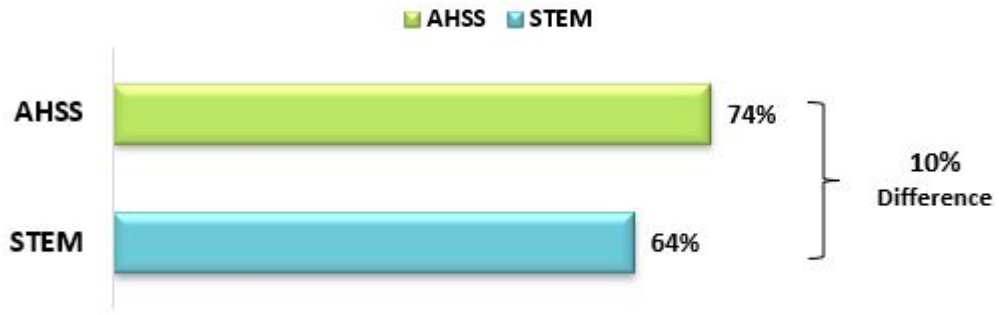



**Table 2 and Fig 2** above, indicate disparities between AHSS and STEM in motivation for embarking on a research degree. AHSS appeared 10% more likely to be motivated by interest in their subject in comparison to their STEM counterparts. A possible reason for the difference is that there are more funded PhD positions, with pre-determined projects, advertised in STEM disciplines. It is possible, that with lower numbers of pre-defined research projects in the AHSS disciplines, there is an expectation that humanities students will conceptualise and lead the research projects. This expectation, along with their self-motivation, may also be linked to higher levels of self-funding as outlined above.

## Fig 3: Career Aspirations

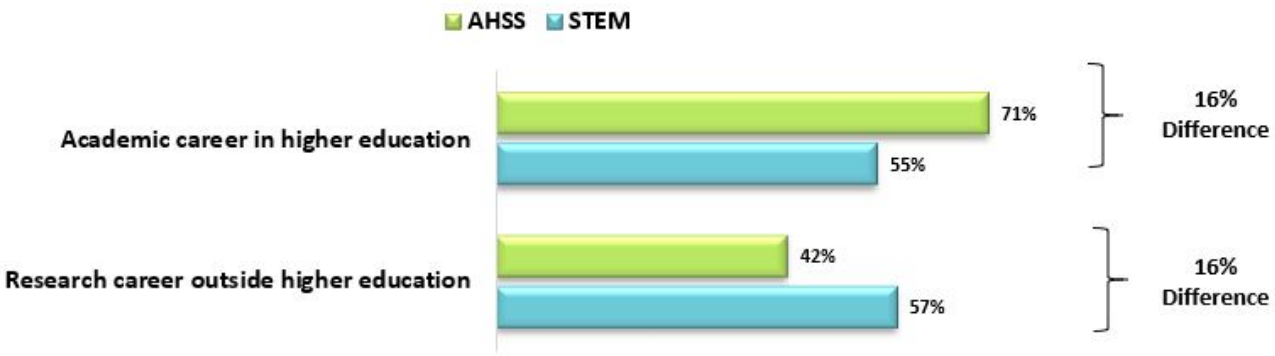



**Table 2 and Fig 3** above, indicate disparities between AHSS and STEM in terms of Career Aspirations. AHSS reported to be 16% more likely than STEM to aspire to an academic career and 15% less likely to look for a research career outside of higher education. Traditionally, students pursued doctorates with the aim of entering academia (Brechelmacher 2015). Schillebeeckx (2013) who studied Biotechnology Doctorates in the USA puts that figure at less than 10%. Irish sources state only 20-30% of those undertaking a doctoral programme will work in academia (HEA 2016). AHSS PGRs may be unaware of these findings. The task group recommends that addressing the careers expectations of all PGRs, particularly AHSS, at an early stage in the doctoral process would be of benefit – ideally at their initial orientation. To support this recommendation *The National Framework for Doctoral Education 2015 (IUA 2015)* agreed to '*ensure for doctoral students that there is clarity as to the structure of their education, training and personal development on enrolment'.*

## Development Opportunities

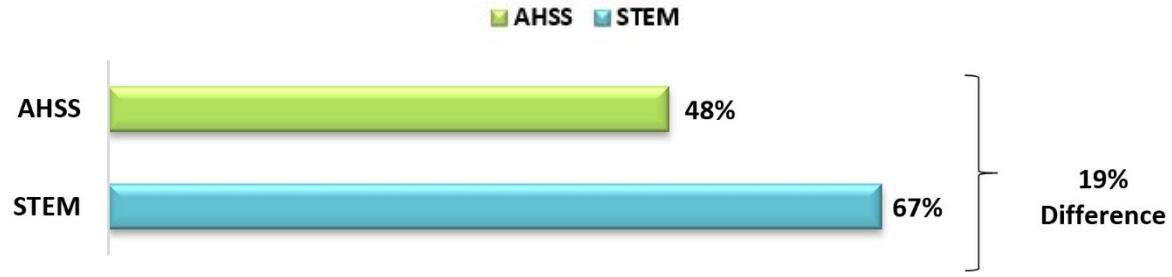
The following was noted in relation to AHSS and STEM

- Working as Part of a Team
- Advice on Career Options
- Taking part in an Internship or Placement
- Putting Training in Entrepreneurship into practice

### Table 3: Development Opportunities

| Percentage differences | AHSS (%) | STEM (%) |
|---|---|---|
| Development Opportunity: Working as Part of a Team | 48 | 67 |
| Development Opportunity: Advice on Career Options | 33 | 30 |
| Development Opportunity: Internship/placement | 12 | 19 |
| Putting Training in Entrepreneurship into practice | 4 | 9 |

## Fig 4: Working as Part of a Team




The Irish Universities Association (IUA) PhD Graduate Skills Statement (2015), which is compatible with the EUA's Salzburg Principles, recognises that PhD education must also facilitate additional development opportunities. These include: *Research Skills & Awareness, Ethics & Social Understanding, Communication Skills, Personal Effectiveness,* ***Team Working*** *& Leadership, Entrepreneurship and Innovation.* **Table 3 and Fig 4** above, indicate disparities between AHSS and STEM with regard to working as part of a team. AHSS PGRs reported to be 19% less likely to be working as part of a team. Possible reasons for the apparent disparity is: (a) that the substantially higher figure for STEM is a perception that is formed from working in a laboratory or institute environment and/or (b) there is a lack of awareness among respondents of teamwork opportunities and the articulation of those skills. Teamwork is cited as a key competency and transferable skill in terms of employability across all sectors. The British Academy in 2017 in its paper *'The Right Skills: Celebrating Skills in the Arts, Humanities and Social Sciences'* states that Humanities doctoral students do not realise how transferable their skills are. The disparity is worth highlighting. The task group recommends that HEIs and stakeholders in AHSS researcher education look, through additional funding and/or creative re-configuration / interpretation of non-academic modules to build more teamwork into the PhD educational experience.

## Fig 5: Advice on Career Options

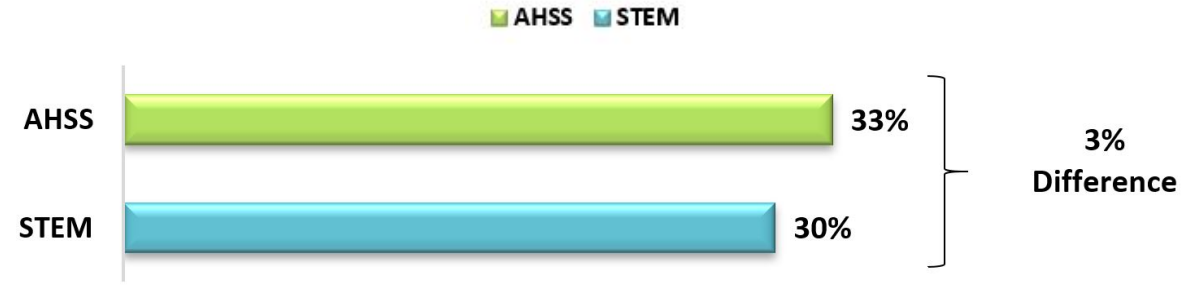



**Table 3 and Fig 5** above, indicate that less than one third of all PGRs are availing of Careers Advice though it is not clear if there is awareness of where to seek advice. This question is not asked in the survey. As noted above in table 1, figure 3, AHSS PGRs are more likely than STEM PGRs to aspire exclusively to a career in academia. European Union More3 (2017) shows that 56% of **all** PGRs study under a single supervisor, 28.9% under a supervisory committee and 15.1% within a doctoral school. The higher percentage (56%) working in what is termed 'the apprenticeship model' (i.e. a single supervisor) may also influence PGRs' vision of their future career. It is worth noting that supervisor models vary across institutions and disciplines. However, given the increased numbers of PGRs since the late 1990s and the reduced availability of tenured academic positions, the Task Group recommends that PGRs be directed to specialised career advice and advised where to avail of personal and professional development opportunities.

**Fig 6: Internships and Entrepreneurship**

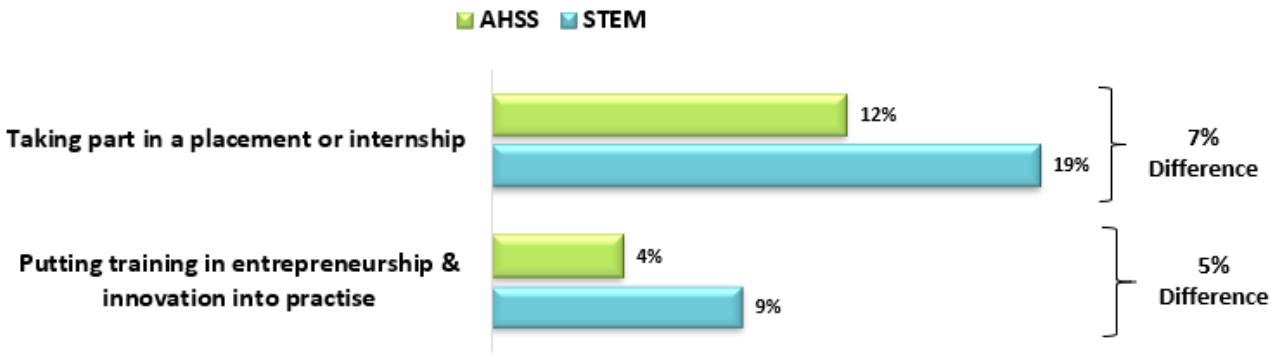



**Table 3 and Fig 6** above**,** indicate that less than 20% of all PGRs take part in an internship or placement and less than 10% of all PGRs had received practical training in entrepreneurship & innovation. Our expectations were that STEM PGRs would have a significantly higher level of industry engagement either through work placement and/or filing a patent, as applied research funding entails working in close collaboration with industrial partners. In addition, Entrepreneurship and Innovation is listed, in the IUA Skills Statement (2015), as a key competency acquired during the doctoral studies An important argument for the inclusion of Entrepreneurial skills is that these attributes make PhD researchers especially valuable to R&D active firms. According to the 2017 CSO Survey on Business Expenditure on Research and Development (Berd) companies employing PhDs had a 15% higher success rate of successful patents granted in comparison to companies with none. It is worth noting that academics, when applying for research grants, must illustrate that the research will be applied, and outline the impact that the innovation will have on society. Depending on the funding body in question, enterprise partners can be a business, NGP, non-profit organisation or an eligible public body. Embedding enterprise and entrepreneurship opportunities and education across all levels of study within higher education and in all subjects is recommended by The British Academy in 2017 in its paper *'The Right Skills: Celebrating Skills in the Arts, Humanities and Social Sciences'* . The Task Group suggests that In Ireland it will be interesting to follow this observation in future PGR Surveys of Student Engagement (PGR StudentSurvey.ie) and explore whether Industry linked cohort funding in the STEM disciplines (including mandatory placements with industry) will change this trajectory.

# Conclusions

Strategic investment by the Irish Government in applied research and development particularly in Science and Technology, over the past twenty years, has been central to Ireland's economic growth and development. The changing research landscape has led to an increased number of doctoral students. Doctoral education has been transformed, with graduate skills training more central to researcher development. The Postgraduate Research Student Task Group of AHECS sought to explore if large-scale funding initiatives led to different research experiences for AHSS PGRs in comparison to their STEM counterparts using the data source 2019 PGR StudentSurvey.ie. The Task Group concentrated on the elements of the data which would inform best practice in professional skills development and feed into policy decisions which support the employability of AHSS PGRs.

In terms of notable differences, AHSS PGRs are more likely to be self-funded, motivated by passion for their subject and to aspire to an academic career (despite the relatively low numbers of such positions). The percentage of PGRs who reported taking part in an internship, having experience in technology transfer or availing of careers advice was low in both cohorts. Though team working is considered a key transferable skill across all sectors, AHSS PGRs report having less opportunity for teamworking than their STEM counterparts. This apparent disparity may be due to an inability of AHSS PGRs to recognise or articulate transferable skills or because STEM PGRs perceive themselves to be working as part of a team due to working in a laboratory or institute environment. The Task Group recommends that all PGRs would benefit from timely career interventions to analyse training needs and explore cross-sectoral national and international career opportunities beyond graduation. This evaluation is particularly important in managing the expectations of AHSS PGRs who appear more persistent in pursuing an academic career. In addition, the findings may influence stakeholders in AHSS researcher education to look, through additional funding and/or creative re-configuration of programmes to build more development opportunities, such as teamwork and entrepreneurship, into the AHSS postgraduate research experience. The unpredictable future brings interesting problems to be solved. Researchers are adept at dealing with ambiguity and learn to thrive in the process. Career professionals are very aware of the wider economic landscape and labour market trends. They are well placed to help, particularly AHSS PGRs, to re-frame global and societal challenges and see them as opportunities to build interesting careers while contributing to a better future.

## Recommendations

- That authorities and stakeholders seek innovative ways with Careers Services to improve careers development opportunities for AHSS PGRs
- That all PGRs be encouraged to be active in their own career management from the outset (ideally at initial orientation)
- That all PGRs be offered timely analysis of their training needs, directed to specialised career advice and where to avail of personal and professional development opportunities
- That AHSS doctoral programmes consider opportunities for developing teamwork
- That enterprise and entrepreneurship skills/opportunities be embedded for all PGRs
- That the career trajectory of cohort trained PGRs with mandatory work placements be tracked (e.g. Science Foundation Ireland Centres for Research Training (SFI CRTs); UK EPSRCs Centres for Doctoral Training (CDTs) and Marie Curie Innovative Training Networks (ITNs))
- That stakeholders in doctoral education continue to collaborate on data analysis relating to long-term career outcomes of all PGRs
- That AHECS engage with PGR StudentSurvey.ie, in advance of the 2021 PGR StudentSurvey.ie, re fine tuning the questions in relation to career and skills development

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