

Pathways Beyond Academia 2022



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Part 1 Executive Summary

1.1 UCC Odyssey Programme

The Odyssey programme is an intensive 2-day programme with individual before and after reviews of each participant, that enables researchers and final year PhD students to adapt, integrate and expand on their existing expertise to prepare for the many diverse career choices ahead of them. It enables participants to explore a variety of avenues and identify career options that excite and challenge beyond academia. It also highlights the significant differences and/or advantages of the many workplace cultures that exist beyond academia.

This report presents the findings of a self-assessment of the UCC Odyssey Programme in the first 1.5 years of its operation. The programme was established to encourage the change in perspective needed for final year PhD's and researchers to explore and progress to new career paths beyond academia. Most professional training programmes focus on how to train individuals in a particular area e.g., Project Management, Leadership, Communication etc. but few focus on how to assist the individual with career advancement via mobility to a different professional sector. The growing visibility and popularity of the UCC Odyssey Programme highlights the obvious need to assist with the long-term career goals of research staff and final year PhD's within academia

Evaluating the long-term success of the Odyssey Programme participants relative to those researchers who have not availed of the programme will be challenging. There is a lot of information available on the career pathways of university graduates. There is very little (if any) information on the career trajectories of research staff within Third Level institutions globally and it is difficult to track the careers of individuals who leave research positions. Indeed, this study does not include information on those who have transitioned to roles beyond academia without the aid of a career transition programme. ***This report was circulated in draft to all participants of the study for feedback and comments. Of those who responded the consensus was that the study accurately reflects their views and aspirations at the time of completing the Odyssey Programme.***

1.2 Significant Findings of the Self-Assessment

- 1 There is a disconnect between the career expectations of research staff and PhD's within third level and the reality of the availability of academic positions globally.
- 2 Training should include (precise) information on the availability of academic positions globally. This information should be easily available in one trusted data source.
- 3 Information should be provided to research staff and PhD's regarding the full spectrum of available careers beyond academia and where to find these roles.
- 4 Research Staff and PhD's need support to articulate their skills to a non-academic employer.
- 5 One must address and acknowledge the organizational cultural barriers facing participants who are considering moving to careers beyond academia.
- 6 The participants do not need to "upskill" or "re-focus" their education and training any further.
- 7 The participants already possess the competencies that are required for roles beyond academia. The challenge is they do not realise they already possess these competencies.
- 8 A 2-day programme is sufficient.
- 9 Prior to taking the programme only 2% of participants indicated they wanted a role in industry. Following the programme 58% moved to careers beyond academia.
- 10 Operating a career intervention programme (inclusive of before and after one-to-ones) is hugely time intensive. Dedicated resources are required to sustain career intervention programmes.
- 11 Only PhD students in their final year should do a career intervention programme. Early PhD students tend not to be ready to seriously contemplate moving outside the traditional academic career.

"When I attended the Odyssey program, I learned more about the skills that are important for a job in industry. I also realized that most of the skills that I already have are transferable and are of great interest to industry"

1.2 Profile of Odyssey Participants

Cohort	Background	Aspirations
<p>64% Female</p> <p>53% PhD Students</p>	<p>Anecdotally, most of the participants were the first member of their family to have ever enrolled in a PhD programme or received a Doctorate.</p> <p>Most non-nationals on the programme are fluent in English, mother tongue and one other language.</p> <p>68% of the participants never had a research grant in their own name this is noteworthy as it is an indicator of future academic/research independence.</p>	<p>49% said they wanted a career in academia</p> <p>28% undecided.</p> <p>2% wished to move to Industry.</p> <p>74% of the participants said that they would feel “comfortable” about moving beyond academia</p> <p>26% had applied for a position beyond academia.</p>

<p>Years in academia before Odyssey</p> <p>6 of the participants have been in academia for 21 years or more.</p> <p>37 have been in academia from 11 to 20 years</p> <p>60 have been in academia for 10 years or less.</p>
<p>Careers after Odyssey</p> <p>58% moved beyond academia while 24% remained in UCC</p> <p>9% are completing PhD’s with 8% moved on to research/academic roles in other Universities</p> <p>1% are looking for work</p>

Part 2. Introduction

2.1 Background

The OECD note that ¹*“Skills have become the global currency of the 21st century”* and employers and/or funders of researchers are encouraged under the ²European Commission Charter and Code for Researchers to provide a stimulating training environment which offers opportunities and guidance for the personal and professional skills development of researchers employed on research funded grants. The continuation of a healthy research synergy within the European Union is very important to the research ecosystem here. A specific career development strategy inclusive of mobility between sectors, which compliments funding calls such as the Science Foundation Ireland (SFI) Industry Fellowship and H2020 Marie Curie programmes, is critical. As noted in the EC Communication on Rethinking Education, *“European education and training systems fall short in providing the right skills for employability”*³. Third level career transition programmes provide a solution to part of this complex training short fall.

2.2 Why introduce a career transition programme?

More highly trained and professionally savvy researchers taking up specialist roles that draw on their research experience will help to improve the performance of European industrial, commercial and non-profit and stimulate the economy overall.⁴

Career transition programmes address the career needs of the individual researcher, the needs of European industry and connect with various government strategies employed to improve global business and the global economy as a whole. At a time when the European Union is proving an attractive alternative location to the UK and US talent pool, the provision of well-planned effective training programmes for research staff in

¹ http://oecdobserver.org/news/fullstory.php/aid/3777/OECD_Skills_Strategy:_The_pathway_of_choice.html

² EC Charter and Code for Researchers <https://euraxess.ec.europa.eu/jobs/charter>

³ <https://ec.europa.eu/education/sites/education/files/2014-skills-qualifications-area-consultation.pdf>

⁴ <https://www.djei.ie/en/Publications/Publication-files/Innovation-2020.pdf>

European Universities can only increase our attractiveness to international scientists, humanities researchers and other talented people.

The Irish Government's aspiration for the third level education sector is that *"there will be coherent campus development so that research investment and facilities are aligned with Ireland's talent development at higher education level and synergies are identified and realised"*⁵ Career transition programmes are one such synergy.

"The Odyssey Programme came into my life in June 2018, at a point where I was feeling increasingly disillusioned with my career prospects in academia. The programme gave me the creative energy, emotional support, and motivation to work on my CV, consider what is most important to me in a career, and look for something rewarding. The programme is both thought-provoking and self-affirming because it gives Early Career Researchers a rare space to down tools so to speak, and focus on ourselves, our needs, and ambitions, and how these can be redeployed in other areas of work. "

⁵ Ireland's European Research Area Roadmap <https://www.djei.ie/en/Publications/Publication-files/Irelands-European-Research-Area-Roadmap.pdf>

Part 3. The Odyssey Programme

3.1 Mission

The Odyssey programme enables researchers and final year PhD students to adapt, integrate and channel their existing expertise to prepare for the many diverse career choices ahead of them. It enables participants to explore a variety of avenues and identify career options that excite and challenge beyond academia. It also highlights the significant differences and/or advantages of the many workplace cultures that exist beyond academia.

3.2 Context

The observations in this report must be seen within the context of the global academic job market and the growing numbers of PhD students, PhD graduates and Post-Doctoral Researchers – a context that few Researchers and PhD students appear to be aware of.

For someone finishing their PhD, the chances of securing a permanent research staff position are only 1 in 30 (3.5% of the PhD cohort) and their (the 3.5%) chances of ultimately securing a professorship is less than 1 in 200⁶. Estimates from the United States are not much better. In the last 40 years, the number of full-time tenured positions has dropped by 26% and in the same period full-time positions on the tenure track have gone down by 50%⁷

“The number of postdocs in science has ballooned: in the United States alone, it jumped by 150% between 2000 and 2012. But the number of tenured and other full-time faculty positions has plateaued, and, in some places, it is even shrinking...”⁸ Nature also notes “when universities are wooing prospective postdocs, they should make it clear that most will not end up as faculty members”⁹. Many researchers complain about “the pressure and competition, the lack of opportunities and the fear

⁶ https://royalsociety.org/~media/Royal_Society_Content/policy/publications/2010/4294970126.pdf

⁷ <https://www.aaup.org/>

⁸ *Nature* 472, 276–279; 2011

⁹ *Nature* <http://www.nature.com/news/young-researchers-thrive-in-life-after-academia-1.20686>

of failure”¹⁰ and Universities are being encouraged to “re-brand” the career training provided for researchers as “there is a huge disconnect between how we currently train scientists (and researchers) and the actual employment opportunities available for them”.¹¹

According to figures recorded on Eurostat¹², (**See Appendix A**) there were 763,204 PhD candidates in Europe (including the UK) in 2019. In the same period 121,065 people graduated with PhDs. (**See Appendix B**). To get some idea of how many of those graduating PhD students might achieve a permanent academic position, we note that the number of teaching staff in tertiary education in Europe was approximately 1.2 million¹³ in 2018. Since a typical academic career lasts approximately 30 years, 40,000 new appointments per year would be required to maintain the current number of tertiary teaching staff across Europe. ***Please note these figures relate to tertiary education overall and this author could not find reliable data on the numbers of academics working in public funded universities in Europe.***

So, we see that the number of PhD students graduating is approximately 3 times the number of tertiary academic positions becoming available. Only 1 in 3 graduating PhD students is likely to progress to an academic teaching position in **tertiary education**. In Ireland the discrepancy is larger: with 9,900 tertiary teaching staff, Ireland graduated 1,555 PhD students in 2019, so that only 1 in 4.5 PhD students may expect to progress to a tertiary academic position.

These estimates are necessarily crude because they assume that the academic system is in a steady, unchanging state. (Clearly, it is not.) Given the observations earlier in this report that the number of academic positions is falling world-wide, the actual number of academic appointments made per year in Europe is likely to be less than 40,000. Unfortunately, we do not have statistics available for the actual number of academic appointments made in each year. Moreover, the definition of academic staff is not consistent across Europe - “The degree of difference in academic staff categories from one country to another is a striking feature of the European higher education

¹⁰ Nature <http://www.nature.com/news/young-researchers-thrive-in-life-after-academia-1.20686>

¹¹ Nature <http://www.nature.com/news/young-researchers-thrive-in-life-after-academia-1.20686>

¹² <https://ec.europa.eu/eurostat/data/database>

¹³ [Link to Eurostat Tables](#)

landscape.”¹⁴, making it very difficult to obtain a more accurate picture of the overall balance of PhD graduates to academic positions available.

3.3 Genesis and Evolution of the Odyssey Programme

The development of the Odyssey programme involved a journey for me, through the disappointments and broken dreams of individual researchers, the pressures and aspirations of university academic staff, the societal aims of national governments and national or international funding agencies, and through the stark statistics of academic employment worldwide, to find some kind of resolution of the contradictions in the culture, expectations and goals of these various players in the current university research landscape.

A transformative programme seemed necessary, to expand the career horizons of individual researchers, connecting them to a larger society, and (perhaps) to convince academic culture to look more widely beyond its immediate, internal pressures and research goals and define success more broadly than it has done in the past. For me, such grand, long-term aims had to start with something relatively simple: assisting the individual researcher to find and embrace personal career satisfaction in a larger world than that defined by traditional academia.

The Programme began in 2015 with the introduction of a *CV Clinic* for Research staff to assist with career planning. These meetings were all one-to-one between me and the researcher. The clinics then expanded to include final year PhD Students. Participants forwarded their CV to me prior to the meeting. This proved to be particularly revealing giving me with an understanding of how researchers articulated their skills and experience, what they believed was important in a CV and how they approached composing their CV’s.

Much more humanly revealing during this period was a meeting with one woman, an experienced researcher who had successfully won plenty of grant funding during her

¹⁴ EURYDICE-MODERNISATION-OF-HIGHER-EDUCATION-IN-EUROPE-2017-1.pdf

career. She was self-sustaining in supporting her salary from research grants but never managed to get the academic role she so clearly longed for. Having come up short again at yet another academic interview she turned to me in HR as a last resort. During our meeting she broke down in tears: she was exhausted from writing grant application after grant application; she felt like a failure; her dreams of an academic career were shattered.

When I suggested a career beyond academia, she came back with “Who would hire me?” I couldn’t believe it. This bright, wonderful, well-educated professional woman felt unwanted in academia and thought that no one outside academia would hire her. I knew that something had to change!

At the same time (2015) the *SFI Industry Fellowship* call came out. I thought “what a great opportunity for a researcher to go to another country and work on a research project in industry”. I worked to raise awareness of the Industry Fellowship Programme in University College Cork. SFI came to UCC to introduce the programme. Industry representatives were invited to a researcher forum to encourage connections and contacts which would help to develop ideas for research projects in industry. This took a lot of time and energy to organise. *In the end there was one application from UCC for the Industry Fellowship.* What was happening?

I began to read anything I could find regarding researcher careers. *Nature* careers warrant special mention as they often have articles (with interesting links) regarding Post Docs in academia. I looked at the numbers of PhD’s and researchers versus the numbers of academic positions in Europe and the US (see section 3) and soon realised that there is a gross imbalance in the research ecosystem in third level. Simply put, there are too many PhD’s and Researchers for the number of tenured academic positions globally. When you factor in the culture of academia, where to leave can often be viewed as failure or (as is the case of many researchers and PhD’s) an academic position is the only conceivable career goal, then you have a cohort of highly educated bright and intelligent people who will never achieve their career goals. Something had to be done.

So, with no budget, I began investigating transformative programmes that run on a shoestring and actually work. However, I didn't find any...so I developed the Odyssey Programme. The vision was to prepare researchers and final-year PhD students to transition to a multitude of careers and not just follow in the footsteps of their academic mentors. It sounds simple but it isn't. As you can imagine, this is a challenging concept to introduce in academia. The whole premise of the programme is to enable research staff and PhD's to leave. Even when I discussed the programme with friends (who are academics from around the globe) at my own dinner table you could hear a pin drop in the astonished silence.

Luckily for me our UCC senior leadership team understood what I wanted to do and backed the programme. The pilot launched in July of 2018 and the female researcher mentioned above was on it. She blossomed. She realised that she had all the competencies and capabilities that she needed for a rewarding career. She learned about different organisational cultures, what types of roles are out there, what organisations want from their staff and what **she** really wanted from her career. Most importantly she learned how to get there. Here is what she had to say when she landed a permanent role outside of the academy: ***"I am moving to (excluded for privacy) as their Research Officer. This is a new post in the organisation. I am very excited about it as it fits my most important priorities, reinvigorated in the Odyssey programme; multiple stakeholder engagement, flexibility, ability to develop something, still connected to great research ideas and facilitating their fruition."***

An added bonus I didn't anticipate when evolving the programme is that the alumni have spread the word about Odyssey to industry and now industry are actively interested.

Knowledge and Support drawn from other areas

<p>Research/Literature Review A review was performed to identify existing programmes that address the knowledge deficit identified above. The result of the review indicated that the only organisations that provide the type of interventionist programmes that tackle anything remotely like what is needed is the military (the US Army and the British Army) where a lot of excellent work is underway to enable military personnel transition smoothly from military to civilian life.</p>	<p>Internal Support Internal organisational support for the initiative was paramount as the thrust of the programme is to encourage participants to move beyond academia (<i>if they want to!</i>). Senior level support came from UCC’s President, UCC’s Vice President for Research and Innovation and the UCC Director of Human Resources.</p>	<p>Focus Groups With support in place three University wide focus groups were convened for anyone who was interested in addressing the issue of career trajectories for research staff. The most important message resulting from the three well attended focus groups was that a programme that enables PhD’s and Research Staff to pursue rewarding careers beyond academia was urgently required and most importantly would be welcomed by PhD students and Researchers.</p>
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3.4 Overview of The Odyssey Programme in its current form

Step 1: Pre-Meeting

Facilitator completes a one-to-one pre-meeting with each participant before the Odyssey Programme. These meetings usually last a half hour. The objective of these meetings is three-fold:

- 1 An opportunity for the participants to get to know the facilitator and *vice versa* and, most importantly, build trust.
- 2 Provides the participant with an overview of what to expect from the two days of group sessions and presentations.
- 3 Enables participants to reflect on the length of their career in academia and their personal career needs and expectations by answering a series of leading questions. (See appendix D for questions).

Step 2: Two Day Agenda (See appendix C)

Day One: Shift the participants' thinking on their career prospects in a group setting.

Day Two: Enable them to move from a shift in thinking to implement a shift in their career trajectories.

Step 3: Post-Meeting

One-to-one post-meeting with each participant following the Odyssey Programme. These meetings including preparation usually last one hour. Before this meeting, each participant will have provided their resumé/CV in an MS Word document for editing. This meeting combines an individual CV clinic with a general discussion of how the participant can translate the programme lessons into practice.

Part 4. Study Approach, Methodology and Overview of Data

4.1 Report Approach

This report focuses on understanding participant career trajectories and professional transitions as they occur following participation in the UCC Odyssey Programme.

4.2 Sources of Evidence

The report draws on three sources of evidence. First, the report summarizes data gathered through completed “before” questionnaires from the first 103 participants in the programme.¹⁵ Second, the report presents the individual career trajectories of the 103 participants. Third, the report includes individual quotes from some of the participants either directly after the programme or when they had transitioned beyond academia.

The data included in this report provides a snapshot of a cohort of participants who have progressed their careers both within and beyond academia since their participation in the UCC Odyssey programme. Agreement to supply the anonymous personal data in this report and other similar research was given in person and via email when participants signed up for the programme. Although the sample may not be statistically representative of the national PhD and Researcher population in Irish HEI’s, data has been collected from participants from all research and academic disciplines. Sections may include direct quotes, reference links and independent research from various external and internal sources.

4.3 The Study Cohort

Between July 2018 and September 2019, 103 participants completed the Odyssey programme. The 2-day programme ran 6 times between those dates with a maximum

¹⁵ As of January 2022, 230 UCC researchers and PhD’s have completed the programme.

number of 20 participants per session. Participants from all disciplines and the 4 Colleges of UCC were included.

120 participants signed up for the programme with 17 “no-shows” divided more or less equally between the 6 sessions. Where reasons for non-attendance were provided, they included illness, not enough time, and other more pressing commitments.

The dates of each 2-day session were communicated to all staff and all research staff via email with a request in the email that PhD’s be informed about the programme through their academic supervisor as HR does not have access to PhD student email addresses. These 6 sessions were free of charge to the participants. Human Resources covered all costs of the programme.

“I took part in the Odyssey programme when I was a third year PhD student in the Department of Chemistry UCC. The programme arrived at an ideal time for me as I was getting to the stage where I was trying to decide on my future career path.

While I always enjoyed the support of my supervisor and my research group, the decision to either stay in academia, or move to industry, was one that weighed significantly on my mind. During the programme I described myself as being in “the doldrums” in terms of my research and my decision about the future.”

Part 5. The Participants

5.1 Demographics

The participant cohort represented all four colleges (College of Arts Celtic Studies, and Social Sciences, College of Business and Law, College of Science, Engineering and Food Science and the College of Medicine and Health) all disciplines, and research centres in UCC. Before the programme each participant was interviewed and answered a series of questions. In general, the data showed that non-national participants have more languages on average than Irish participants.

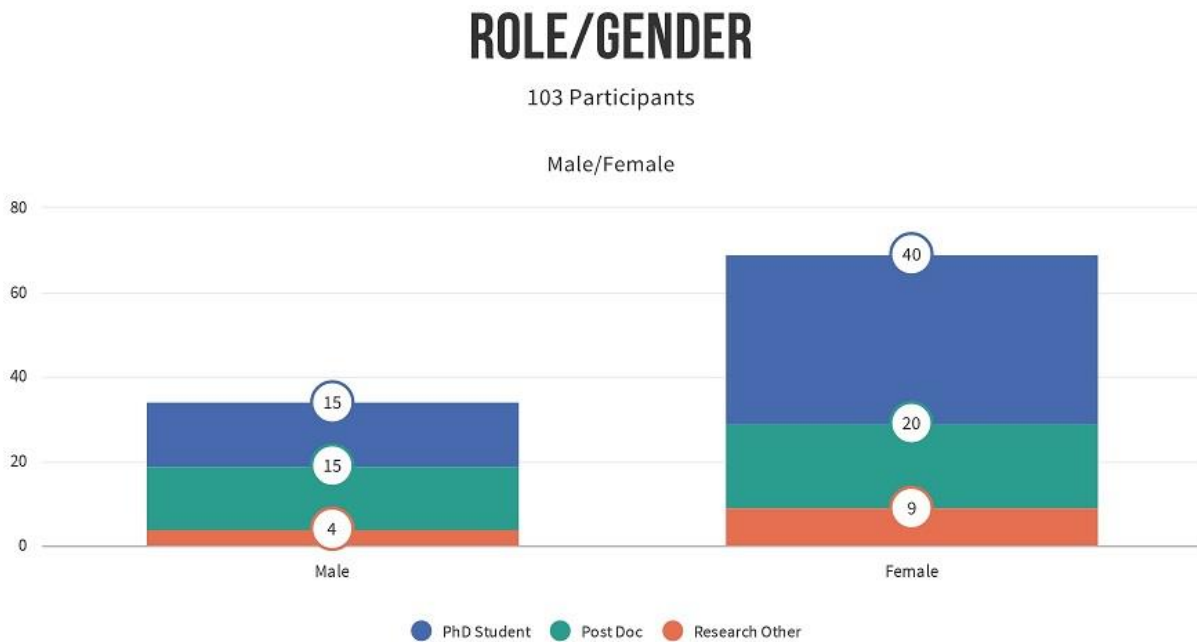


Figure 1 Female participants out number male participants

COLLEGE/GENDER

103 Participants

Male/Female



Figure 2 More participants from SEFS and M & H



Figure 3 70% note they were best in class in school

CAREER CHOICE

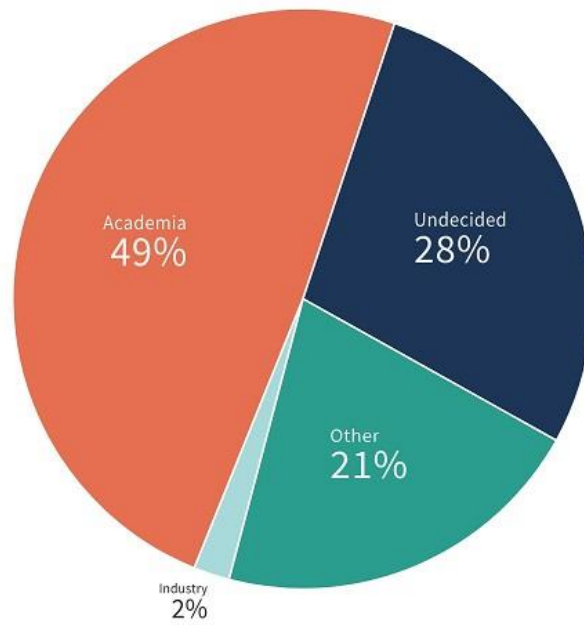


Figure 4 Most participants wish to pursue a career in academia

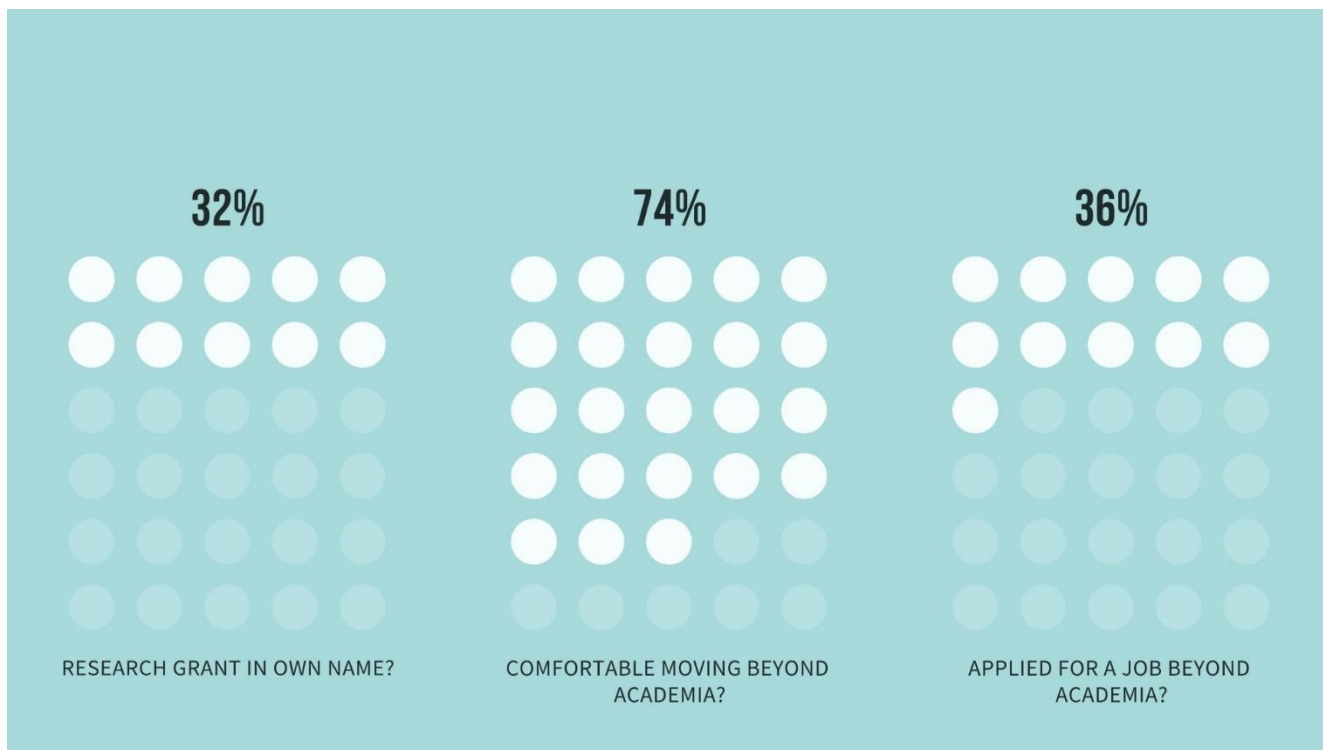


Figure 5 Three questions affirmative answers only

68%



ENCOURAGED TO SEEK OUT TRAINING BY YOUR SUPERVISOR?

63%



DO YOU RECEIVE CAREER ADVICE FROM YOUR SUPERVISOR?

Figure 6 Good affirmative % are encouraged to seek training and receive career advice from supervisor

OF THE 63% WHO RECEIVED CAREER ADVICE

40% academia related.

60% beyond academia.

Figure 7 The majority receive advice about nonacademic roles

Part 6. Careers

6.1 Where did the participants go?

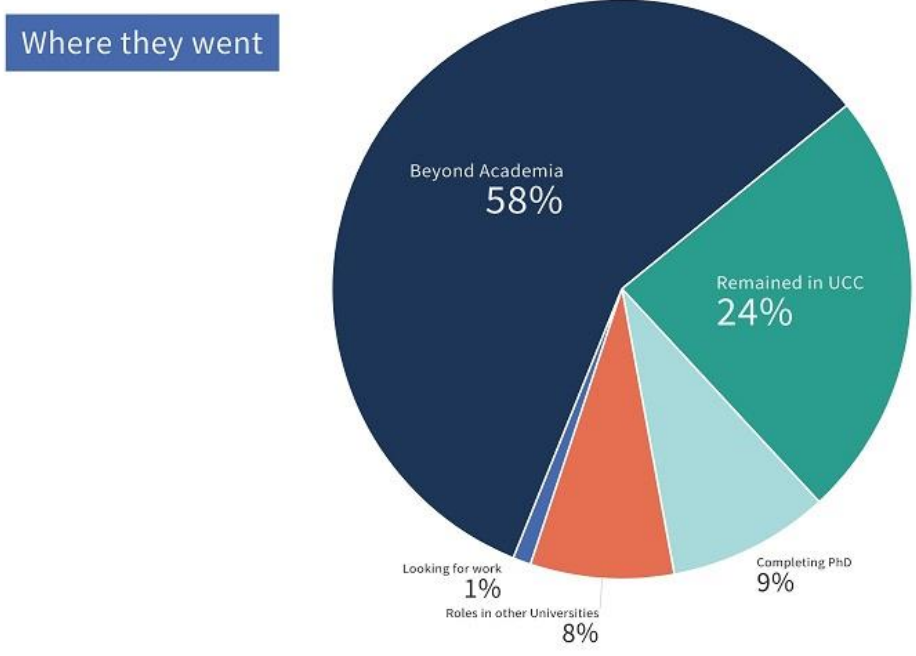


Figure 8 Where participants went after Odyssey

“The Odyssey Programme was transformative for my career. It made me appreciate that my non-linear academic progression was not a disadvantage, and that my work experience in fact gave me an edge as I had many transferrable skills in addition to those gained as a PhD. It broadened my expectations of the types of positions and organisations for which I would be a potential candidate”.

6.2 Odyssey Participant Roles

Beyond Academia (60 Participants)

Application/Field Support Engineer	Associate Manager	Associate Director Publications Strategy	Technical Scientist
Business Process Re-engineer	Business Researcher	Central Statistics Office	Children's Books Ireland
Clinical Biochemist	Clinical Measurement Physiologist	Clinical Project Manager	Clinical Trial Project Manager
Copyeditor, Copywriter and Translator	Environmental NGO Project Member	Global Scientific Communications x 5	Global Scientific Communications Regulatory Associate x 2
Global Scientific Communications Specialist x 2	Hardware Engineer	High Research Scientist, Non-Profit	Information Developer
Intellectual Property Rights Advisor	Intermediate Information Developer	Network Analyst	Novelist and Entrepreneur
Operations Manager	Optical Engineer Future Technologies	Optical RFIC System Engineer	Civil Service x 2
Innovation & Research Consultant	Principal Scientist Industry	Process Development Scientist	Program Manager x 2
Project Manager Non-Profit	Project Scientist Non-Profit	Publications Strategy Lead	QA Analyst
R&D Associate	R & D Project Manager Non-Profit	Research Associate	Research Officer Non-Profit
Research Project Officer	Scientific Manager	Scientific Products Specialist	Senior Associate Global Scientific Communications
Senior Marine Ecologist	Senior Regulatory Affairs Associate	Senior Research Scientist	Social Impact Analyst
Sociologist, Analyst - Consultant/Researcher	Associate Scientist	Research Project Officer Non-Profit	Global scientific Communications Associate (publications)

Figure 9 Role titles beyond academia.

Roles in UCC (24 Participants)

Lecturer x 5 (Of which 3 x Fixed Term)	Researcher x 2	Post Doc x 7	Research Support Officer x 3
Senior Post Doc	Language Teacher	Administration x 2	Marie Curie x 3

Roles in Academia Beyond UCC (8 Participants)

Post Doc x 4	Senior Post Doc	Teaching Assistant	Researcher x 2
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Completing PhD (10 Participants)

Looking for work (1 Participant)

“My job at (omitted for privacy) Ireland is equivalent to a PI in the academic setting: to set up and lead a research group (omitted for privacy) dedicated to improving current understanding of the effects of wind energy developments on biodiversity”.

“I can safely say that the Odyssey programme gave me the confidence in myself and my abilities to apply for this position, and I may not have even applied for the position had I not completed the programme.”

Part 7. Observations and Impact

7.1 High Achievers

The cohort are a bright and high achieving group of people most of whom have been the best in their class all the way through school. Anecdotally, many of the participants revealed that they were the first member of their family to have ever enrolled in a PhD programme or received a Doctorate. They are used to succeeding academically. In academia the currency is a PhD so probably for the first time many find themselves in a pool with their peers. The environment is hyper competitive, and the odds of success are low. This can cause many anxieties and worries about where to go next or, for some, the thought of leaving academia following all the effort to succeed is a whole new departure. The career expectations of participants in the Odyssey Programme point to the fact that nearly half believe they will secure an academic position. **“Every graduate student believes that with enough hard work and perseverance they too can rise up the ranks and receive a permanent job.”**¹⁶ It can be difficult to leave academia when so much has been sacrificed to stay. It is also difficult for participants to absorb and believe the low rate of success in securing an academic position.

“One of the things that I found most beneficial of the program was how universal some of the worries I had were. With students and staff from a variety of academic disciplines participating and sharing the same frustrations and fears about what they were going to once their current contracts were up. The inclusion of post-Doctoral researchers within the group also helped to show that this problem was not exclusive to post-graduate students and shone a light on some of the difficulties that were previous concerns of mine with the nature of entering academia. “

¹⁶ <https://www.theguardian.com/higher-education-network/2018/jun/22/permanent-academic-job-university-system-unfair-exploitative>

Following learnings from the programme it is apparent that the programme works best for PhD's in their final year. PhD students who have not reached their final year are focusing on their research question and are not thinking too deeply about their future careers.

“In the job interview I explained my skills and abilities as an experienced researcher, and I successfully got the job (Hardware Engineer) and shortly after the first year of my employment with them I got promoted as well. “

7.2 Career Expectations

The cohort's career aspirations indicate that 49% wish to follow an academic career path (with 28% undecided). Of course, this cohort are well within the norms of PhD and Researcher career aspirations. See Nature Survey ↓

A 2019 survey by Nature¹⁷ revealed that despite a global shortage of jobs at universities, 56% of respondents said that academia is their first choice for a career. Just under 30% chose industry as their preferred destination. The rest named research positions in government, medicine, or non-profit organizations. In 2017 the survey responses suggest that many PhD students lack a clear vision of their future. Nearly 75% of respondents said that they would like a job in academia as an option after they graduate, whereas 55% said that they would like to work in industry. That might partly be down to indecision: nearly half of respondents indicated that they were likely or very likely to pursue a career in either sector.¹⁸ In 2015, 78% of respondents chose academia¹⁹. The same is true for researchers. In Nature's 2020²⁰ inaugural survey of postdocs, two-thirds of respondents — and 80% of those who currently work in North America or Europe — still see academia as their preferred career destination.

¹⁷ <https://www.nature.com/articles/d41586-019-03459-7>

¹⁸ <https://www.nature.com/articles/nj7677-549a>

¹⁹ <https://www.nature.com/articles/nj7574-597a>

²⁰ <https://www.nature.com/articles/d41586-020-03191-7>

Even though nearly half of the participants said they wished to pursue a career in academia (28% said they were undecided) most had not been successful in winning individual research grants and never had a grant in their own name. ***This is worth noting because even though it may not be an essential requirement for an academic appointment it is an important indicator of future success in academia.*** However, the lack of a research award did not seem to deter the group from pursuing an academic career or continuing to remain in academia.

“Career advancement in academia includes a set of steps and milestones validating research and/or teaching competences of academic staff. Throughout these steps, academics are gradually recognised as competent members of their community and become eligible for supervising projects, units, as well as younger researchers, in particular doctoral candidates. The steps or requirements necessary to achieve such recognition are formalised to varying degrees. In some higher education systems, they are stipulated in top-level regulations, whereas in other systems, they are defined in regulations of individual higher education institutions or their units. They may also be implicit, embedded in shared understanding of academic careers.”²¹

74% of the participants said that they would feel “comfortable” about moving beyond academia but only 36% had applied for a position beyond academia. It follows that the 36% were either unsuccessful in their job applications or that they did not want the position they had applied for and decided to remain. ***Interestingly, of UCC’s Odyssey cohort for this report only 2% said they wanted to go to industry.***

²¹ EURYDICE-MODERNISATION-OF-HIGHER-EDUCATION-IN-EUROPE-2017-1.pdf

7.3 Years in Academia

Collectively, the participants had spent 1139 years in academia. 6 of the participants have been in academia for 21 years or more, 37 had been in academia from 11 to 20 years and 60 (most of which were PhD students) had been in academia for 10 years or less. This is important when considering the immersion of this cohort within the culture of academia. Those with a lengthy tenure with the same employer (usually 10+ years), will find it challenging to successfully transfer their skills to another employer or sector. It often happens that the individual may be so ingrained in the culture, politics, and academic/research processes of academia that they believe they would find it hard to successfully transfer their skills to another organization.²²

“This was a difficult decision for me as I had spent 8 years in the academic setting, and I was nervous about leaving.”

7.4 Transferable Skills

“I lacked the capacity to identify my transferrable skills and the opportunities out there for a rewarding career.”

Most of the participants when asked were not able to recognise or articulate their transferable skills. When pressed further to reflect on what they could bring to a perspective employer other than their research skills or academic expertise most participants were not able to answer. All participants were well versed in discipline specific skills i.e., the specific knowledge and capabilities that are needed to progress academically e.g., laboratory procedures, statistical analysis, referencing, literature etc.

²² <https://moviecultists.com/institutionalised-in-a-job>

however, competencies such as Problem Solving, Data Analysis, Project Management, Communication Skills etc., were not on the radar of most of the cohort.

The model below highlights the transferable skills gained from a selection of academic discipline-specific research expertise but applies to many disciplines.

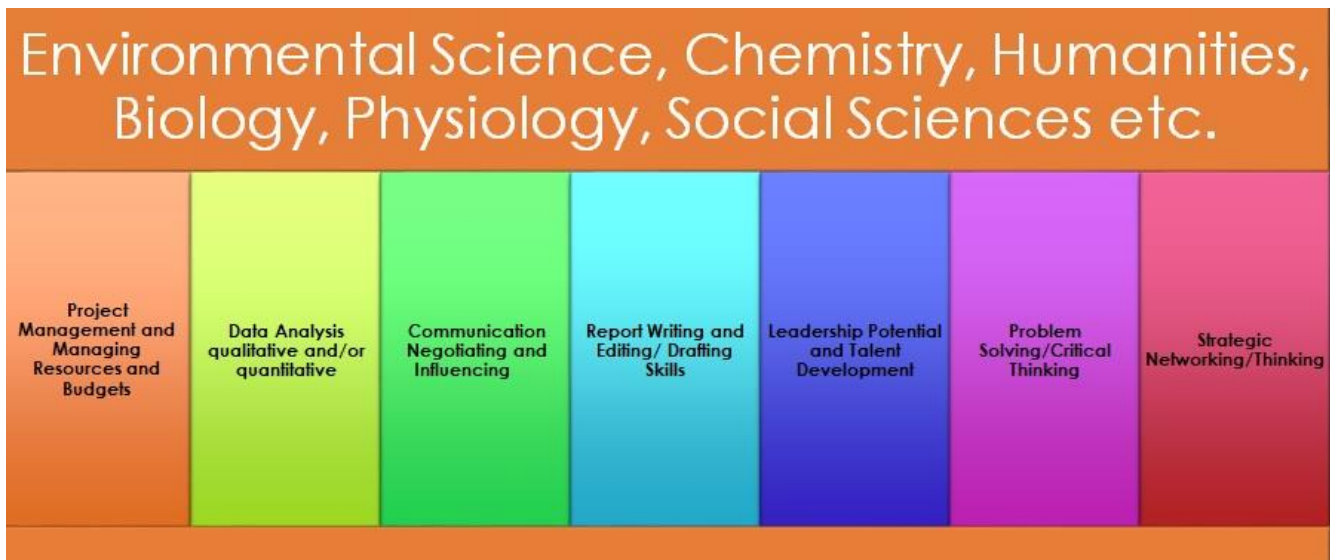


Figure 10 discipline specific skills leading to transferable skills

For those who had a part-time job during their studies where they would have learned customer service skills, shift scheduling, stock taking etc. many did not view these skills as important or worth mentioning. What is telling is that many participants were unaware that part-time positions of any type are helpful when looking for work.

“Equipped with the CV writing and interview skills from the programme, I was able to secure a position with the National Physical Laboratory in (omitted for privacy), as a Higher Research Scientist. I am now in charge of the calibration of a wide variety of instruments that are important in fields ranging from air quality monitoring to automotive testing. This position has allowed me to utilize all of the skills I learned during the programme, and it also allows me to keep on top of current research and maintain my contacts in the University and the academic world. “

However, during the course of the programme most participants learned to articulate their discipline specific skills for a non-academic employer.

7.5 Types of Impact

Much of the impact of the Odyssey Programme is monitored in terms of employment statistics and volumes of delivery e.g., numbers of participants and programme cycle numbers. Many performance indicators focus on what can be easily measured however, can the true impact of a career transition programme such as Odyssey ever be realistically measured given the complexity of the cohort involved and the context in which the programme is run? The interaction of so many variables means that both hard and soft outcomes must be explored. Hard outcomes are those that can be seen and measured in terms of simple quantities. Soft outcomes are those that are more subjective, more qualitative, and often not so easy to quantify.²³

“Straight away, with the first presentation, the Odyssey programme helped me feel so much less guilt about this decision. Also, while a career path in academia was clear to me, I had no idea how to navigate alternative career options. I didn’t know how to market myself and my skills for the job market outside academia. Where should I start? Which skills should I emphasise? How do I communicate those skills effectively? “

For the purposes of this report the impact of the Odyssey Programme will be measured in two ways:

1. Personal Impact
2. Institutional Impact

²³ https://warwick.ac.uk/fac/soc/ier/ngrf/effectiveguidance/improvingpractice/curriculum/cfbt_evidence_and_impact_-_resources_2010.pdf

7.6 Personal Impact

This is currently measured by the career success of participants as outlined in the statistics throughout this report (a hard outcome). What was unanticipated (a soft outcome) is that, as can be seen from the quotes below, many participants have used the learnings gained from the programme not only to re-direct their own careers but also assisting friends and family with their career paths. Other participants noted an

“I really do not think there are enough words to say how much of an impact this programme has had on me. I knew I wanted a career in industry, and you really helped show me my value. Since speaking to you last, I left (omitted) as a Global Scientific Communications Associate and moved on to my dream job: research in industry.

Had I not taken part in your programme, I don't think I ever would have had the confidence (or the know-how) to apply for my current role. I am currently working with (omitted) as a Senior Engineer, Biomedical Engineering and have been super happy here for the past 10 months. I look forward to what the future holds for me.

As this programme has been very helpful, and inspiring to me, I am making it my mission to help my friends realise their worth and have helped with their CVs – showing them that they too have the necessary skills to pursue their careers. The competency CV is definitely a game changer!”

increase in their self-esteem and self-confidence following participation in the

programme, with the belief that they could source and apply for roles and succeed in those roles beyond academia.

“The impact of the UCC Odyssey Programme far exceeded my expectations. It resulted in me becoming more open-minded and with a greater confidence in myself and my future. Prior to the programme I felt trepidation about a transition to a non-academic career path. Speakers from industry roles described their own transition to a non-academic career path, and this instilled in me further confidence that a transition was possible. I recognised that I could be a success outside the academic world. “

7.7 Institutional Impact

The provision of a talent pipeline from third level to industry is one of the goals of the Irish government. This programme assists UCC in the delivery of this goal to Government. In its recent publication *Innovation 2030*²⁴ the Department of Further and Higher Education, Innovation and Science states: *“We will ensure that researchers have the right skills and opportunities so that they can make their maximum contribution, whether that is in academia, industry, the public sector or elsewhere, and realise their own career potential while doing so. Recognising that the vast majority of early-career researchers will not remain in academia long-term, we will seek to improve career pathways, starting with a deeper understanding of the nature of the demand for research talent.”* Of interest here is that when the participants were asked to identify a sector in which they wished to pursue their career only 2% indicated they would like to go to industry. The results have shown that of the 58% who have now transitioned beyond academia 73% of them have gone to roles in industry. This is an example of how career transition programmes can make a difference enabling Third Level to connect in with Government strategy whilst preparing participants for roles in enterprise, the public sector, civic society organisations and internationally.

²⁴ <https://www.gov.ie/en/publication/27c78-impact-2030-irelands-new-research-and-innovation-strategy/>

“Now more than ever, amid budget cuts and academic-job shortages, we need to publicize our best practices and share programs that work. In that spirit, I want to spotlight a career-diversity program for graduate students in Ireland — the Odyssey Program at University College Cork — that deserves a try-out on the American side of the pond.” Prof Leonard Cassuto

There have been serendipitous repercussions. For example: The participants who went to industry spread the word about Odyssey to their new HR departments. UCC was then contacted by one organisation and have subsequently formed a very good collaboration which works very well for the participants and the programme itself.

There are few Universities globally running programmes like Odyssey. It has certainly highlighted UCC as a good employer of researchers. A recent Article in the [Chronicle of Higher Education](#) United States was focussed on the UCC Odyssey Programme which has opened up possibilities of collaboration with American Universities.

7.8 Learning Outcomes

Participants are enabled to apply the change in perspective encouraged in this

I just wanted to let you know that I've secured a job with xxx and will be starting there next Monday - this Thursday is my last day at UCC. Many thanks to you (and the Odyssey team) for the great programme that most certainly contributed to me successfully getting this new job. The CV clinic was instrumental in getting me an interview at (omitted). I also used the skills focus CV idea to help my wife revamp her CV and she also recently got a new job so thanks from all the family

programme to willingly explore and progress new career prospects. Researchers gain a deeper awareness of the variety of interesting and challenging career options that exist outside of the university. They are in a position to analyse and appraise the current job market and the many opportunities available to them. They also appreciate the cultural

differences and different metrics of success in organisations beyond academia, enhancing their potential for future leadership and impact in multiple sectors. It helps to provide “academia to industry” ambassadors creating pathways to and from third level to other high performing organisations. It also embraces the principles of the HR Excellence in Research Award and Open Science which highlights the need for new and pioneering initiatives which support career development programmes for today’s researchers.

7.9 Facilitators

The nature of this programme is such that it requires the participants to connect with and trust the trainers. To nurture the ground-breaking change in perspective that this programme means to achieve, the trainers themselves require the organisational cultural awareness that comes from the experience of working within research performing organisations such as UCC together with the expertise and knowledge of

“The Odyssey Programme was transformative for finding my career. It made me appreciate that having a PhD is a passport to success. It broadened my expectations of the types of positions and organisations for which I would be a potential candidate.”

work practices and employment needs of organisations that are external to the university. The training providers complement each other in knowledge, skills and expertise.

- See LinkedIn Profiles of the Facilitators
 - [Mary O'Regan](#)
 - [Jay Chopra PhD](#)
 - [Anne Gannon PhD](#)
 - [Fionnan O'Sullivan](#)

Appendix A

Data extracted on 13/04/2022 12:51:37 from [ESTAT]											
Dataset: Pupils and students enrolled by education level, sex, type of institution and intensity of participation [EDUC_UOE_ENRA01__custom_2500808]											
Last updated: 21/02/2022 23:00											
Time frequency	Annual										
Unit of measure	Number										
Working time	Total										
International Standard Classification of Education	Doctoral or equivalent level										
Sector	Total										
Sex	Total										
	TIME	2012	2013	2014	2015	2016	2017	2018	2019		
GEO (Labels)											
European Union - 28 countries (2013)	:	:	:	720,104	d	739,693	d	760,167	771,559	763,204	d
European Union - 27 countries (from	:	:	:	607,304	d	626,690	d	647,878	660,302	650,659	d

Appendix B

Data extracted on 13/04/2022 13:02:51 from [ESTAT]										
Dataset: Graduates by education level, programme orientation, completion, sex and age [EDUC_UOE_GRAD01__custom_2501232]										
Last updated: 16/03/2022 23:00										
Time frequency	Annual									
Unit of measure	Number									
Age class	Total									
Sex	Total									
International Standard Classification of Education	Doctoral or equivalent level									
	TIME	2012	2013	2014	2015	2016	2017	2018	2019	
GEO (Labels)										
European Union - 27 countries (from	:	103,486	103,206	106,480	109,643	108,896	100,770	d	91,725	d
European Union - 28 countries (2013	:	129,382	128,226	133,116	137,009	137,039	130,239	d	121,065	d

Appendix C

Online Odyssey Programme

Dates (2 Days)

Day 1

9-9.30am: Personal Introductions (Mary O'Regan/Dr Jay Chopra)

- Getting to know each other: Interactive, fun approach
- Getting to know Mary – Mary's Career Story
- Getting to know Jay - Jay's story: PhD to Postdoc to Industrial Researcher to Corporate Leader to Entrepreneur

9.30-10.00am: Why Are You Here? Expectations (Dr Jay Chopra)

- Facilitated group expectations exercise to understand participants' reasons for attending.
- Interactive group exercise to understand the current career ambitions of each participant.

10-10.30am: Researcher Career Trajectory - The Facts (Mary O'Regan)

- What does it look like on the ground? The numbers

10.30am-11.30am: Impact on Your Career Ambition? (Dr Jay Chopra)

- Debrief discussion of the research career trajectory facts - what does this mean for your future career ambition?
- Discuss Fear and Personal change
- Set-up break personal activity on fear and personal change

BREAK (+ Self-directed activity)

2-2.15pm (Dr Jay Chopra)

- Welcome back & check-in

2.15-3.45 pm: Organisational Cultures Beyond Academia – Skills and Success Measures (Dr Jay Chopra)

- Describes skills, attitudes and behaviours valued in other organisations
- Describes success measures in other organisations (Uses whole-brain, Herrmann Brain Dominance Instrument to facilitate this discussion)
- Brainstorm potential personal careers options based on personal skills/interests
- Develop personal skills development plan

3.45 – 4.00pm: Break

4.00 to 4.30pm: Speaker 1 Who Made Successful Transition Beyond Academia (Q&A Interview Approach)

- From Humanities area

4.30 – 5.00pm: Provide Instructions for Overnight Assignment (Dr Jay Chopra) and Day 1 close-out discussion (all)

Day 2

9-9.30am: Where Are We Now....? (Dr Jay Chopra)

- Activity to facilitate day 1 reflection
- Debrief overnight activity
- Revisit your career ambition – has it changed?

9.30-10.15am: Opportunities for Researchers Beyond Academia (Mary O'Regan)

- Overview of the many career options beyond academia

10.15-10.30am: Break

10.30 am-12.00pm: That's the Job! (Fionnan O'Sullivan)

- Understanding how the recruitment process works - story from the other side. A day in the life of a HR professional/recruitment consultant receiving, screening, grading your CV
- Technology – how applications are won and lost
- Branding – banish the fear, LinkedIn, social media one small part of the process
- Networking...it's not all cocktail parties - do you like coffee?
- Working with a recruitment partner - what's real?
- Interviews techniques - fail to prepare, prepare to fail!
- Q&A

12.00 -1.45pm: BREAK

1.45 -2.45pm: Speaker 2 Senior Talent Acquisition Manager – Global Business Solutions Eli Lilly (Q&A)

2.45-3.30 pm: Interview techniques (Dr Anne Gannon)

3.30 to 3.45 pm: Break

3.45 to 4.15: Speaker 2 Who Made Successful Transition Beyond Academia (Q&A Interview Approach)

- From Medicine and Health area

4.15 to 5.000pm: Bringing it all together (Dr Jay Chopra)

- Develop a personalised career action plan for each participant.
- Uses whole-brain approach.

Appendix D

1. Name	
2. Where are you from?	
3. How many languages are you fluent in and what are they?	
4. Were you one of the best in your class at school?	
5. What year did you start your undergrad degree?	
6. What was your undergrad degree in?	
7. Did you complete a master's degree?	
8. What was that in?	
9. Have you a PhD?	
10. What year was your conferring?	
11. What was the area of expertise/research for your PhD?	
12. Tell me as a lay person what it was about?	
13. What area are you in now?	
14. What is your job title?	

15. In which College or Centre are you located?	
16. Do you have a grant in your own name?	
17. Did you ever have a grant in your own name?	
18. Have you written grant proposals?	
19. How many approx?	
20. Do you work with large data sets?	
21. Have you programming languages, good IT skills?	
22. Do you manage research grants like budgets, deliverables?	
23. Have you managed teams or individuals?	
24. Have you organised conferences/seminars?	
25. Have you made many presentations?	
26. Do you seek out training in transferable skills?	
27. Are you encouraged by your line manager to seek out training?	
28. Have you ever received career advice from your line manager?	
29. If yes – what was it?	

30. How many years (inclusive of your undergrad) have you been in academia?	
31. Do you connect with industry in any way through your work in UCC?	
32. Have you ever worked outside the university?	
33. Have you ever had a part time job outside the university?	
34. What did you do?	
35. Did you enjoy it?	
36. What did you learn from working that job?	
37. What were your career expectations as an undergrad?	
38. Why did you decide to do a PhD?	
39. Why did you decide to do a Post Doc?	
40. What type of position are you aiming for now?	
41. What are your career expectations now and have they changed over the years?	
42. Other than your area of research expertise what do you think you could bring to a prospective employer?	
43. Would you like to move beyond academia?	
44. Have you applied for positions beyond academia?	

45. If yes what were they and did you get to the interview stage?	
46. Would you feel comfortable about moving beyond academia?	
47. Is this option b, c or d for you?	
48. Whatever your answer here: Why?	
49. What do you hope to gain/learn from attending this programme?	
50. Are you happy for me to keep your information and track your career for the next 2 years?	<p>If yes please sign here:</p> <hr/>