

# Application for Fellowship of Advance HE

## Descriptor 4: Principal Fellow

### DARTE

Disciplinary Approaches to Research and Teaching Excellence

**Applicant name:** Dr Katharine Hubbard

**Preferred pronoun (optional):** (she/her)

**Please complete if you work on a University of Hull programme either on campus or at a Partner Institution.**

*The Teaching Excellence Academy supports applications for Fellowship from colleagues working for the University of Hull or delivering University of Hull programmes at Partner Institutions that are Full or Affiliated members of Advance HE (AHE). Applicants from non-AHE member institutions are subject to a fee (currently 50% of the direct application fee).*

**Name of Partner Institution:**

**Partner Institution AHE Membership:**

*The fee for applicants from non-AHE member institutions is payable to AHE on successful completion of the programme, at which point the certificate will be issued.*

Full/Affiliated/Not a member (*delete as appropriate*)

Non-AHE member institution staff, please confirm that you or your employer will cover the fee for the issue of your certificate

☐

**Faculty:**

**Faculty of Science and Engineering**

<i>Applicants from Partner Institutions, please name the Faculty that validates the programme/s on which you teach.</i>	
<b>Subject Group/Department:</b>	<b>Biological Sciences</b>

<b>Route to Fellowship</b> Please confirm below the route you have chosen ✓	
<b>Written Submission:</b> Reflective commentary (2,500 words); 10-13 examples of professional practice (100 words each); 4 case studies (800 words). Total word count: 7,000 word limit plus citations. Word limit 7,500 words.	✓
<b>Assessed Professional Dialogue:</b> Reflective commentary (1,500 words); 10 examples of professional practice (100 words each); Professional dialogue with 3 assessors (50mins). Total word count: 2,500 word limit plus citations. Word limit 3,000 words.	

## Declaration of Authenticity

### Plagiarism Declaration

*I declare that the work that I am submitting for assessment contains no section copied in whole or in part from any other source unless it is explicitly identified by means of quotation marks. I declare that I have also acknowledged such quotations by providing detailed references in an approved format. I understand that either or both unidentified and unreferenced copying constitute plagiarism, which is one of a number of very serious offences under the University's Code of Practice on the Use of Unfair Means.*

## GDPR Declaration

*You should be aware that upon successful recognition at AFHEA D1, FHEA D2, SFHEA D3 and PFHEA D4, personal data including your name and email address will be supplied to Advance HE. This is in order to trigger your fellowship registration and certificate being recorded on their MyAcademy database: <https://my.advance-he.ac.uk/>*

*Advance HE will make use of this data in the course of providing their Accreditation Services to UoH, and potentially in any reviews they might carry out of our accredited provision.*

*By submitting your coursework and appendices you are confirming you agree to this data sharing.*

## Application for Descriptor 4: Principal Fellow

Principal Fellowship of the HEA is awarded to professionals who demonstrate they meet the criteria of Descriptor 4 of the UK Professional Standards Framework (UKPSF) for teaching and supporting learning in higher education.

By applying to become a Principal Fellow of the HEA you will present a sustained record of effective strategic leadership in academic practice and academic development as a key contribution to high quality student learning. Individuals should be able to provide evidence of:

- D4.I. Active commitment to and championing of all Dimensions of the Framework, through work with students and staff, and in institutional developments;

- D4.II. Successful, strategic leadership to enhance student learning, with a particular, but not necessarily exclusive, focus on enhancing teaching quality in institutional, and/or (inter)national settings;
- D4.III. Establishing effective organisational policies and/or strategies for supporting and promoting others (e.g. through mentoring, coaching) high quality teaching and support for learning;
- D4.IV. Championing, within institutional and/or wider settings, an integrated approach to academic practice (incorporating, for example, teaching, learning, research, scholarship, administration etc.);
- D4.V. A sustained and successful commitment to, and engagement in, continuing professional development related to academic, institutional and/or other professional practices.

The application is based upon evidence that has been gained over the last five to seven years (full time equivalent).

If you are unsure whether or not Principal Fellow is the correct category of Fellowship for you please access the Category Tool provided by Advance HE here

<https://www.advance-he.ac.uk/fellowship#fct>

Please tick to confirm you have added the following documents to your application:

	Check ✓
<b>The completed application form</b>	✓
<b>The three Advocate statements</b> <i>(please note that it is your responsibility to include the references with this application)</i>	✓

When ready please submit your documents to [darte@hull.ac.uk](mailto:darte@hull.ac.uk)

Section One: Brief Information about the Applicant	
<b>Role currently held:</b>	Reader in Bioscience Education, Director of Education for School of Natural Sciences
<b>Subject group/discipline:</b>	Biological Science
<b>Level 4 and above qualifications:</b>	BA Natural Sciences (Plant Science) PhD (Plant Science)
<b>Current category of Advance HE Fellowship</b> <i>(if applicable):</i>	SFHEA
<b>Length of employment at the University of Hull (years):</b>	8 years
<b>Total length of teaching experience in Higher Education or HE in FE (years):</b>	20 years

## Section Two: Reflective Commentary

*A scholarly reflection on the applicant's teaching and learning and leadership practice, mapped to the UKPSF*

Principal Fellows are individuals who, as highly experienced academics, are able to provide evidence of a **sustained and effective record of impact at a strategic level in relation to teaching and learning**, as part of a wider commitment to academic practice. This may be within their institution **or** wider (inter)national settings.

Typically, those likely to be at Descriptor 4 (D4) include:

- a) Highly experienced and/or senior staff with wide-ranging academic or academic-related strategic leadership responsibilities in connection with key aspects of teaching and supporting learning
- b) Staff responsible for institutional strategic leadership and policy-making in the area of teaching and learning
- c) Staff who have strategic impact and influence in relation to teaching and learning that extends beyond their own institution.

Please provide a scholarly reflection on the education, training, employment, roles and experience which have contributed to your professional development as teacher, mentor, facilitator of learning and academic leader, mapped to the UKPSF.

*Written Submission Route only: 2,500 words (excluding references)*

*Assessed Professional Dialogue: 1,500 words (excluding references)*

## Developing an education focussed academic identity: In search of Ikigai [2490 words]

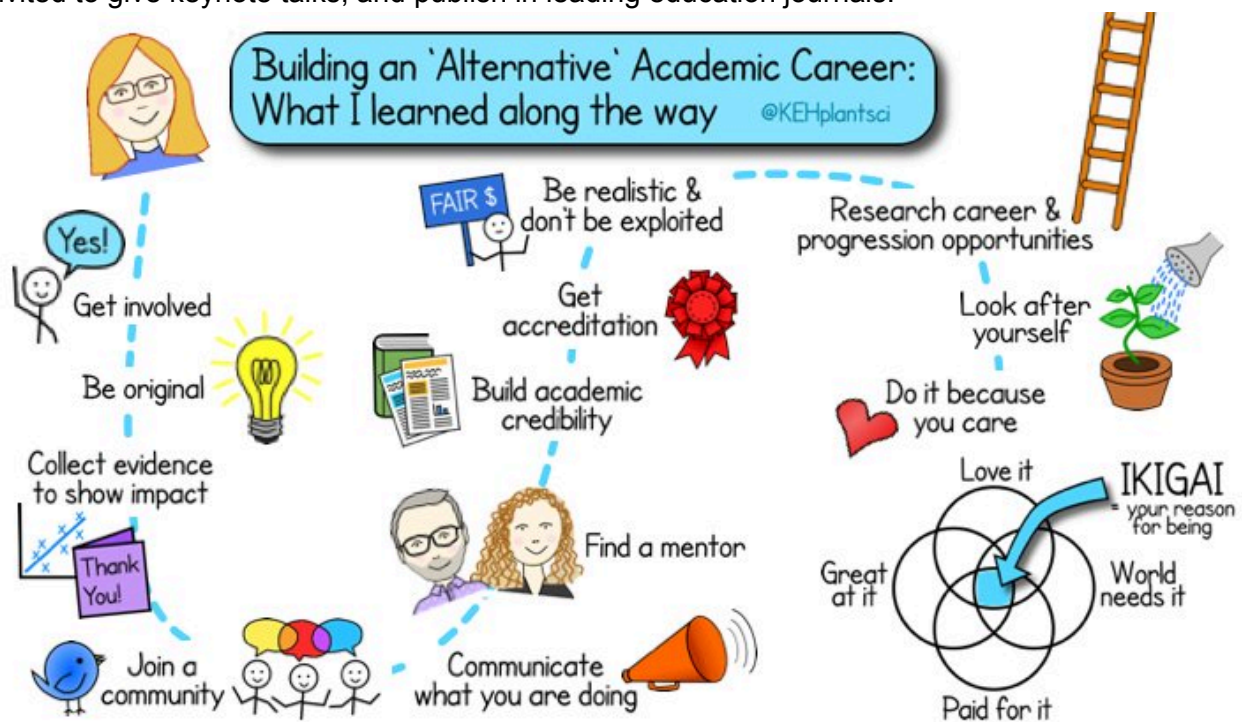
*"Katharine is a hugely influential figure in UK Bioscience education. She has throughout her career improved outcomes for her own students and improves the practice of academic colleagues so that they in turn can improve the learning outcomes for their students. This is the mark of a true leader in the field." – Dr Nick Freestone NTF SFHEA FRSB, Kingston University*

*"Katharine has an energy and passion to teach like no other. We all felt like she personally cared that everyone in the room achieved their absolute best." – 1st year student*

When I discuss career development with other academics and early career researchers, I draw inspiration from the Japanese concept of Ikigai (生き甲斐) which approximately translates as 'a reason for being' (Figure 1). For me, there is an intrinsic link between my sense of purpose and my identity as an education focussed academic.

However, as an early career researcher, I was directly told *"There's no such thing as a career in HE teaching"*. The research focussed academic who said it was trying to ensure I wasn't chasing an impossible dream, but for me it was a real turning point. There are thousands of biology undergraduates graduating from UK universities every year. Surely that advice was wrong, and there was space for me to carve out an education focussed career? One where I could inspire my students, develop my passion for teaching and become recognised within my field on a par with research colleagues?

Fast forward 13 years, and here I am writing my application for Principal Fellowship of Advance HE. I am recognised as a national leader in the field of UK bioscience education, hold a National Teaching Fellowship, have multiple international and national teaching awards, am regularly invited to give keynote talks, and publish in leading education journals.



**Figure 1: Career advice I give to those considering an education focussed academic career. I have given this talk to hundreds of early career scientists at invited talks and at my President's address to the Society of Experimental Biology meeting (2018).**

So how did I become an education focussed academic? For me, it has not only been about the jobs and positions I have held, but a deep sense of personal identity as being proudly education focussed. Van Lankveld et al., identify five components of developing a teacher identity; (i) a sense of appreciation, (ii) a sense of connectedness, (iii) a sense of competence, (iv) a sense of commitment, and (v) imagining a future career trajectory (van Lankveld et al., 2017). I will structure my remaining reflection around these five components, in the order which has been most relevant to my own career

## Imagining a future career trajectory

Throughout my PhD (2004-2008) I built up considerable teaching experience through giving small group tutorials (2-3 students) and demonstrating for laboratory classes [K1,K2]. I then moved to the USA for a postdoctoral position (2009-2010), assuming that my career would be as a research-focussed academic. I hated it. I struggled to find joy in the research, and eventually left the position early due to serious mental health concerns. While I recovered, I reflected long and hard on my experiences. Why had I hated my postdoc when I had enjoyed my PhD so much? The answer came to me in a moment of clarity; I hadn't had any contact with undergraduates as a postdoc - perhaps it was actually teaching that I really enjoyed? I returned to Cambridge to teach on a freelance basis, then became a teaching-by fellow at Churchill College where I also took on pastoral responsibility [A4]. While I enjoyed this role, I still felt I had failed at the research career everyone expected me to take, and being teaching focussed was not a legitimate choice.



I then became a teaching associate (2013-2015), where I was responsible for mentoring other PhD students who taught, developing and delivering new practical classes and resources, lecturing and acting as an undergraduate examiner [K1,K2,A2]. While I found this job fulfilling, I felt the isolation of being the only education-focussed person in my department. With '*there's no such thing*' ringing in my ears, I considered leaving HE. I then saw a flyer for a meeting of the Society of Experimental Biology (SEB) on 'Teaching and communicating science in a digital age' (2014). Attending that meeting was transformative. I found a community of bioscientists who valued teaching [A5]. I saw that other academics in other universities had been promoted to full professor as a result of their educational activities, something I never imagined possible. I started to reimagine myself not as a 'failed researcher' but as a successful teaching-focused academic. I was going to be a bioscience educator and be proud of it.

## A sense of appreciation

I approached my role with new energy. I obtained institutional funding for a student partnership project (2015) to create online resources to support undergraduate practical teaching [K4], leading to my first peer-reviewed education paper (Hubbard et al., 2017) [V3]. I was awarded the Cambridge Student Union Teaching award for 'Excellence in Lecturing' (2015), the first external validation of my teaching quality. As my confidence in education grew, I found I was more appreciated within my department and institution. I was invited to present the student partnership project at a university level teaching and learning event, and subsequently obtained FHEA (2015). I was also nominated for the competitive Royal Society of Biology HE Teacher of the Year award by my Head of Department as a sign of appreciation after the department was unable to make my contract permanent. I became the first early career and first female winner of the award in 2016.

I moved to the University of Hull (UoH) in 2016, my first permanent role after ~10 years of teaching experience. Although I enjoyed my teaching, I struggled to find a distinctive role within the department. This changed when the university switched to a new virtual learning environment (VLE). The student partnership project had shown me the transformative impact of contemporary VLEs [K4]. Tierney highlights the value of education focussed academics 'brokering' between scholarly approaches to teaching and disciplinary academic practice (Tierney, 2016). I volunteered myself as the department's VLE champion, working with the digital learning team to explore the potential of the new platform, providing advice and support workshops for colleagues and delivering training for students [K4]. I also designed ways of giving effective feedback at scale which were implemented within biology, and then in other departments and partner colleges [A3]. My brokerage work around digital tools was core to my successful application for SFHEA (2017), and resulted in my 'Innovative Lecturer' award from the Hull Student Union (2018) [K4].

## A sense of connectedness

Belonging to a community of educators has been essential for my professional development and academic identity [A5]. My early engagement with educational communities was through the Society of Experimental Biology (SEB), Royal Society of Biology (RSB) and Heads of University Bioscience (HUBS), and now extends to the Association of National Teaching Fellows (ANTF) and the Staff and Educational Development Association (SEDA). I have given over 20 invited talks, workshops and keynotes on various aspects of my practice and research in the last five years. I was one of the first invited contributors to the international online [#DryLabsRealScience](#) network during the Covid-19 pandemic, sharing my expertise in alternatives to laboratory projects during lockdown [K2,K3]. The [#DryLabsRealScience](#) network has over 700 members, including bioscience educators from across the globe develop innovative teaching through the pandemic and beyond. Since 2018 I have organised six education focussed conference sessions and meetings, including the SEB 'Decolonising and Diversifying Bioscience Education' symposium

(2022) [V1,V2] and the HUBS funded 'Inspiring, developing and supporting the future stars of Bioscience Education' (2021).

I wanted to give back to the community, and provide the connections and networks I wished I had had in the early stages of my career. In 2021 I co-established the national [Bioscience Educators Network \(BEN\)](#), a community of >120 education focussed academics across the biosciences from over 40 institutions, with over 50 mentor-mentee pairs [A5]. BEN has had a significant impact, supporting members to over 30 academic promotions, at least 12 AdvanceHE fellowships and 3 new National Teaching Fellows [See Case Study 2]. In 2019 I was selected as a judge of the RSB HE Bioscience Teacher of the Year Award on the basis of my reputation for championing educational excellence at national level. Since joining the judging panel and making improvements aiming to increase diversity of nominees the shortlisted candidates and winners have been gender balanced, and increased ethnicity and disability representation [See Case Study 2]. My impact within the bioscience education community was recognised by the SEB President's Medal for Education, Outreach and Diversity (2018). In 2019 I was awarded my National Teaching Fellowship, with my narrative focussing work I had done within the biosciences to champion education-focussed academics.

## **A sense of competence**

As my confidence and expertise grew, I took on more responsibility for teaching. I was the programme director for BSc Biology (2018-2020), during which time our NSS scores increased significantly from 69% to 94% overall satisfaction [K5]. Specific interventions I introduced included regular student voice orientated events and actively involving students in course development meetings. I also identified significant weaknesses in the laboratory/molecular side of biological sciences, so through curriculum transformation I introduced significant inquiry-driven practical components as an effective method to engage students in the authentic process of scientific discovery (Healey & Jenkins, 2009) [A1, K1, K2, K3]. I supported colleagues in designing more innovative and authentic competency driven assessments [A3,K3], sharing my pedagogical experience [V3]. I have also shared this experience through being panel member/chair for over 10 university validation panels, supporting programme teams to meet quality standards and embed effective pedagogies [K6].

In 2022 I became Director of Education for the School of Natural Sciences, overseeing a broad interdisciplinary portfolio. In this role I have supported teaching teams with the Transforming Programmes process and in revalidating their programmes with relevant professional bodies [K6]. I co-chair the School Education and Student Experience Committee and am a key part of the School Executive Committee. As such I contribute to strategic planning and appropriate oversight and development of all programmes in the school, ensuring they contribute to the educational excellence and mission of the university [A1,A4]. I am also an invited external examiner for the Universities of Leicester and Plymouth, and more recently a collaborative provision contact for the Doncaster College Group [V4,K6].

## **A sense of commitment**

The most rewarding aspect of education for me has always been seeing students reach their full potential. In 2019 I joined the Teaching Excellence Academy at UoH, where I led the institutional approach to closing awarding gaps [V2]. My approach linked the institutional Access and Participation Plan (APP) to pedagogical design, assessment models and quality processes [A3,K2,K6]. I developed data dashboards giving awarding gap data to programme teams, embedded awarding gaps into quality processes, identified subject areas with large gaps and supported those subject areas with developing action plans [V4,A4] [See Case Study 3].

My commitment to inclusion has had a sector wide impact. I was invited to contribute to an AdvanceHE collection of articles on the Hidden Curriculum (Hubbard et al., 2021). I organised an international symposium via the SEB on '[Decolonising and Diversifying the Bioscience Curriculum](#)' attended by 80 UK and international delegates (December 2022). I was selected as a member of the [QAA Subject Benchmark Statement review group for biosciences](#) (2023), therefore had national strategic input over quality standards for bioscience programmes [K6]. My input focussed on expectations about high quality inquiry-driven practical activity, and setting the expectation that practical work was inclusive of all students [V1,V2,K3].

As my career has developed I have become increasingly committed to publishing high quality educational research and scholarship, leading to publication in international high-impact journals [See Case Study 4]. Hubbard and Dunbar (2017) has been accessed over 46,000 times, Smith and Hubbard (2023) has been accessed over 4000 times, and two articles on decolonisation published in early 2024 have already been accessed over 800 times. My recent paper on how awarding gaps are measured in current UK HE policy has already been accessed 1000 times in the first 3 months since publication (Hubbard 2024) [V3,V4]. Over the last 8 years I have published 23 education focussed articles (to date) with over 250 citations indicating scholarly impact on an international level [A5,K5,V3].

My proudest achievement has been leading the development of a sector leading Inclusive Education Framework, thereby supporting colleagues in developing inclusive pedagogy and practice [See Case Study 1]. The [University of Hull Inclusive Education Framework](#) (launched 2021) was a central part of the institutional narrative leading to TEF gold (2023), and was highlighted as an example of excellent sector level practice in the [QAA 'Evaluating Excellence' report](#) (2024) and [AdvanceHE TEF 2023: Patterns of Excellence report](#) (2024). I was awarded funding from the QAA collaborative development fund to develop a sector appropriate version of the Inclusive Education Framework in a multi-institution project [See Case Study 1]. Our revised [Inclusive Higher Education Framework](#) was launched in May 2023, and has since been presented at multiple (inter)national conferences and institutional keynote addresses (e.g. Open University 2022, University of Reading 2021, University of East Anglia 2023, Harper Adams University 2024, Nottingham Trent University 2024, Improving University Teaching Conference. 2024) [V3]. My commitment to inclusive education therefore drives my practice, leadership and research, all of which contribute to learning environments where all members of the academic community are able to fulfil their potential [V1].

*"Katharine's keynote on the University of Hull's Inclusive Education Framework was extremely well received. As a result of her talk my team has tried to focus our efforts, trying to be less individual project oriented and more holistic in our approach using the framework as a way of marshalling our activities into a coherent plan."* – Diane Butler, Associate Dean Academic Excellence, STEM Faculty, Open University

*"[Katharine's] leadership of the Inclusive Education Framework project has given strategic direction to all partners and resulted in significant impact on practice at York St John University, where the framework is being wholly adopted."* – Dr Mark Dransfield, York St John University

## Overall reflections

For me, developing my professional sense of purpose has been inherently connected to my teaching identity within academia. Through my sustained strategic leadership of inclusive pedagogy initiatives and positive influence on colleagues and senior leaders, I have successfully catalysed change. I have worked with and learned from many UK-based and international academic colleagues, sharing best practice on academic and pastoral student support. I have led evidence-based pedagogical approaches to support a diverse range of students to reach their full



potential. I have proved that academic wrong; there is such a thing as an education focussed career in HE. I have found my Ikigai.

### Section Three: Examples of Professional Practice demonstrating a sustained and effective record of impact at a strategic level in relation to teaching and learning

In this section you should provide brief examples of professional activity.

Evidence for D4 must demonstrate a **sustained record of effective strategic leadership in academic practice and academic development** as a key contribution to high quality student learning. Individuals should be able to provide evidence of:

- I. Active commitment to and championing of all Dimensions of the Framework, through work with students and staff, and in institutional developments
- II. Successful, strategic leadership to enhance student learning, with a particular, but not necessarily exclusive, focus on enhancing teaching quality in institutional, and/or (inter)national settings.
- III. Establishing effective organisational policies and/or strategies for supporting and promoting others (e.g. through mentoring, coaching) in delivering high quality teaching and support for learning.
- IV. Championing, within institutional and/or wider settings, an integrated approach to academic practice (incorporating, for example, teaching, learning, research, scholarship, administration, etc.).
- V. A sustained and successful commitment to, and engagement in, continuing professional development related to academic, institutional and/or other professional practices.

**For Principal Fellow successful engagement with all the Dimensions of Practice is required.**

Applicants must provide evidence of:

- All Areas of Activity (AA)
- All Core Knowledge (CK)
- All Professional Values (PV)

**Ten to thirteen examples** should be sufficient to provide evidence of the range of learning and teaching activities you have undertaken.

**Each example in this section must be no longer than 100 words.**

No.	Examples of professional practice (please include dates)	D4.I	D4.II	D4.III	D4.IV	D4.V
1	I led an institutional and cross-institutional project to develop an Inclusive Education Framework (2020-2024). I led the QAA funded project involving multiple stakeholders across seven institutions, integrating insights from the literature, focus groups and workshops to provide a robust understanding of the breadth and depth of inclusive practice. Both projects produced high quality resources and case studies to support the framework, which have been		√		√	

	downloaded thousands of times, and highlighted as sector leading practice in reports by the QAA and AdvanceHE. I have been invited to multiple institutions to present the work, and am the lead author of a multi-author paper describing the projects (currently under-review). [V2,A4,A5,V3]					
2	I was selected as a member of the QAA Subject Benchmark statement review group for the Biosciences (published 2023). This strategic work has national impact, establishing quality standards for all bioscience programmes [K6]. My specific contribution was towards the 'nature of the subject' section, where I established expectations that all bioscience programmes include appropriate inquiry- practical work (laboratory, field or computational) and that this should be inclusive of all students [K1-3].	√	√			
3	I led the development of the 'molecular end' of the UoH biological sciences portfolio during the Transforming Programmes process (validated in 2021). I used insight from students and employers to refocus degree programmes, incorporating new biotechnology, biochemistry and cell biology modules to respond to developments in the discipline and student demand. As Programme Director (2018-2022) and Director of Education (2022-present) I have introduced substantively more inquiry-driven practical work into the programmes, including intensive lab courses and flagship project modules giving students training in cutting edge techniques. I have supported staff to introduce practical competency portfolio assessments and develop appropriate assessment criteria. [A1,A2,K2,K3]		√		√	
4	I am the Director of Education for the UoH School of Natural Sciences (2022-present), overseeing an interdisciplinary portfolio of maths, physics, chemistry, biochemistry, biology and zoology. During my leadership the school has developed a new MSc programme, seen two portfolios successfully through Transforming Programmes and re-gained accreditation from professional bodies. I have supported staff to develop innovative approaches to learning, teaching and assessment, ensured quality standards, and work closely with subject heads and the school executive to ensure smooth running of programmes. [A1,A4,K6]		√			
5	I have established and run a national network of Bioscience educators with support from the Royal Society of Biology Heads of University Bioscience group (RSB HUBS). The network was established in 2021, and has over 120 members from at least 40 HE institutions. It provides both a mentoring scheme and regular network meetings to support a community of			√		√

	practice. The network directly supports career development for education focussed academics in bioscience from junior teaching fellows to professors, and many network members have successfully obtained promotion, AdvanceHE fellowship or national teaching awards [see case study 3]. [V4,A5]					
6	As Senior Fellow of the Teaching Excellence Academy, I led the university approach to closing awarding gaps as outlined in the Access and Participation Plan. In collaboration with professional services teams I developed subject level awarding gap dashboards, delivering student outcome data to relevant staff. I supported staff in areas of concern to identify interventions to close awarding gaps, particularly around inclusive assessment. I was a member of the university education committee and reported annually on awarding gaps, and contributed to institution level reports. I reported on awarding gaps to University Leadership Team and University Council, increasing awareness of awarding gaps across the institution [V1,V2,K6,A3].			√	√	
7	I have published multiple educational research papers in international journals, including Higher Education, International Journal of Science Education and CBE Life Sciences Education. I have published theoretical and empirical papers on disciplinary literacies, effective pedagogies for practical science teaching, decolonisation of the biosciences curriculum and the role of metrics in HE policy relating to widening participation and equity of student outcomes. Many articles have been downloaded thousands of times, and I have over 250 citations for my education focussed papers. I also regularly peer review educational papers for leading journals in the field. [A5,K5,V3]	√				√
8	I have worked extensively with the Society for Experimental Biology (SEB) and Royal Society of Biology (RSB) promoting education and EDI focussed activities. I have organised an international symposium (Decolonising and diversifying biosciences education 2023), education focussed sessions at the annual international main meeting (2017,2020,2024) and am a member of the Outreach Education and Diversity (OED) working group. I was awarded the President's Medal for OED excellence in 2018. As a former winner, I have been a judge of the RSB HE Bioscience Teacher of the year since 2020, and have overseen multiple changes to the award resulting in a greater diversity of shortlisted candidates and winners. [K1-3, A5]	√	√	√		

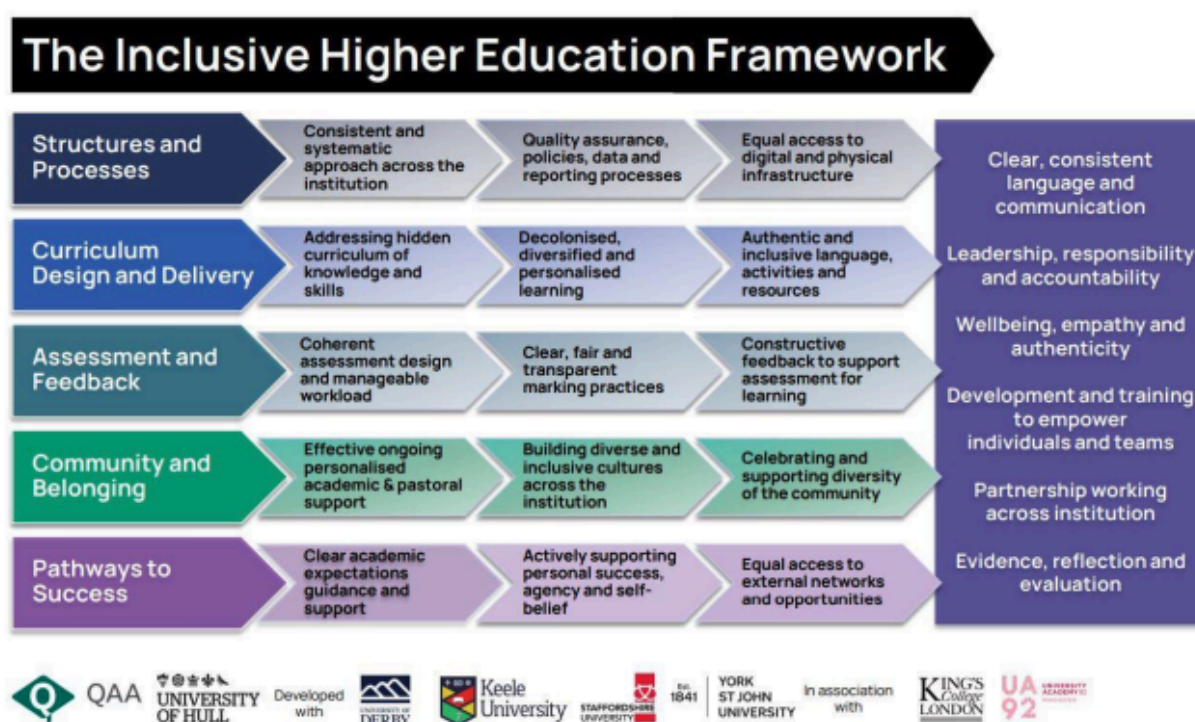
9	I have undertaken multiple roles as an external expert in bioscience education. I am the external examiner for the University of Leicester Biological Sciences foundation year (2022-2025) and the University of Plymouth BSc Biological Science (2024-2028). I am the academic contact for UoH partner colleges (Doncaster Colleges Group, BSc Animal Welfare Science, BSc Medical Bioscience). I am also regularly asked by other institutions (e.g. University of Cardiff, University of Glasgow, Purdue University USA) to make promotion recommendations for education focussed academics in the biosciences, reviewing applicant documents and benchmarking candidates against institutional criteria and sector level expectations [V4,A5, K6].			√		
10	I have worked in partnership with students to design effective support structures. I worked with Hull University Student Union to get insight into reasons underpinning institutional inequity in degree outcomes. In partnership with the President of Inclusivity I reviewed the UoH mitigating circumstances policy, and made recommendations including the inclusion of collective trauma as a valid reason for mitcircs (2021). I was on the working group for the new UoH Additional Considerations regulations (introduced 2022) which have resulted in a more inclusive set of processes to support all UoH students in their studies [A4,V1,V2].		√		√	
11	I have supported colleagues within biological sciences and beyond to create more effective learning environments and innovative or authentic assessments relevant to programme competencies. As a result the programme team have introduced new assessments including industry biotechnology challenges, infographics and competency portfolios. To raise the profile of successful elements of our programme design and assessment strategy I published ' <a href="#">Plant Biology Education: A Competency Vision for the Future</a> ' (Hubbard, 2024), and am lead organiser for a forthcoming <a href="#">international plant biology education symposium</a> designed to support educators in innovating within the discipline. [A1,A2,A3,A5,V3]		√	√		
12	I have created teaching resources with international reach. I was the first guest contributor to the American Society of Plant Biology 'Teaching Tools in Plant Biology' series, producing resources focussed on the plant circadian clock (K. E. Hubbard & Dodd, 2016). I have written for Science in Schools, a European wide journal to support school level science teaching and The Conversation. I also run a YouTube channel of teaching videos, which has had ~450,000 hits since launching in 2016. Some videos have over 60,000 hits, and I am regularly contacted by students around the	√	√			

	world asking for support with their studies or with requests for new videos. [K1,K4]					
<b>Section Four (Written route only): Case Studies. Evidence of Leadership, Success and Impact in Learning and Teaching</b>						
<p><b>D4.I Active commitment to and championing of all Dimensions of the Framework, through work with students and staff, and in institutional developments should be embedded within the whole application.</b></p> <p>You are invited to submit <b>four written case studies</b> in the section below (<b>800 words each</b>, excluding references).</p> <p>For each of the four case studies you should:</p> <ul style="list-style-type: none"> <li>• Describe the context.</li> <li>• Explain clearly the specific role that you undertook.</li> <li>• Critically analyse and evaluate the success and impact of the activity, making use of evidence from data, student feedback, mentee feedback, as appropriate.</li> <li>• Provide evidence of scholarly activity associated by embedding within it reference to key sources related to pedagogy in your discipline or more generally in higher education.</li> <li>• Map throughout to the UKPSF Dimensions of the Framework.</li> </ul>						
<p><b>Case Study 1: Development of a Sector Leading Inclusive Education Framework [803 words]</b></p> <p><b>D4.II: Successful, strategic leadership to enhance student learning, with a particular, but not necessarily exclusive, focus on enhancing teaching quality in institutional, and/or (inter)national settings.</b></p> <p>I have always believed that excellence in education must be inclusive. Inclusivity is increasingly a core value in UK HE, with organisations such as the Quality Assurance Agency (QAA) and Office for Students (OfS) establishing clear expectations that <i>“from admission through to completion, all students are provided with the support that they need to succeed in and benefit from higher education”</i> (Quality Assurance Agency, 2018) [V2,V4]. Equality, Diversity and Inclusion (EDI) is now also embedded in all QAA subject benchmark statements, setting expectations of inclusive practice [K6,V4]. However, the aspiration to be inclusive is often compromised by conflicting definitions and conceptualisations of inclusive education (Stentiford &amp; Koutsouris, 2021).</p> <p>In 2019 I joined the University of Hull (UoH) Teaching Excellence Academy (TEA) on a secondment post to address institution level awarding gaps (disparities between demographic groups in degree class awarded) [V1,V2]. As part of this work I co-led the development of an institutional Inclusive Education Framework (IEF). We first drew on relevant literature, particularly Mountford-Zimdars et al., (2015) to create an initial framework which was then iteratively developed in consultation with stakeholders across the institution [V3,A5]. Our final framework was structured around five key areas; (i) structures and processes (ii) curriculum (iii) assessment and feedback (iv) community and belonging and (v) pathways to success [A1,A2,A3,A4]. In</p>						



addition we developed practice focussed resources including inclusive education checklists and case studies. The UoH framework launched in 2021 and has been accessed over 20,000 times (as of June 2024) indicating significant ongoing engagement. We supported rollout of the framework with staff development workshops across 12 subject areas in all four UoH faculties, providing advice and support to programme teams.

Building on this, I led a successful funding bid to the [QAA's Collaborative Development Fund](#) (2020) to support development of a cross-institutional version of the framework in collaboration with seven HE providers. We conducted focus groups and workshops with stakeholders at all institutions, from senior university leaders to student representatives. I then led a thematic analysis of responses to generate a revised version of the framework (Figure 2). I also oversaw the production of an accompanying online resource bank of case studies, checklists and a self-paced online learning course [V3,K4]. We launched the cross-institutional framework in May 2023 through a national online event.



**Figure 2: The Inclusive Education Framework generated by the QAA funded project.**

*"[Katharine] has demonstrated exceptional leadership in managing a multiple stakeholder project and producing a valuable resource for the Higher Education community. I consider Katharine as a national leader of bioscience pedagogy shaping policy and practice."* – Prof Ian Turner NTF PFHEA, University of Derby

*"It has been really nice to connect with other institutions and I've felt very supported by the project leaders. The experience has been enormously valuable in terms of developing professional networks because of the opportunity to collaborate with colleagues from other institutions and from a range of different disciplinary backgrounds."* - Project Steering Group Member

The framework website ([www.inclusiveeducationframework.info](http://www.inclusiveeducationframework.info)) has been accessed over 1000 times since the launch, and the framework downloaded 160 times from the National Teaching Repository. I have presented the framework at national level events (e.g. SEDA conference Nov

2023, Association of National Teaching Fellows April 2024) and have been invited to multiple institutions to present the work. The framework itself has been embedded into pedagogical development at York St John University, and I have been invited to give keynote addresses at both the International Federation of National Teaching Fellows and Institute of Biomedical Sciences focussed on the framework.

I have also led the writing of a paper currently under review at *Higher Education* focussing on the development of the framework [A5,V3]. My QAA project proposal has also been adapted for two further successful applications from UoH to the QAA collaborative development fund ([Generating a Competence-Based education framework](#) and [A Competence-Based Assessment Framework](#)), increasing the capacity and profile of the UoH Teaching Excellence Academy at a national level.

Both versions of the framework have been identified as sector leading by external bodies. The UoH framework was an integral part of the institutional narrative leading to the award of TEF Gold in 2023. Two high-profile reports summarising insights from TEF Gold institutions have since highlighted the IEF and broader institutional approach to inclusive education as sector leading practice ([QAA 'Evaluating Excellence' report](#), 2024; [AdvanceHE TEF 2023: Patterns of Excellence report](#), 2024). The QAA report also presented the cross-institutional framework as its leading recommended resource to support SE1 Teaching Assessment and Feedback, recognising the impact and potential of the framework for the sector [A1,A2,A3,K2,K3]. Finally, the IEF has been adopted by a professional body (the Institute of Biomedical Science) as a resource for course leads both in the UK and internationally when designing and developing their programmes [K6,V4].

## Case Study 2: Support for Education Focussed Academics through national level networks and awards [768 words]

**D4.III: Establishing effective organisational policies and/or strategies for supporting and promoting others (e.g. through mentoring, coaching) in delivering high quality teaching and support for learning.**

I have always championed the status of education-focussed academics. The relative lack of recognition and reward for education-focussed academics has long been recognised (Cashmore et al., 2013). While there are increasing numbers of academics promoted on the basis of their teaching (National Conference of University Professors, 2023), career development for education focussed academics remains highly variable between institutions [V4]. Over the last 8 years I have personally mentored over twenty academics both within Hull and at other institutions, supporting them with fellowship and promotion applications.

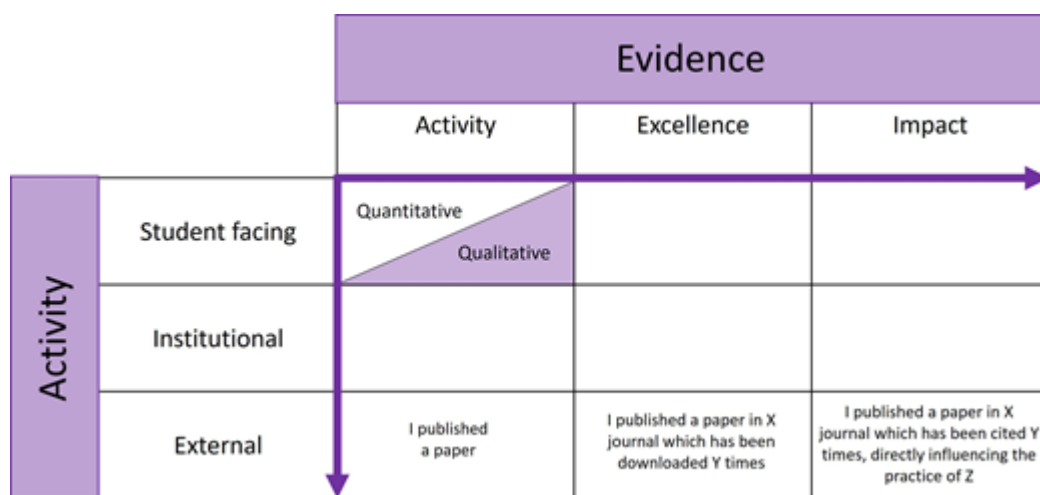
*"Katharine was completely clear about how my SFHEA application should be updated to demonstrate I was meeting the criteria. She was forthright yet constructive in her criticism of my application and explained why it was not yet suitable. I consider this insight was critical to improving my application so that it was successful."* – Academic Staff Mentee

In the early stages of my career I published a reflective essay co-authored with four early career teaching-focussed colleagues across multiple institutions highlighting the challenges and opportunities for academics in education focussed roles (K. Hubbard et al., 2015). This article has been viewed over 4000 times with 700 downloads, and has been highlighted in conference keynotes as an example of championing teaching excellence and career development (e.g. Abel Nyamapfene, Enhancing Student Learning Through Innovative Scholarship, 2017).

Through the Covid-19 pandemic, the fragmented community of education focussed academics within the biosciences embraced the use of digital platforms to come together. I co-founded the national [Royal Society of Biology Bioscience Educators Network](#) (RSB BEN) launching at the Royal Society of Biology funded event ‘Inspiring, developing and supporting the future stars of Bioscience Education’ [Feb 2021]. The subsequent network involves (i) paired mentor-mentee relationships that meet to provide personalised support (ii) regular online monthly meetings to provide support and opportunities for discussion/collaboration between network members and (iii) online discussion boards for support between meetings [A5]. We have had 4 cohorts with over 120 members from 40 institutions engage with the network thus far, with over 50 mentor-mentee pairs. Since establishing the network we are aware of over 30 academic promotions, at least 12 AdvanceHE fellowships and 3 new National Teaching Fellows.

*“Being part of [the BEN] community has empowered me to really take ownership of being a proud teaching-focused academic - it is an endless joy to talk to people who love what they do, despite the challenges we face, and that has helped me to work towards my goals in terms of leadership and activity/outputs.” – Network Member*

As part of the training given to mentoring cohorts I run a workshop on ‘Evidencing Teaching Excellence’, which gives practical advice and activity, excellence and impact framework for fellowship and promotion applications (Figure 3). I published this guidance and framework as an article in The Biochemist magazine (Smith & Hubbard, 2023); this article has been accessed over 4000 times with 500 downloads, and was the [5th highest trending article across all Biochemical Society publications](#) in 2023, indicating significant engagement from the community.



**Figure 3: My framework for evidencing teaching excellence, presented at four cohort introduction meetings of the Bioscience Educators Network and published in Smith & Hubbard, 2023).**

*“Katharine’s Evidencing Teaching Excellence framework around activity/excellence/impact has been central to evidencing my development and that of others. This is now embedded in my mentoring of NTFs and the career development of early career lecturers in my own and other institutions through the Bioscience Educators Network” – Professor David Smith NTF SFHEA, Sheffield Hallam University*

As a former winner I have also been a judge for the Royal Society of Biology HE Bioscience Teacher of the Year (HEBTOY) since 2019. This nationally competitive award seeks to champion exceptional educators within UK bioscience. However, when I joined the judging panel there had been concern within the community about the inclusivity of the award, as there had been three

consecutive years with an all white able-bodied male shortlist. When I joined the panel I introduced EDI monitoring processes, and led a revamp of the publicity materials to highlight more visible and diverse role models from previous winners. We also made the judging criteria and application forms more transparent, and introduced an annual support webinar which I co-deliver with fellow judge Dr Nick Freestone (Kingston University) and recent winners. Since joining the judging panel the shortlisted candidates and winners have been gender balanced (shortlist 7 male: 8 female; winners 2 male: 3 female), with greater diversity represented (2 winners with disabilities, 1 Black winner). As such, the network is now much more representative of the community of UK bioscientists, providing a diverse set of role-models for future bioscience educators [A5,V2].

### **Case Study 3: Championing an Integrated approach to Justice, Equity, Diversity and Inclusion [802 words]**

**D4.IV: Championing, within institutional and/or wider settings, an integrated approach to academic practice (incorporating, for example, teaching, learning, research, scholarship, administration, etc).**

Justice, Equity, Diversity and Inclusion is at the heart of my teaching philosophy, and drives everything I do. However, I am often frustrated by both the lack of urgency and lack of evidence driven practice in this space. Many educational leaders talk about the importance of inclusion, but turning this into meaningful action that improves the outcomes and lived experience of students requires an integrated, structural and evidence driven approach.

Within my institutional work, I was the university lead for awarding gaps during my secondment post to the Teaching Excellence Academy (2019-2023). Awarding gaps are demographic based inequalities in 1st/2i degree classification (Universities UK & National Union of Students, 2019). My work directly supported institutional implementation of the Access and Participation Plan (APP), a formal agreement with the Office for Students as the national HE regulator [V2,V4]. The UoH APP sets out a commitment to close four awarding gaps on the basis of low participation in HE (POLAR quintile), age, ethnicity and disability.

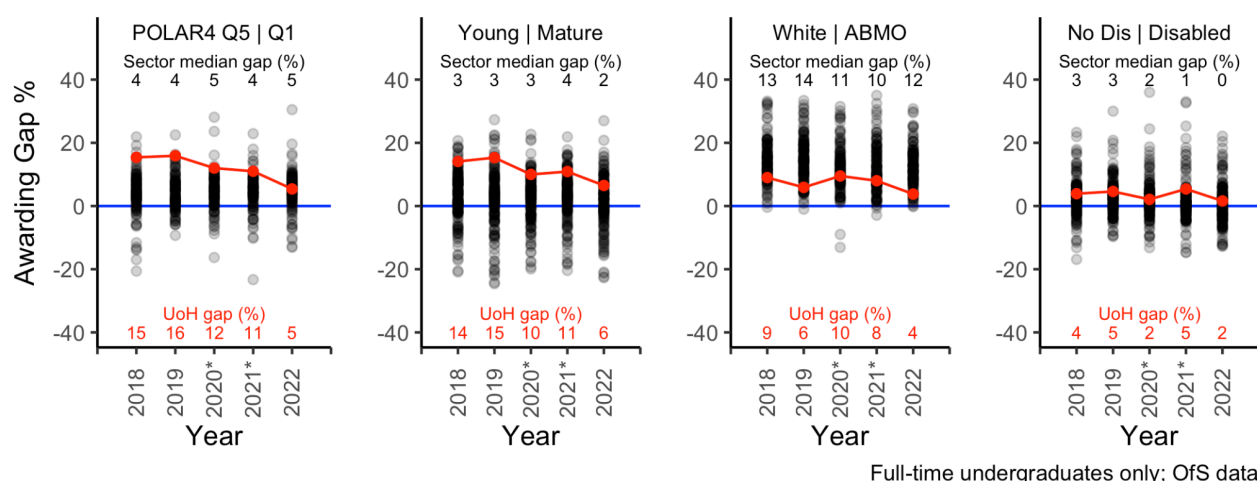
My approach to our APP and closing our awarding gaps emphasised the structural role of the institution and assessment methods [A3], in contrast to that of many providers who focussed actions on deficit model interventions such as student bursaries (Dickenson, 2021). I immediately identified a need for appropriate availability of awarding gap data, and the need to integrate awarding gap interventions with routine quality and reporting processes [K6]. I led a project in collaboration with central university teams to develop programme level awarding gap dashboards, and to include awarding gaps into processes such as Continual Monitoring Enhancement and Evaluation (CMEE). I also developed an '[awarding gap audit tool](#)' building on the structure of the IEF (see Case Study 1); at least 10 programme teams across all four faculties at UoH have used the tool to evaluate their current practice and identify evidence-based interventions to close their awarding gaps. I led a series of workshops supporting programme teams in all four UoH faculties to use the dashboard, identify actions to reduce their gaps, particularly in terms of assessment design and support for students [A3,A4]. Actions identified including revising assessment strategies, developing more objective marking criteria and embedding assessment literacies into taught sessions [A3].

*"Thanks for the [awarding gap] workshop last week. I can tell you in all honesty that my colleagues were impressed and felt that they had really learned something. ... We found this to be very helpful and we are acting in conjunction with our AD(Education) to incorporate some of the ideas into our final TP documentation." – Workshop participant, Head of Department*



*“From personal experience, KH’s work on identifying and working towards reducing the BAME, and particularly Black students’ awarding gap has been phenomenal” – HUSU President of Education*

As such I directly championed the use of evidence-based approaches to closing awarding gaps at institutional level [V2, V3]. UoH has made significant progress towards closing multiple awarding gaps and is on target to meet the APP commitments for 2024/25 (Figure 3).



**Figure 4: University of Hull Awarding Gap data for the four APP targets, benchmarked against the sector. UoH is shown in red, all other institutions in black. POLAR4 = Participation of Local Areas; Q5 = Quintile 5, Q1 = Quintile 1. ABMO = Asian, Black, Mixed and Other. \* indicates years directly impacted by the Covid-19 pandemic.**

At national level I am a leading figure working to embed educational equity and inclusion within the biosciences. I was selected as a member of the Quality Assurance Agency Advisory Group for the Biosciences Subject Benchmark Statement (SBS) through a competitive process in 2022. I provided expertise into the ‘Context and Purposes of a Biosciences Degree’ section [K2,K3,V2]; I particularly worked on embedding inclusivity and authentic practical skill development for all students into this section, providing clear guidance to academics across the UK bioscience sector [V1,V2].

In addition, I successfully applied for funding and organised an international symposium on “Diversifying and Decolonising the Biosciences Curriculum” (2022), attended by ~80 in-person and online delegates, including students and academics [A5]. Topics covered included racial justice in HE, closing awarding gaps, ableism in biology, practical toolkits for decolonising in diverse areas of bioscience, and a global panel discussion bringing in voices from Africa, Asia and the Caribbean. Stimulated by the meeting, I then led the writing of two articles on decolonisation within the biosciences (Joshi et al., 2024; Mansfield et al., 2024) and a further article on ableism and eugenics within bioscience education (da Silva & Hubbard, 2024). One of the decolonisation articles was one of the top 10 trending articles across Biochemical Society publications, indicating significant engagement from the wider community (Biochemical Society, 2024). By integrating my practice, professional networks and educational research, I am able to challenge colleagues across the sector to adopt pedagogies that can achieve genuine equity and inclusion.



## Case Study 4: From ignorance of scholarship to educational research [774 words]

**D4.V: A sustained and successful commitment to, and engagement in, continuing professional development related to academic, institutional and/or other professional practices.**

Engaging in pedagogical research and scholarship can develop and strengthen academic identities (Baxter, 2022), and contribute to the status of education focussed academics within institutions (Roxå et al., 2008). However, as an early career educator in a research-focussed institution I wasn't even aware of the Scholarship of Learning and Teaching (SoTL). It wasn't until attending my bioscience education meeting in 2014 that I realised that this type of research existed. In particular, I was inspired by a model of SoTL proposing 'levels' of educators, from those who did not engage in scholarly teaching to those who were conducting research and communicating through peer reviewed publication (Scott, 2015). This connected me to the work of (Trigwell et al., 2000) and others on the nature of SoTL, opening up a path of professional development I had never considered before [A5,V3].

However, as a scientist I found my early encounters with the educational literature disorientating and overwhelming. I found myself baffled by the extended written formats used, qualitative methods, theoretical and conceptual frameworks, the apparent subjectivity and lack of controlled experimental design. Others have noted the difficulties faced by scientists moving into educational research spaces (Grove & Overton, 2013; Kelly et al., 2012; Rowland & Myatt, 2014), which may claim to be transdisciplinary but typically draw on social science and psychology methodologies (Cruz et al., 2024).

A large part of my motivation to move to Hull in 2016 was to work with colleagues who had expertise in educational research and scholarship. I joined the Bioscience Education Research Group, a community of practice that was invaluable for my professional development [V3,A5]. In 2017 I also attended the statistics training course offered to our postgraduate students; I have built upon the computational skills learned there to develop sophisticated quantitative methodologies to explore educational data at scale. I also reached out to colleagues with qualitative research expertise who introduced me to formal frameworks of thematic analysis (e.g. Braun & Clarke, 2006) showing me how to obtain methodological rigour and use literature to inform qualitative analysis. UoH colleagues have also helped me to understand the roles of theoretical and conceptual frameworks, and the persuasive writing style needed in research not grounded in empirical approaches [V3]. My scholarship now integrates quantitative and qualitative research methods underpinned by appropriate theory, and I am now publishing in high impact journals (e.g. Higher Education, International Journal of Science Education). My education papers have over 250 citations, and many have been downloaded thousands of times.

As I developed my expertise in pedagogical research, I took on more roles in this area. I am the pedagogical research expert on the Faculty of Science and Engineering Ethics Committee (2017-2019; 2024 - ), reviewing ethics applications from across the faculty and providing advice to colleagues. I have delivered sessions on the UoH Postgraduate Certificate in Academic Practice (PCAP) programme on 'getting started in educational research', and supported colleagues in their research designs. I am regularly invited to review educational manuscripts for international journals including *CBE Life Sciences Education*, *Studies in Higher Education*, *Journal of Biological Education* and *International Journal of Science Education* [V3,A5]. I have also written teaching resources for the American Society of Plant Biology and the European journal *Science in Schools*, so have international reach.

*“Dr Hubbard helped me develop a scholarly approach to my teaching. I used her Higher Education Pedagogies paper as a star to guide me; her inclusion of student voices was particularly inspirational, and helped me to find a way to write Scholarship I was proud of.” – Dr Michael O’Neill, formerly University of Hull, now University of Liverpool*

*“I think this is truly an excellent manuscript - the reviewers and I are genuinely enthusiastic about your essay, as it represents a novel direction for our field and our journal. I’m excited about seeing your work in print and hopeful about the impact that your work will have on the life sciences education community” - Handling editor for da Silva and Hubbard (2024), CBE Life Sciences Education*

*“Katharine is a leader in plant science education; she co-authored one of the Teaching Tool in Plant Biology series on “The Plant Circadian Clock”, which has been downloaded over 3000 times. The bar for acceptance to this series is extremely high; this is an impressive achievement and an invaluable resource for the plant science community.” – Dr Mary Williams, American Society for Plant Biology*

In ten years I have gone from not even knowing about the existence of SoTL, to publishing 23 education focussed articles in high impact journals. As such I am contributing to the international scholarly community, and in doing so have a new confidence in my education-focussed academic identity. I continue to lead high impact research and evaluation, creating a robust evidence base to inform educational practice and policy at an international level [V3,K5,A5].

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