The University of Edinburgh

Internal Periodic Review
School of Biological Sciences
Postgraduate Research provision

23 – 25 November 2021

Contents

Executive summary

This report comprises the outcomes from the internal review of postgraduate research provision in the School of Biological Sciences.

The review team found that the School has effective management of the quality of the student learning experience, academic standards, and enhancement and good practice.

The report provides commendations on the School's provision, recommendations for enhancement that the School will be asked to report progress on to the Senate Quality Assurance Committee, and suggestions on how to support developments.

Key Commendations

The review team commended the School for its dedicated staff and students, the breadth and diversity of its funding sources, core training provision, and well-functioning progress monitoring milestones. The review team was particularly impressed with the Graduate School Administrative Team and the Facilities Managers for their professional, dedicated and student focused approach, and their appreciation of, and respect shown towards, students. Detailed commendations are included in the report.

Key Recommendations

The key recommendations identified by the review team for the School to prioritise are:

- **'New Biologists'** – the School can bolster its strong position in a highly competitive funding marketplace by:
    - placing training and development of the next generation of Biological Science researchers at the heart of its offer;
    - reviewing core training provision and implementing a mandatory training programme for all PGR students to ensure equitable access to excellent research and career-relevant training (including core Bioscience skills, employability, and career awareness training);
    - establishing a Training Co-ordinator/Manager/Director role to oversee the training and support needs of PGR students across the School;
    - making opportunities and funding to attend national and international conferences available and widely communicated to all PGR students.

Commendations, recommendations and suggestions

Commendations:

Key strengths and areas of positive practice for sharing more widely across the institution.

No	Commendation	Section in report
1	The review team **commends** the School on the breadth and diversity of its funding sources.	1
2	The review team **commends** the School on the core training provision.	2.1
3	The review team **commends** the School on well-functioning progress monitoring milestones, as evidenced by excellent completion statistics.	2.2
4	The review team **commends** the Graduate School Administrative Team and the Facilities Managers on their professional, dedicated and student focused approach, and their appreciation of, and respect shown towards, students.	2.3
5	The review team **commends** the active and dedicated group of student representatives, as evidenced by their School Award.	2.4
6	The review team **commends** the School for allocating unique office space for students and not forcing everyone to "hot desk".	2.8

Recommendations:

Areas for development and enhancement (progress to be reported).

Priority	Recommendation	Section in report	Responsibility of
1	The review team **recommends** that the School place excellence in researcher development at the heart of its narrative.	1	School
2	The review team **recommends** that the School review its core training provision and implement a mandatory training programme for all PGR students to ensure equitable access to excellent research and career-relevant training (including core Bioscience skills, employability, and career awareness training).	2.1	School

3	The review team **recommends** the establishment of a Training Co-ordinator/Manager/Director role to oversee the training and support needs of PGR students across the School.	2.1	School
4	The review team **recommends** that the University determine the underlying causes of the gaps in student WP and EDI data and share best practice with Schools and Colleges to address these gaps.	2.5	University
5	The review team **recommends** that the University establish a set of expectations or baselines in relation to WP and EDI to allow Schools to gauge their relative performance.	2.5	University
6	The review team **recommends** that the School make opportunities and funding to attend national and international conferences available and widely communicated to all PGR students.	2.6	School
7	The review team **recommends** that the School establish a forum or annual event where staff supporting PGR students can discuss issues and share best practice.	2.7	School
8.	The review team **recommends** that selection criteria/guidelines for all tutoring and demonstrating roles be published and prominently communicated to students to ensure they all feel they have an equitable opportunity to apply for work.	2.7	School
9.	The review team **recommends** that the University allocate the appropriate resource to the IAD to ensure that it can meet the training requests of PGR students who teach.	2.7	University
10	The review team **recommends** that the School and College work together to optimise student social and office space in the new School and College estate developments.	2.8	School and College

Suggestions:

For noting (progress reporting is not required).

No	Suggestion	Section in report
1	The review team suggests that the School strive to ensure that the unique and valuable contribution of technical services staff to School life is fully recognised by staff and students.	2.3
2	The review team suggests the School employ PhD students as WP or EDI recruitment ambassadors to visit local secondary schools.	2.5
3	The review team suggests that Doctoral College communications clearly state that the Graduate Schools remain the primary contact for PGR students, supervisors and studentship funding grant-holders.	2.7
4	The review team suggests that the School work with the Doctoral College to ensure consistency and monitoring of the support, training, and feedback needs of postgraduate research students who teach.	2.7
5	The review team suggests that the Training Co-ordinator/Manager/Director role (see section 2.1 above) be responsible for overseeing the training and support needs of student tutors and demonstrators across the School.	2.7

Section A – Introduction

Scope of review

Range of provision considered by the review (see Appendix 1).

The Internal Periodic Review of the School of Biological Sciences in 2021-22 consisted of:

- The University's remit for internal review (see Appendix 2)

- The subject specific remit items for the review**:**

    o Core Bioscience Skills, Employability and Career Awareness training
    o Best practice in Widening Participation & Equality, Diversity and Inclusion
    o Sustaining PGR funding levels

- The Reflective Report and additional material provided in advance of the review

- The meeting of the review team including consideration of further material (see Appendix 3)

- The final report produced by the review team

- Action by the School and others to whom recommendations were remitted following the review

Review Team Members

Convener: **Dr Chris Stock**, School of Physics and Astronomy
External Member: **Dr Lesley MacVinish**, University of Cambridge
External Member: **Professor Geraint Thomas**, University College London
Internal Member: **Dr Elke Heins**, School of Social and Political Sciences
Student Member: **Ben Thomas**, Deanery of Clinical Sciences
Review Administrator: **Brian Connolly**, Academic Services

The School

The School of Biological Sciences is one of 7 academic Schools in the College of Science and Engineering. It is structured into six Institutes covering the full range of research in Biological Sciences: Institute of Cell Biology (ICB); Institute of Evolutionary Biology (IEB); Institute of Immunology and Infection Research (IIIR); Institute of Molecular Plant Sciences (IMPS); Institute of Quantitative Biology, Biochemistry and Biotechnology (IQB3); and the Institute for Steam Cell Research (ISCR).

Physical location and summary of facilities

The School is located at the King's Buildings campus across a number of buildings, with a presence also at Little France as part of a collaborative centre. The School is currently part of a long-term capital works project to refurbish the Darwin Building to centralise the School's physical location.

Date of previous review

10 – 11 March 2016.

Reflective Report

The report was prepared by Clare Blackburn (Director of Graduate School and Director of the BBSRC EASTBIO Doctoral Training Partnership), Caroline Proctor (Graduate School & Staffing Services Manager to October 2021), and Helena Sim (Graduate School Team Leader). Discussions on Subject Specific Remit Items were conducted with the School Executive Committee, Graduate School Postgraduate Advisors and Student Representatives, and two additional working groups including staff and students.

Section B – Main report

1 Strategic overview

Biological Sciences is a large and diverse School which has grown substantially over the last five years, with 130 Principal Investigators (PIs) and an annual intake of approximately 67 postgraduate research (PGR) students. The School has an international PGR student body due in particular to the funding emphasis of the Darwin Trust, a charity (founded by Professor Ken Murray, a former faculty member) that provides PhD studentships to non-UK students. The Darwin Trust currently funds about 30% of all PhD students in the School with around 50% of the rest funded by UK Research and Innovation (UKRI) or the Wellcome Trust (WT). The remainder are funded by a broad range of institutional, international, and industry sources. The review team **commends** the School on the breadth and diversity of its funding sources.

The School invited the review panel to consider the sustainability of its PGR funding levels in light of a change in funding strategy by the Wellcome Trust, which will result in the loss of 10 studentships per year. The School is considering various strategies in response to this change including developing strategic partnerships (through internationalisation initiatives) and building more relationships with industry for large scale funding. The review team was in agreement that the School is in a very strong position to withstand these impending funding challenges.

The review team **recommends** that the School place excellence in researcher development at the heart of its narrative. The School's research is clearly excellent as evidenced by its research excellence assessment (placed 3rd in the UK) and research league table rankings (UK top 5 and world top 25 in both the QS and Times Higher world university rankings). However, in an increasingly competitive funding environment research excellence has become a baseline requirement. The review team suggests that in order to standout, successful applicants must offer more evidence of Widening Participation (WP), Equality, Diversity and Inclusion (EDI), Public Engagement and training opportunities since researcher development is increasingly paramount in funding body criteria. By placing the training and development of the next generation of Biological Science researchers at the heart of its offer (not just 'New Biology' but 'New Biologists') the School would have a unique selling point to bolster its strong position in a highly competitive funding marketplace.

2 Enhancing the student experience

2.1 The approach to enhancing PGR student training and development

The School provides all PGR students with a common set of core training, structured around key milestones. This underpins the training provision of specific PGR funders, such as the Doctoral Training Programme (DTP) for UKRI or WT funded students. The review team **commends** the School on the core training provision.

However, students with other sources of funding do not automatically have access to the same level of training provision and opportunity. The School acknowledges that providing equitable experience for students on different scholarships is a key

challenge. Student representatives have repeatedly reported that students not on UKRI or WT programmes would like the same level of training opportunity as their peers. They feel disadvantaged compared to their peers and this inequality is not only divisive but also means that some students feel unable to request training which should be core for their career development. The review team **recommends** that the School review its core training provision and implement a mandatory training programme for all PGR students to ensure equitable access to excellent research and career-relevant training (including core Bioscience skills, employability, and career awareness training).

The review team also suggests that the School and College explore options for more standardised training in order to open up provision to as many students as possible and reduce duplication of resources. The review team noted that this had also been the focus of a recommendation of the previous review which had recommended that: *the School and College develop a more strategic training programme for their students, drawing on the expertise from across the College to deliver both basic science skills training (Statistics, R, logic and reasoning etc) and more curated, discipline relevant courses.*

Many of the students who the review team spoke to either lacked awareness of available training opportunities or were confused about what they ought to be taking. The review team **recommends** the establishment of a Training Co-ordinator/Manager/Director role to oversee the training and support needs of PGR across the School. This new role would be responsible for ensuring training, feedback and developmental needs of all PGR students are addressed. The review team envisions this role as a key part of the suggested strategic pivot to place the development of the next generation of Biological Science researchers at the heart of the School's narrative. To this end the role would be expected to identify skills and training gaps that exist or are likely to emerge over the horizon and drive forward change to address these.

The review team acknowledges that there will be a cost to making these enhancements to training provision (particularly for students for whom there is no automatic provision of training funding) but that it is vital to ensure an equitable student experience.

2.2   Effectiveness of student progress monitoring

The review team noted the School's consistently high PhD completion statistics. To effectively guide student progress the School explicitly links its training provision to progress monitoring milestones for students. An online annual review form allows the Director of the Graduate School to monitor and ultimately sign-off all annual reviews, or intervene if there appears to be significant delays to progress. Submission statistics are analysed by Institute which allows the School to observe any research areas where submission rates are poorer and target communication and intervention at those areas. The review team **commends** the School on well-functioning progress monitoring milestones, as evidenced by excellent completion statistics.

2.3   Supporting students in their learning

The review team noted that staff workload was a recurring theme during the review meetings. Staff frequently attributed the high numbers of students on some

programmes as a contributing factor on their workload but this did not appear to affect the satisfaction levels of the students in relation to the quality of teaching and access to support. The review team commends School staff for delivering a very high quality experience to students despite their workload.

The review team **commends** the Graduate School Administrative Team and the Facilities Managers on their professional, dedicated and student focused approach. The review team was impressed with the professional, dedicated and student focused approach of the Graduate School Administrative Team and Facilities Managers and. The Graduate School Administrative Team was highly valued by students and staff but the review team was concerned by the apparent lack of career development opportunities for the administrators. The Facilities Managers provide the School with a wealth of knowledge and expertise vital to the student experience but their contribution is seemingly unrecognised and undervalued by students and staff. The review team suggests that the School strive to ensure that the unique and valuable contribution of technical services staff to School life is fully recognised by staff and students.

2.4   Listening to and responding to the Student Voice

The students who the review team spoke to felt listened to and generally happy with the support provided by the School. They were aware of the School's formal mechanisms for student representation and agreed that they operated effectively. The review team **commends** the active and dedicated group of student representatives, as evidenced by their School Award.

2.5   Accessibility, Inclusivity and Widening Participation

The School's major funders expect active development of widening participation (WP) and equality, diversity and inclusion (EDI) initiatives and the School is fully supportive of sector initiatives in these areas. The review team suggests the School employ PhD students as WP or EDI recruitment ambassadors to visit local secondary schools. This could either be during their studies, or as a short-term position post-submission of their PhD as a 'Schools Liason Officer' with link schools in the Edinburgh area.

The review team noted that there is currently no School-wide view on what constitutes best practice and neither has there been a strategic steer on the issues from the University. The School has increasingly engaged with WP and EDI data to identify any gaps in recruitment, progression and attainment for different groups of students. However, the School has struggled to understand the underlying causes of these gaps or what good practice should be encouraged and cultivated to address them (as have all Schools and Colleges across the University). The review team **recommends** that the University determine the underlying causes of the gaps in student WP and EDI data and share best practice with Schools and Colleges to address these gaps. The review team **recommends** that the University establish a set of expectations or baselines in relation to WP and EDI to allow Schools to gauge their relative performance.

2.6   Development of Employability and Graduate Attributes

The School encourages all students to attend Career Development workshops run by the Careers Service, particularly in their third year of the PhD. The School provides a wide range of teaching opportunities to PGR students as tutors and demonstrators (see section 2.7 below). The students who the review team spoke to recognise and appreciate the skills they develop from teaching, such as public speaking and problem solving, which will be useful in future careers either in academia or industry.

The review team noted that attending key conferences and submitting papers can be a prerequisite for employment in some fields. The students who met the review team recognised the benefits of conference participation but did not feel encouraged or supported by the School to pursue this aspect of academia. Whilst some understood that Darwin Trust funding was available for conference attendance in years 3 and 4 the majority of students did not feel this information was made readily available nor was conference activity an expectation. The students agreed that they would like more opportunities to participate in conferences, particularly earlier on from year 2 of their programme of study. The review team **recommends** that the School make opportunities and funding to attend national and international conferences available and widely communicated to all PGR students.

2.7   Supporting and developing staff

Many of the School's PhD students also have staff roles as tutors and demonstrators (as noted in section 2.6 above) and the University has a dedicated policy for the recruitment, support and development of tutors and demonstrators (introduced in 2017) intended to ensure consistency in their experience. Currently Schools are responsible for ensuring the delivery of training to postgraduate students who teach, with some support from the Institute for Academic Development (IAD). This provision is overseen by the Colleges via their researcher training committees and teaching and learning committees. The review team noted that this was identified in the previous review in 2016 as an area of development for the School, with several recommendations in relation to work allocation, training, and feedback. The review team **recommends** that the School establish a forum or annual event where staff supporting PGR students can discuss issues and share best practice.

The student tutors and demonstrators who met the review team felt there was a lack of clarity around the selection process for these roles and that there was a perception that allocation of work appeared to be *ad-hoc* and based on knowing the right person at the right time. The review team acknowledges that though it appeared that a relatively fair process was in place it is important that it is also transparent and seen by students to be fair. The review team **recommends** that selection criteria/guidelines for all tutoring and demonstrating roles be published and prominently communicated to students to ensure they all feel they have an equitable opportunity to apply for work.

The student tutors and demonstrators recognise the career development benefits of these teaching opportunities and welcome both the experience and financial support provided by the work. However, they also reported varying experiences in

terms of their preparation/training and the feedback they received. The majority expressed the view that there was little oversight of the training process with many reporting feeling that they were underprepared for their teaching role, particularly in regard to how to effectively engage students taught in class. The review team suggests that the Training Co-ordinator/Manager/Director role (see section 2.1 above) be responsible for overseeing the training and support needs of student tutors and demonstrators across the School.

The student tutors and demonstrators who met with the review team appreciated both the training provided by the IAD and the opportunity to gain accreditation by applying for Associate Fellowship of the Higher Education Academy (HEA). However, they also noted difficulties getting access to the IAD training and support due to increasing student demand and limits on the capacity of IAD courses. The review team **recommends** that the University allocate the appropriate resource to the IAD to ensure that it can meet the training requests of PGR students who teach.

The review team noted that the University's 2021 Enhancement Led Institutional Review (ELIR) identified training and support for tutors and demonstrators as an area for development for the institution as a whole. The key recommendation required the University to: **'*ensure effective implementation of its policy for the training and support of postgraduates who teach and ensure all PGR students are trained before engaging in teaching activities'*.** The University's response to this ELIR recommendation is being led by the Doctoral College for postgraduate research students, launched by the University in January 2020. The Doctoral College is a structure lying outwith the graduate schools, aiming to provide a centralised, institution-wide approach to issues such as student support, welfare and careers. The review team noted that the School has some concerns that the development of the Doctoral College has muddied lines of communication, by appearing to give the option to PGR stakeholders of engaging less with their Graduate Schools. The review team suggests that Doctoral College communications clearly state that the Graduate Schools remain the primary contact for PGR students, supervisors and studentship funding grant-holders. The review team suggests that the School work with the Doctoral College to ensure consistency and monitoring of the support, training, and feedback needs of postgraduate research students who teach.

2.8   Learning environment (physical and virtual)

The School is well resourced with excellent scientific facilities available to PGR students. Access to these facilities was significantly impacted by the pandemic but the School has now prioritised PGR students and postdocs in the final year of a research project.

A £130M plan for construction of several new buildings was in place prior to the pandemic but has now been postponed and the School required to produce a new business case before plans can recommence. There are also concerns about the lack of informal social space and the impact that this has on the sense of academic community within the student body. Students noted that catering has improved but is still relatively poor when compared to other areas of the University. The School is hopeful that the College's Nucleus Project will ensure good quality social space for students and quality catering options, particularly outside office hours.

The review team agreed that access to separate office space and good quality social space is a big part of the postgraduate student experience. The review team **commends** the School for allocating unique office space for students and not forcing everyone to "hot desk". The review team **recommends** that the School and College work together to optimise student social and office space in the new School and College estate developments.

3. **Assurance and enhancement of provision**

The School operates within the University's Quality Framework and the review team is confident that academic standards are high. The School's approach to setting, maintaining and reviewing academic standards is appropriate. Standards are continually reviewed through External Examiner reports, student feedback and annual monitoring.

Appendix: Range of provision considered by the review

Reflective Report

School Quality Assurance Reports:
- 2020-2021
- 2019-2020
- 2018-2019

School Organisation Chart

Supervisors and Student Numbers

Key External Partners (including the Darwin Trust)

Programme Handbook

Programme Specification Information: http://www.drps.ed.ac.uk/21-22/dpt/prmsrhopgh2f.htm

Statistical information:
- Statistical reports
- Equality Diversity Monitoring and Research Committee Reports
- School Graduate Outcomes Data

Postgraduate Research Experience Survey (PRES) 2020 results

Graduate Outcomes Survey Data: School of Biological Sciences - August 2021

Student Staff Liaison Committee meeting minutes (previous academic year):
- February 2020
- April 2020
- June 2020
- May 2021

School postgraduate (PG) Studies Committee Meeting Minutes:
- October 2020
- March 2021
- April 2021
- May 2021
- June 2021
- September 2021
- October 2021

University of Edinburgh Standard Remit 2021/22

Subject Specific Remit