

UNIVERSITY OF GLASGOW

Academic Standards Committee - Friday 17 February 2012

Periodic Subject Review: Report of the Review of Life Sciences 27 and 28 October 2011

Mrs Amber Marquez-Higgins, Clerk to the Review Panel

Review Panel:

Professor Frank Coton	Vice Principal (Learning and Teaching), Convener
Professor David Coates	University of Dundee, External Subject Specialist
Professor Alyson Tobin	University of St Andrews, External Subject Specialist
Ms Hannah-Mary Goodlad	Student Representative
Dr Vicky Gunn	Learning and Teaching Centre
Professor John McColl	School of Mathematics and Statistics, Cognate member
Mrs Amber Marquez-Higgins	Senate Office, Clerk to the Review Panel
Ms Fiona Dick	Senate Office (observing)

1. Introduction

- 1.1 The School of Life Sciences was formed in 2010 as part of a major restructuring exercise that reshaped the University from nine Faculties into four Colleges. Staff that were formerly members of the Faculty of Biomedical and Life Sciences became members of the College of Medical, Veterinary and Life Sciences (MVLS) along with staff from the former Faculties of Medicine and Veterinary Medicine.
- 1.2 Staff from the former Faculty of Biomedical and Life Sciences were allocated between the School of Life Sciences and a number of Research Institutes with thematic focus . Undergraduate teaching in Life Sciences is supported through academic, technical, administrative and secretarial staff in the School along with input from the Research Institutes. Following the restructuring, a common MVLS Graduate School was created in the West Medical Building to support postgraduate teaching and research activities across the whole of the College. The School has retained its base in the Bower Building.
- 1.3 The teaching activities of the School are delivered in a range of teaching spaces distributed over the University's Gilmorehill campus. Lecture theatres are managed through the University's Central Room Booking system and serve the academic community at large. Teaching spaces for which the School has responsibility are geographically dispersed across seven buildings. Within these buildings, the School maintains teaching rooms for tutorials, meetings or seminars, computer clusters and teaching laboratories.
- 1.4 The previous internal review (DPTLA) of the School (as the Faculty of Biomedical and Life Sciences) was undertaken in March 2005. It concluded

that the provision was of a very high standard but identified a number of areas for development to further strengthen its provision.

- 1.5 The Self Evaluation Report was prepared by Dr Rob Aitken, Head of School of Life Sciences. The Review Panel commented on the limited consultation with staff and students that had taken place when the report was being prepared but acknowledged the impact of the restructuring of the University and the voluntary severance scheme within the former faculty. Nonetheless, the Panel considered the Self Evaluation Report to be comprehensive and informative.
- 1.7 The Review Panel met with the Dean of Learning and Teaching for the College of Medical, Veterinary and Life Sciences, Professor Jill Morrison; Head of School of Life Sciences, Dr Rob Aitken and 5 Heads of Subjects. The Panel also met with 37 members of staff; 5 probationary members of staff; 6 Graduate Teaching Assistants (GTAs); 7 postgraduate students and 12 undergraduate students representing all levels of the School's provision.

2. Background Information

- 2.1 The School has a total of 76.6 FTE members of staff, of which 42.5 are academic staff and include: 5 Professors; 14.1 Senior Lecturers/Readers; 7 Senior University Teachers; 3 Lecturers and 12.4 University Teachers; 1 Research Fellow who will soon be transferred to an academic post.
- 2.2 Student numbers for 2009-10 are as follows:

Students	Headcount
Level 1	711
Level 2	600
Level 3	412
Level 3 (Designated Degree)	75
Level 4 (BSc Honours)	276
MSci work placement year (off campus)	29
Level 4 (MSci, final year)	22
Intercalated ¹	8
Undergraduate Total	2338
Postgraduate Taught	89
Postgraduate Research*	12

*(for information only - research is not covered by the Review)

¹ One year programme leading to a BSc (MedSci)/ BSc (DentSci)/ BSc (VetSci) taken by students studying Medicine, Dentistry, and Veterinary Medicine on completion of the third year of the MBChB, BDS, BVMS.

- 2.3 The Review Panel considered the following range of provision offered by the School at undergraduate level

Bachelor of Science² in the following subjects

Animal Biology
Biomolecular Sciences
Biology and Chemistry
Human Biology
Infection Biology
Sports Science

Bachelor of Science (Honours) in the following subjects

Anatomy
Biochemistry
Biomedical Sciences
Biotechnology
Computing Science and Physiology³
Genetics
Immunology⁴
Marine and Freshwater Biology
Medical Biochemistry
Microbiology
Molecular and Cellular Biology
Neuroscience
Parasitology
Pharmacology
Physiology and Sports Science⁵
 Physiology, Sports Science and Nutrition
 Sports Medicine
Physiology and Psychology³
Physiology
Plant Science
Virology
Zoology
Zoology and Applied Mathematics³

Each of the Single Honours awards is also available as **Master in Science** (MSci), a programme that includes an integrated year of work placement between Levels 3 and 4.

- 2.4 The Review Panel also considered the following range of provision offered by the School at postgraduate level:

Master of Science in

Biotechnology

² These are non-Honours level awards, termed “Designated Degrees”. Designated degrees provide an exit qualification typically awarded after 3 years of study to students that are not qualified for entry to Honours.

³ These are combined degree programmes taught in association with the Schools of Computing Science, Psychology and Mathematics

⁴ This degree programme is taught by staff from the School of Medicine.

⁵ For degree programmes in Physiology, Sports Science and Nutrition, and for Sports Medicine, students are members of Physiology and Sports Science class during level 3 and then take classes and a project in the nominated area in order to qualify for the award.

Master of Research in

Bioinformatics
Biomedical Sciences
Biomedical Sciences (Integrative Mammalian Biology / Systems Biology)
Ecology & Environmental Biology
Evolutionary Biology and Systematics
Exercise Science
Marine and Freshwater Ecology and Environmental Management
Medical and Veterinary Microbiology
Molecular Parasitology
Plant Science
Virology

- 2.5 The School also contributes to the following degree programmes offered by other Schools:

Bachelor of Nursing
BSc Veterinary Bioscience
BEng/MEng Biomedical Engineering
MBChB

3. Overall aims of the School's provision and how it supports the University Strategic Plan

- 3.1 The Review Panel was satisfied that the aims of the School's provision, as outlined in the Self Evaluation Report, were appropriate and supported the University's Strategic Plan. In particular, the Panel considered the School's approach to research-led teaching and the embedding of novel technology in teaching and assessment was closely linked to the University's Learning and Teaching Strategy.

4. An Evaluation of the Student Learning Experience

4.1 Aims

- 4.1.1 The Review Panel was provided with details of the programme aims as part of the Self Evaluation Report and noted that all took account of the relevant benchmarks and the Scottish Credit and Qualifications Framework. The Panel welcomed the broad range of provision and the flexibility of the courses offered. The undergraduate students that the Panel met with were also highly appreciative of the breadth and flexibility of the provision, and stated that these were key attractions with respect to recruitment. The Panel noted that whilst most of the Programme Specifications were clear and well written, some lacked distinct information for each pathway. The Review Panel **recommends** that the School review its Programme Specifications to ensure that each one is distinctive to the programme, and contains the relevant information for, all available degree pathways.

The Review Panel, guided by the views of the External Subject Specialist, confirms that the programmes offered by the School remain current and valid in light of developing knowledge in the discipline, and practice in its application.

4.2 *Intended Learning Outcomes (ILOs)*

4.2.1 The Review Panel noted that statements of Intended Learning Outcomes (ILOs) were provided to students as part of the course handbooks and programme specifications, and were satisfied that they were consistent with the School's stated programme aims.

4.2.2 The Review Panel noted and welcomed the wide variety of ILOs used. However, some ILOs referred to being able to 'understand' and read as a summary of the topics to be covered rather than giving an indication of achievement expected. The Review Panel **recommends** that the School review its ILOs for programmes and courses ensuring that they encompass development of knowledge, intellectual skills and transferable and/or key skills and that assessment criteria match the developed ILOs such that the attainment of the ILOs aligns constructively with the published course aims.

4.3 *Assessment, Feedback and Achievement*

4.3.1 The Review Panel noted from the Self Evaluation Report that there was a significant increase in difficulty between the assessments used in Levels 1 and 2 and those used in later years which was having an adverse effect on the level of attainment and pass rates in Level 3. The Panel discussed these concerns with the staff who agreed that students often struggled with the transition from Level 2 to 3. The staff who met with the Panel reported that, as these courses contributed to a large number of programmes, the logistics of teaching increasingly large cohorts of students had meant that the methods of assessment used were defined by the number of staff available to mark. The undergraduate students who met with the Panel also agreed with this and stated that they were unclear as to how to approach the higher level assessments. The Review Panel **recommends** that the School review the guidance it gives to students progressing from Level 2 to 3 prior to any formative assessments, to ensure that students understand the level of attainment and depth of knowledge required in order to achieve certain grades, particularly with respect to written reports and essays.

4.3.2 The Review Panel also noted from the Self Evaluation Report that students had raised concerns about the quality and promptness of feedback on assessment. The undergraduate students who met with the Panel stated that the feedback in Levels 1 and 2 was often impersonal and it was often unclear as to how grades had been awarded for laboratory reports in the large classes. The undergraduate students also commented that exam feedback was poor. The Panel raised these concerns with the teaching staff that they met and were informed that students received feedback in a variety of forms but did not always recognise it unless it was labelled as such. The teaching staff also reassured the Panel that shared marking was tracked closely and grade distribution spreadsheets were used to ensure that marking was consistent. The Panel welcomed the clarification on the processes used for the large courses. The Review Panel **recommends** that there is dialogue with undergraduate students on an annual basis to ensure that they understand the processes used when marking assessments and the use of different forms of feedback, e.g. written, verbal and Peerwise.

4.3.3 The School's use of Peerwise and the use of graphs for monitoring distributions of marks for assessments with multiple markers were considered innovative. The undergraduate students who met with the Review Panel welcomed the use of Peerwise and enjoyed the feedback gained from fellow students. The

Review Panel **commends** the School for its use of innovative technology to improve teaching administration and feedback for the large student cohorts.

4.4 Curriculum Design, Development and Content

4.4.1 The Review Panel noted that processes in place for curriculum development appeared to be effective and that there was evidence that the curriculum review processes were responding to the dynamic nature of life sciences as a subject area.

4.4.2 The Review Panel noted that the undergraduate Masters in Science (MSci) programmes were a strong feature of the School's programmes. The Panel raised concerns that the only difference between the BSc and MSci programmes was the placement year. The teaching staff that they met explained that the programmes follow the same courses and assessments but that the MSci students spend a year on an industrial placement which was considered to be at SCQF level 11. Following further discussions with the staff in the School, it became clear to the Panel that the placements could not be verified at SCQF level 11 and that little or no extra support was given to students going out on placement to ensure that they would be studying at the correct level. After consideration, the Review Panel agreed to **recommend** that the School urgently redevelops the final taught year of the MSci to provide the attainment at SCQF Level 11 required by the QAA and by the University Regulations that will bring it in line with MSci programmes at other UK universities.

4.4.3 During discussions with the Head of School and Subject Heads it became clear that whilst some subjects areas were fully supported by the relevant Research Institutes other Research Institutes were not fully engaged in learning and teaching. A large amount of staff time was being spent on negotiating individual teaching duties and this was beginning to cause tension between the School and Research Institutes. Staff raised concerns about the impact this could have on development of the degree programmes if research active staff started to withdraw from learning and teaching activities. The Review Panel **recommends** that the College establishes a robust, transparent and consistent process for the allocation of teaching duties, in which all academic staff are encouraged to engage in learning and teaching and that ensures that research-led teaching continues to be a strength of the degree programmes offered by the College.

4.5 Student Recruitment

4.5.1 The Review Panel was concerned by the low number of international students in light of the College's international reputation in Life Sciences. The Head of School reported that the School was currently investigating strategies to increase international recruitment and stressed the importance of Research Institutes being included in the planning stages. This would be essential to prevent duplication in the programmes offered by the School and by the Research Institutes. The Review Panel **recommends** the School continues to investigate strategies to increase international student recruitment together with the Research Institutes aided by advice and support from Recruitment and International Office.

4.6 Student Progression, Retention and Support

4.6.1 The Review Panel **commends** the School for its use of Moodle for groupwork in Biology level 1 which works towards integrating all students into the learning

experience and facilitating student engagement, both socially and academically. This was intended to help combat isolation which was a factor in student progression and retention in large cohorts.

4.6.2 The Review Panel continued their discussions about the transition between level 2 and 3 [*paragraph 4.3.1*] and noted that the School was attempting to resolve the issue through the introduction of core courses. It was hoped that this would mean that the students would all have the core knowledge on which progress in the third year could be built. The Panel understood that this had been a slow process and encouraged the School to continue to work towards this.

4.6.3 The postgraduate students that met with the Review Panel reported that limited information had been sent out to them prior to the start of the programme which had led to some problems on arrival at the University. It was unclear if this was due to specific problems with My Campus at the start of the session 2011-12 or if this was a regular occurrence. Concerns were also raised about the laboratory projects and the way in which they had been allocated on a first come first served basis. This had meant that some students were having to approach a number of researchers to find a suitable project. One of the postgraduate students that met with the Panel stated that they had not met any other students on their programme and had had no information provided at the start of the programme. However, the postgraduate students agreed that all the teaching staff had been very supportive and approachable when asked for help. The Review Panel **recommends** that Postgraduate Taught students are sent an information pack prior to arrival including information about induction and timetables and that they are given an early opportunity to meet with their peers.

4.6.4 The undergraduate students that met with the Panel found the staff within the School to be very supportive and reported that during the last few years, they had ensured that the students were not adversely affected by the restructuring of the University and School. The Review Panel **commends** the Head of School and teaching staff within the School for maintaining the quality of the student experience through a period of significant change.

4.7 The Quality of Learning Opportunities

4.7.1 It was noted that the students spent a considerable amount of time in laboratories and, therefore, that it was important that this experience was stimulating, enjoyable and an effective learning experience. The Panel noted that some of the laboratory space would benefit from upgrading and that one laboratory was in particular need of repair. The Head of School reported that the University was currently considering refurbishing some of these areas but that there were others that had been deemed to be higher priority.

4.7.2 The Review Panel welcomed the involvement of researchers in supervising final year projects and agreed that research-led teaching in final year projects was a strength of the programmes. The undergraduate students that met with the Panel reported that they found the projects to be stimulating and that they had been welcomed into the research groups of the supervisors.

4.8 Resources for Learning and Teaching

4.8.1 The Review Panel met with 6 Graduate Teaching Assistants (GTAs) and discussed the level of support that they had received from the University and School. They reported that they had received training from the Learning and Teaching Centre and had found it to be beneficial. They also reported that the

technical staff involved with the labs were approachable and reactive. However, they stated that more support and feedback would be useful to ensure that they were able to develop their teaching skills. The Review Panel **recommends** that the School develop a system of feedback and other support mechanisms for GTAs to enable their career development.

- 4.8.2 Five probationary members of staff met with three members of the Review Panel. Participation in the New Lecturer and Teacher Programme (NLTP) was reported to have been a positive experience and a useful source for new teaching methods. The Probationary Staff who met with the Panel reported that, the initial induction within the School had been limited and, although the administrative staff had been very helpful when approached, they had been left to find information for themselves. It was suggested that a brief induction and a manual would have saved a large amount of time for both probationary and administrative staff. The Probationary staff also raised Concerns about the separation of research and teaching in terms of their development and workload. Their post descriptions had originally outlined research-led teaching but it was clear that as University Teachers there was limited opportunity to participate in research and develop their careers in that direction. The Panel was also concerned to hear that although some of the staff had met with their mentor on a regular basis and understood the probation process a number had not. The probationary staff were also unclear as to what the criteria were for promotion to Senior University Teacher. The Review Panel **recommends** that probationary members of staff are given an induction programme and meet regularly with mentors to help enhance career progression and that a full record is kept of these meetings.
- 4.8.3 As the Review Panel had not met with any probationary lecturers from the Research Institutes, it was unclear as to the process for career development in learning and teaching for these members of staff. The Panel was concerned that there appeared to be no shared understanding of excellence in teaching along with excellence in research and that some staff could be steered away from teaching which could impact on their career options if their research profile changed over their career. This should be addressed through appropriate induction and mentoring as described above.
- 4.8.4 Discussions continued with the Head of School, Subject Heads and teaching staff on the conflict between teaching and research [see *paragraph 4.4.3*]. The Review Panel was concerned that the current situation was unsustainable and was having a detrimental impact on staff morale. The staff who met with the Panel stated that research project support for taught postgraduate students was being withdrawn which would have a direct effect on student recruitment to these programmes. It was also reported that some staff in the Research Institutes were withdrawing from learning and teaching due to the pressures of raising research income. The Subject Heads often had to negotiate teaching hours with research staff to ensure that their programmes continued to have subject specialist teaching input. It was acknowledged that this did not apply to all Research Institutes and that many of the research staff were very supportive of learning and teaching and were keen to play a role in curriculum development. The Panel discussed the conflicts between research and teaching with the Dean for Learning and Teaching who stated that the College was very supportive of learning and teaching. One of the College's aims was to achieve excellence in both teaching and research and key to this was research-led teaching.
- 4.8.5 The Head of School reported that the College was currently working towards a workload and financial model but that this would require a large amount of

negotiation to take place around the College before implementation in 2012-13. The Dean (Learning and Teaching) reported that the College was pushing for the workload and financial models to be implemented as soon as possible but, due to the distinct nature of the College; this would take time to be finalised. The Review Panel **recommends** that the College puts the highest priority on putting effective workload and financial models in place to ensure that both teaching and research are properly supported within the College in 2012-13 and to prevent divisions from developing between research and teaching staff.

5. **Maintaining the Standards of Awards**

During discussions with the Review Panel, the Head of School outlined the plan to create a 'blue print' of the degree programmes that would map all of the ILOs, assessments, key skills, aims and attributes that students would gain whilst studying their degree programme. This would involve a large amount of work but it would enable the teaching staff to easily identify any areas that required improvement and any areas of good practice. The Review Panel **commends** this work and encourages the College to support the Head of School in taking this forward.

6. **Assuring and Enhancing the Quality of the Students' Learning Experience**

- 6.1 The Review Panel noted from the SER that the School had well –developed Quality assurance processes which complied with University policies and were applied effectively. The Panel commented that the staff within the School work towards ensuring that the students have an engaging and positive experience through their commitment to teaching and support for the students and the Panel **commends** the School for this.
- 6.2 The Panel was pleased to hear that the undergraduate students that they met with understood the role of the student representative, how representatives were elected, and that they knew about the training offered by the Students' Representative Council (SRC). The undergraduate students that met with the Panel explained that the staff student liaison committee within the School was a list of issues but found that the same issues were being raised year on year as it was common practice to start each year afresh. This had meant that students were not aware of how the issues that they had raised had been dealt with and that it would be helpful to put the minutes on Moodle. The Review Panel **recommends** that the School ensures SSLCs are minuted and that the minutes are made readily available to students. The School should also ensure that actions taken in response to issues raised are reported back to students and the SSLC's and this is recorded in the minutes of these meetings such that the feedback loop is closed.

7. **Summary of Perceived Strengths and Areas for Improvement in Learning and Teaching** (referencing both good practice and recommendations for improvement)

Key strengths

- Wide range of degree programmes offered;
- Innovative approach of Level 1 Biology teaching;

- The creative use of technology in assessment and feedback particularly in large cohorts;
- Commitment of staff to ensure that the student experience is high quality and engaging;
- Engagement of administrative and technical staff in teaching support
- Strong leadership of the School.

Areas for Improvement

- Clarification of the final year of MSci programmes;
- The clarification of programme aims and intended learning outcomes;
- Enhanced mentoring and support for GTA's;
- Enhanced mentoring and induction programme for Probationary staff;
- Recruitment of students from overseas for UG programmes;
- Induction material for PGT programmes prior to start of programme;
- Transition from level 2-3 for UG students;
- Staff Student Liaison Committee feedback to students;
- Improved interaction between the School, Research Institutes and College

Conclusions

The Review Panel commends the School on the overall scope and quality of its provision, and for its conscientious approach to student support and its effort to maintain the high quality of the student experience. The Review Panel noted the concerns raised about the conflict between teaching and research and encourages the School and College to establish a robust and consistent approach for the allocation of teaching duties. The School and Research Institutes should continue to work together to ensure that research-led teaching continues to a strength of the degree programmes offered.

Commendations

The Review Panel **commends** the Head of School and teaching staff within the School for maintaining the quality of the student experience through a period of significant change. [paragraph 4.6.4]

The Panel commented that the staff within the School work towards ensuring that the students have an engaging and positive experience through their commitment to teaching and support for the students and the Panel **commends** the School for this. [paragraph 6.1]

The Review Panel **commends** the School for its use of innovative technology to improve teaching administration and feedback for the large student cohorts. [paragraph 4.3.3]

The Review Panel **commends** the School for its use of Moodle for groupwork in Biology level 1 which works towards integrating all students into the learning experience and facilitating student engagement, both socially and academically. [paragraph 4.6.1]

Recommendations

The recommendations interspersed in the preceding report are summarised below. The recommendations have been cross-referenced to the paragraphs to which they refer in the text of the report. They are grouped together by the areas for improvement/enhancement and are ranked in order of priority.

Recommendations

Recommendation 1

The Review Panel **recommends** that the School urgently redevelops the final taught year of the MSci to provide the attainment at SCQF Level 11 required by the QAA and by the University Regulations, that will bring it in line with MSci programmes at other UK universities. [paragraph 4.4.2]

For the attention of: **The Head of School**

Recommendation 2

The Review Panel **recommends** that the College puts the highest priority on putting effective workload and financial models in place to ensure that both teaching and research are properly supported within the College in 2012-13 and to prevent divisions from developing between research and teaching staff. [paragraph 4.8.5]

For the attention of: **The Head of College**

For Information: **The Head of School**

Recommendation 3

The Review Panel **recommends** that the School review its Intended Learning Outcomes (ILOs) for programmes and courses, ensuring that they encompass development of knowledge, intellectual skills and transferable and/or key skills and that assessment criteria match the developed ILOs such that the attainment of the ILOs aligns constructively with the published course aims. [paragraph 4.2.2]

For the attention of: **The Head of School**

Recommendation 4

The Review Panel **recommends** that the School review the guidance it gives to students progressing from Level 2 to 3 prior to any formative assessments, to ensure that students understand the level of attainment and depth of knowledge required in order to achieve certain grades, particularly with respect to written reports and essays. [paragraph 4.3.1]

For the attention of: **The Head of School**

Recommendation 5

The Review Panel **recommends** that the College establishes a robust, transparent and consistent process for the allocation of teaching duties, in which all academic staff are encouraged to engage in learning and teaching

and that ensures that research-led teaching continues to be a strength of the degree programmes offered by the College. [paragraph 4.4.3]

For the attention of: **The Head of School and The Head of College**

Recommendation 6

The Review Panel **recommends** that the School ensures Staff Student Liaison Committees are minuted and that the minutes are made readily available to students. The School should also ensure that actions taken in response to issues raised are reported back to SSLC's and this is recorded in the minutes of these meetings such that the feedback loop is closed. [paragraph 6.2]

For the attention of: **The Head of School**

Recommendation 7

The Review Panel **recommends** that there is dialogue with undergraduate students on an annual basis to ensure that they understand the processes used when marking assessments and the use of different forms of feedback, e.g. written, verbal and Peerwise. [paragraph 4.3.2]

For the attention of: **The Head of School**

Recommendation 8

The Review Panel **recommends** that probationary members of staff are given an induction programme and meet regularly with mentors to help enhance career progression and that a full record is kept of these meetings. [paragraph 4.8.2]

For the attention of: **the Head of School**

Recommendation 9

The Review Panel **recommends** that Postgraduate Taught students are sent an information pack prior to arrival, including information about induction and timetables and that they are given an early opportunity to meet with their peers. [paragraph 4.6.3]

For the attention of: **The Head of School**

Recommendation 10

The Review Panel **recommends** that the School develop a system of feedback and other support mechanisms for Graduate Teaching Assistants to enable their career development. [paragraph 4.8.1]

For the attention of: **The Head of School**

Recommendation 11

The Review Panel **recommends** that the School review its Programme Specifications to ensure that each one is distinctive to the programme, and contains the relevant information for, all available degree pathways. [paragraph 4.1.1]

For the attention of: **The Head of School**

Recommendation 12

The Review Panel **recommends the** School continues to investigate strategies to increase international student recruitment together with the Research Institutes aided by advice and support from Recruitment and International Office. [paragraph 4.5.1]

For the attention of: **The Head of School**