INTRODUCTION

1.1 The Panel met to consider the following provision within Revalidation Unit 3C1a Biomedical Science (Undergraduate).

- BSc Hons Biomedical Science (FT/PT) with AB & CertHE exit awards (CE)
- BSc Hons Biomedical Science* (FT) with DPP (Pathology) (CE)
- BSc Hons Biomedical Science (FT) with AB & CertHE exit awards and DPP / DPP(I) / DIAS (CE)
- BSc Hons Biomedical Science (Level 6) (PT) (Distance Learning)
• Graduate Certificate in Biomedical Science (PT) (Distance Learning)
• MBiomedSci Hons Biomedical Science (FT/Level 7 PT) with BSc Hons Biomedical Science exit award (CE & University of Indiana & Purdue University Indiana)
(“Proposed new title, ‘Applied Biomedical Science’”)

1.2 Although presented as six programmes, the placement / study abroad modules apart, four of the six comprise the same modules at levels 4 to 6 i.e.

• BSc Hons Biomedical Science (FT/PT)
• BSc Hons Biomedical Science (with DPP [Pathology]) (FT)
• BSc Hons Biomedical Science (with DPP/DIAS) (PT)
• Master of Biomedical Science (Hons) (MBiomedSci) Biomedical Science (FT/PT final year)

1.3 The two distance learning programmes comprise modules that differ from the above programmes with the Graduate Certificate sharing all of its modules with the Honours programme.

• BSc Hons Biomedical Science (Level 6) (PT) (Distance Learning)
• Graduate Certificate in Biomedical Science (PT) (Distance Learning)

1.4 Students undertaking the Pathology programme complete their placement year in an IBMS approved clinical pathology laboratory during which they complete the IBMS Registration Training Portfolio leading to the issue of the IBMS Certificate of Competence and eligibility to apply for HCPC registration as a biomedical scientist. It is the only programme that leads directly to HCPC registration as a biomedical scientist. It was proposed that the title of this programme be changed to, ‘Applied Biomedical Science’. The Ulster and IBMS panels approved of the title change since it aligned with the convention in GB regarding similar programmes. The ACSLM panel would have preferred the use of ‘Professional’ as opposed ‘Applied’.

1.4 The 3-year programme is provided for those students who prefer not to commit to a yearlong placement or study abroad year until they have a clearer idea of the career path they wish to follow. Graduates of the 3-year and the DPP/DIAS programmes may pursue a career as a biomedical scientist following an appropriate period of additional training in an IBMS approved pathology laboratory and attainment of the IBMS Certificate of Competence.

1.5 The Integrated Master’s degree is a professional development route for professional bioscientists and provides an opportunity for graduates of the 3-year programme, following completion of a 12-month internship in a research laboratory, to complete the final stage of the MBiomedSci Hons.

1.6 The Honours and Graduate Certificate distance learning (level 6) programmes have different content to the other programmes. These programmes are aimed primarily at practitioners already working in pathology laboratories as a pathway towards professional development and HCPC registration. The Honours programme shares identical programme level learning outcomes with the other Honours programmes.

Professional Accreditation

1.7 The BSc Hons Biomedical Science (with DPP [Pathology]) is accredited by the ACSLM while the IBMS accredit all programmes within the unit. At the end of the meeting, both professional body
panels indicated that they would recommend reaccreditation of the programmes to the relevant body within their organisation subject to conditions and recommendations being satisfactorily addressed (see Section 7 below).

1.8 The Panel met initially with the Faculty Senior Management Team comprising Professor A McKillop, Associate Dean (Education), Professor V Gault, Head of School of Biomedical Sciences, Professor S McClean, Associate Head of School and Dr D McKenna, Revalidation Unit Coordinator. The Panel then met with a group of students from the current provision, then with two members of the Employers Liaison Group, Ms S Carty, South Eastern H&SC Trust Laboratories and Ms Elaine Porter, Southern H&SC Trust Laboratories, and finally, with the subject team to discuss the provision in detail.

2 DOCUMENTATION

The Panel received the following documentation:

- Agenda and programme of the meeting
- Guidelines for revalidation panels
- QAA subject benchmark statement for Biomedical Sciences (2015).
- IBMS criteria and requirements for the accreditation and reaccreditation of BSc Hons degrees in Biomedical Science
- External examiners' reports for the last three years.
- Preliminary comments provided by panel members
- Report from the department of Access, Digital and Distributed Learning regarding the fully online provision.
- Revalidation documentation

The following report is a summary of responses to Panel questions provided by each of the groups that met with the Panel during the meeting.

3 MEETING WITH SENIOR MANAGEMENT TEAM

Staff

3.1 Two external examiners had raised concerns in their most recent reports (for academic year 2017/18) regarding the loss of staff. The Team acknowledged that over the past 18 months to 2 years, a number of staff had retired. However, succession planning was in place. Currently the School was in the process of recruiting new staff to cover the losses in the areas of Pharmacology and Molecular Pathology and a Teaching Fellow in Biomedical Science. The expectation was that the new staff would be in post by the end of the current semester and certainly all would be in place by September before commencement of the new academic year. Currently, existing staff were covering these areas.

Physical Resources

3.2 New teaching facilities had been introduced over the last two years easing pressure for space as well as new bespoke student areas (with Wi-Fi). Students had responded positively to the new facilities. To support projects, there were now a number of high quality research facilities. Not
all were traditional ‘wet’ laboratories. Also included were some innovative ‘dry’ (computer-based) facilities that were more suited to the interests of some students.

**Final Year Projects**

3.3 The system for allocating final year projects was as follows. Students would choose from a list of project titles. They would discuss their options with staff and then select up to ten titles. The projects would then be allocated using an electronic algorithm. The majority of students would opt for wet laboratory projects for which, with the introduction of the new facilities, there was sufficient space. Some students however, who felt that they had built up sufficient wet laboratory skills during their placement year, would opt for a ‘dry’ project.

**Demand**

3.4 Recruitment of international students was a University priority and was incorporated in the School’s marketing strategy particularly relating to the two distance learning programmes. The Graduate Certificate was very strong in attracting international students. The School works through the International Office which has a clear mandate to target prospective students across the globe. Through the International Office, the School employs specialist recruiting agents in various regions, for example, Hong Kong, and other areas of South East Asia. Locally, the School targets schools in both Northern Ireland and the Republic of Ireland (RoI) and “a good number” of students were recruited from Britain. Flexibility of provision through the availability of various delivery modes was a helpful marketing tool.

**Placement**

3.5 Two types of placement were available, a pathology placement within an IBMS approved hospital training laboratory and an industry placement in, for example, a recognised research institution, a university or a pharmaceutical company. The local hospital trusts retain 25 placement places per year, allocation to which is through competition. A number of industry employers accept placement students every year. Students were also able to identify their own placement and an overseas placement was also a possibility. The Placement Co-ordinator and teaching staff support students as much as possible in securing a placement. Normally, a placement is found for all students. Those students who are more proactive usually secure a placement earlier; others find it more difficult. It is rare however for a student to be unable to secure a placement. Where a student is unable to find one or decides that they no longer wish to go on placement, they can transfer into final year of the 3-year non-placement programme. It was pointed out the Careers Office provided tremendous support to the School in this area. Dr Williams (ACSLM) pointed out that in respect of the Pathology programme, eligibility to work in the RoI was predicated on graduates having been exposed to all five disciplines during their placement year, namely, Biochemistry, Haematology, Blood Transfusion, Microbiology and Cellular Pathology.

**Marketing**

3.6 Prospective students can access information regarding individual programmes in a number of ways. An abundance of information is available on the University’s online prospectus where there is a link to each programme and associated careers. Direct communication with staff via email was another option. In addition, marketing events were held in the University and staff also visited local schools.
MEETING WITH STUDENTS

4.1 The Panel met with a group of students from the existing provision including four currently on placement. A wide-ranging discussion took place in areas including induction, assessment and feedback, support and placement. The students were generally complimentary of the provision highlighting a number of positive areas. There were however a number of negative issues raised although these were not the experience of all the students present.

Positives

- Support provided by the Students' Union
- Support provided by academic staff and placement supervisors
- Level of assessment and timeliness (in most cases) of feedback
- Preparation for written examinations
- Placement preparation particularly the early provision of the training portfolio for the pathology placement
- Well-structured training on placement

Negatives

- Timetable issued too late and, at the outset, was difficult to negotiate
- Library induction, while useful, would be better left until second week because students were overburdened with information at the outset
- No consistency in provision of lecture notes in advance of lectures or in the manner provided (email; BBL)
- Wednesday afternoons not kept free for sporting activities (as agreed with Students' Union)
- More experience of presentations required in the early stages of a programme
- Quality of feedback varies – on some occasions only a mark is provided
- In the allocation of final year projects, no understanding of the process and although able to choose project titles, no ranking permitted
- Apparent harshness in the marking of module, Molecular Biology
- No opportunity to meet with external examiner
- Placement
  - One student unable to secure a placement – progressed directly into final year
  - A student did not meet her mentor until 2 months into placement
  - Placement site unprepared for the arrival of a student
  - No structured training programme – required to set own goals

These issues were discussed with the subject team – see paragraphs 5.6, 6.2 and 6.13 to 6.17 below.

MEETING WITH EMPLOYERS

5.1 The Panel met with an employer representative from two of the local Health and Social Care Trusts, the South Eastern and Southern Trusts, which provide placements for students on the Pathology programme.
5.2 Currently, there were two students on placement in the South Eastern Trust and five in the Southern Trust. Generally, students were well prepared for placement although those more ‘worldly wise’ regarding the world of work had an advantage. Students were normally fully conversant with the IBMS registration training portfolio and were aware of the competences that they would have to acquire. They understood that they were on placement to work and learn and to appreciate and understand the different roles within the laboratory while acquiring practical skills. On arrival, students would undertake the same induction that the Trust’s own employees were required to undergo.

5.3 The Trusts were members of the School’s Employer Liaison Group (ELG) and were therefore familiar with the University’s placement allocation process. Prior to a student’s arrival on placement, the placement site would be provided with timely information regarding the student. The Trust would then appoint a training officer and/or mentor and set a start date for the student. Depending on the site, both a mentor and training officer may be appointed. Sometimes a staff member would double up as both mentor and training officer. A mentor may ‘sign off’ on evidence of achievement but if a training officer were also appointed, the training officer would oversee the process. The training officer/mentor would have a ‘hands on’ approach and would normally interact daily with the student. In the Southern Trust, all staff were encouraged to undertake mentor training since all staff would interact with a student during their training. The University provided mentor training. It was emphasised that strong links existed between the ELG and the University.

5.4 The frequency with which the training portfolio was reviewed varied but the minimum would be once per month. This was to ensure that evidence gathering was on track. The mentor/training officer would ensure that the relevant paperwork had been completed and was up to date.

5.5 Contact was maintained with academic staff throughout the placement. Academic staff would normally visit the site on three occasions during the year. The academic tutor, training officer and student would meet together and discuss any issues or problems that might have arisen. Between visits, where necessary, the academic tutor was available to both student and training officer. Midway through the placement period, the student would give a presentation at the University on their progress.

5.6 The representatives were surprised at a student’s suggestion that on one occasion a training officer or mentor had not been appointed and had been unavailable until well into the placement period. They suggested that in the unlikely event of this occurring, it would be quickly identified and a training officer appointed. Regarding another suggestion, the representatives were unaware of any occasion when a Trust had not been forewarned or had been unprepared to accept a student. In relation to an issue regarding training plans, the representatives emphasised that there was always a training plan for students in place, which, while it had some flexibility, would be strictly adhered to throughout the placement year. Students would therefore be always aware of deadlines for completion of work. It was noted that the University did not audit the training plan.

5.7 The ELG was focused on the Pathology programme; it contained no employer representatives. It was confirmed that the ELG was able to suggest changes to the programme and had been consulted by the School in preparation for the programme’s revalidation.

5.8 During training, using case studies, students would learn how to relate data to patients, interpret results and provide a diagnosis. Depending on the placement site, students would not necessarily undertake training in all the major disciplines (see ACSLM comment at paragraph 6.3
below). Normally students would be based in one department for the duration and while the focus of their training would be on the discipline within that department, they would be exposed to other disciplines as well. In the Southern Trust, on arrival, students would undergo a 3-day rotation through each discipline and would then choose the department in which they wished to undertake their training. In the Belfast Trust, staff would visit the University in advance and brief students on the discipline options available to them. Students would then be invited to a tour of a placement site within the Trust. This was designed to help students decide in advance the discipline in which they wished to train.

5.9 Pastoral care on a day-to-day basis was the primary responsibility of mentors and training officers. However, Trusts' heads of departments and the School's Placement Co-ordinator would also have a role. The Trusts' own occupational health departments were available for support where required. Trusts would not be informed in advance of a student's mental health problems, which would only come to the fore should an issue arise during training.

5.10 It was confirmed that some Trust staff contributed to teaching on the Pathology programme.

5.11 Mr Wainwright (IBMS) expressed disappointment on behalf of the IBMS panel that there were not more employer representatives present as this was an important part of the accreditation process and a wider view of employers would have been welcomed. The ACSLM panel agreed with this.

6 MEETING WITH SUBJECT TEAM

Pathology Placement

6.1 The Pathology course team assure themselves of the effectiveness of training during the placement year in a number of ways. The placement tutor remains in constant contact with the placement site and the academic tutor visits the site on at least two occasions. Both make themselves available throughout the placement year to both the student and placement staff. By this means, the academic staff ensure that quality training is being delivered. In addition, the University ensures that all supervisory staff on site are currently certified as trainers. Moreover, every two years, students complete questionnaires on their placement experience.

6.2 In response to student suggestions that on occasion, a mentor had not been identified at the outset of placement and no formal training plan had been in place, the team suggested that sometimes students did not realise that a supervisor was in fact their 'mentor'. Moreover, some students found the transition from university to a workplace difficult, particularly those without previous real world experience. The academic tutor's first visit would normally occur after two months. During that visit, the tutor would address any concerns raised by the student. The Team confirmed that students' joining instructions included, inter alia, start date and time, identity of their mentor and provision of a training plan. The provision of same was the responsibility of the placement site. However, soon after arrival, students were required to return a completed checklist to the University to ensure that everything that should be, was in place. Mr Wainwright (IBMS) suggested that on sites where training was not a regular occurrence, the system might not be as robust or effective. It was therefore incumbent on the University to have standard written instructions for placement laboratories detailing requirements that the site must meet in relation to arrangements on arrival and support for students throughout the placement year. These were issues that should also be discussed during ELG meetings.
6.3 Dr Williams (ACSLM) expressed concern that students on placement were not exposed to all five disciplines (Biochemistry, Haematology, Blood Transfusion, Microbiology and Cellular Pathology), a requirement of the ACSLM. The team stated that in the bigger hospitals, exposure to all five disciplines was possible. Normally, while students would be located in a single department for the duration of the placement, in completing projects, they would be required to consult with other departments to collect data and by this means, they would have exposure to all disciplines.

**Teaching Staff (External/Internal)**

6.4 The team confirmed that industry practitioners contributed to teaching on the programmes and were involved in placement preparation. For example, in the Graduate Diploma programme, three of the e-tutors were clinical scientists. Practitioners from the Trusts were also involved in delivery of some modules, particularly in relation to the presentation of case studies. The use of online/YouTube sources was also a consideration. As one means of ensuring their effectiveness, all external contributors were encouraged to undertake a teaching qualification, a suggestion “quite a number” had taken up. Academic staff also provided ongoing advice and mentoring. Feedback from students was an important additional measure of effectiveness and generally, student feedback was very positive. The quality of teaching was also reviewed annually through the module evaluation process. It was pointed out that external contributors marked only at Master’s level and their marking was moderated by internal academic staff.

6.5 The team stated that the first priority in recruitment was that a candidate be able to deliver the clinical aspects of a programme. Thereafter, where absent, new staff would be encouraged to complete a PhD in order to forge academic and clinical links.

**Standardisation of Provision**

6.6 Programme curricula were designed in line with the relevant QAA benchmark statements and IBMS requirements. Each module team would design their own module and learning outcomes and, to ensure standardisation, team members would collaborate in areas such as the level and type of assessment, assessment criteria and marking schemes. External examiners represented a further safeguard through their review of modules across a programme and were thus able to identify inconsistency where apparent.

**Learning and Teaching Strategy**

6.7 The University’s new Learning and Teaching Strategy 2018/19 – 2023/24 was designed to support the highest quality teaching, learning and student experience. It was learner-centred and was underpinned by, inter alia, curriculum design and student experience principles and prioritised areas such as active learning, collaborative staff/student partnerships and professional learning, employability and a quality learning environment, all supported by teaching and research and online and physical resources. It was tied to the continuing professional development of staff who were incentivised to engage with the Strategy. The development of more learning spaces, small group teaching and technology-based active learning were all part of the Strategy. An ‘Association of Learning Technology’ (ALT) was promoted centrally. Within the School, in an effort to enhance the technical expertise of staff, over the past year there had been a series of workshops on the latest developments in the use of technology in teaching.
6.8 It was acknowledged that issues around mental health required more thinking related to adjustments within learning and teaching. This required more than just thinking about how lectures were delivered but about the type and design of assessments to be employed so as not to engender more than a normal level of anxiety associated with any form of assessment nor to disadvantage any individual student or group of students.

**Online Assessment and Feedback**

6.9 The online provision of assessment and feedback was now happening across the University. However, it was impossible to provide some assessments online, for example, practical exercises and laboratory books (although marks would be provided online). In the future, module boxes would be presented online for external examiners through a SharePoint site.

**Curriculum Design Principles**

6.10 The curricula included a number of 10-credit point modules that did not align with the Curriculum Design Principles that recommend a minimum size of 20 credits. It was explained that the use of 10-credit point modules was required to accommodate professional practice within the curricula. This approach ensures that professional practice was not “compartmentalised” within the structure, but was disseminated across each level of the programme.

**Curriculum Design**

6.11 There was employer input during the review of the provision in preparation for revalidation/reaccreditation. The School had hosted a ‘stakeholders day’ attended by employers, including industry employers, students, (recent) placement students and recent graduates to obtain their feedback and input into programme development. Careers Office staff had also attended the event. In addition, every year, feedback was obtained from a number of sources including students, external examiners and employers (through the ELG).

**Employer Liaison Group**

6.12 It was acknowledged that the ELG was focused on the Pathology programme. However, there were now plans to introduce a liaison group for those programmes with industry placements. While some employers would be located in Britain, this could be overcome using online tools such as Skype. The Careers Office would be able to help through their extensive industry contacts and alumni working in the sector would also be utilised. The intention was to develop a more cohesive framework around industry and laboratory input into supporting and developing all the programmes within the unit.

**Student Issues**

6.13 In response to a student suggestion that they would welcome an earlier introduction of presentations in the curricula, the team stated that presentations were already introduced as part of the assessment strategy in first year and were then built on during the second and final years. In addition, during the Pathology and DPP placement years, students were also required to give a presentations regarding their progress.
6.14 Students had suggested inconsistency in the provision of online lecture notes in advance of lectures. The team responded that while there may be inconsistency in the timing, most tutors did provide notes in advance. There was however no onus on them to do so. One reason for not providing notes in advance was to encourage attendance. Where there was a special needs requirement, reasonable adjustments were made. This applied also to assessments. The Chair suggested that module co-ordinators had autonomy regarding provision of notes and while recognising the attendance issue, this was a balance to be struck by the teaching team.

6.15 The external examiner in each of the last three years had reported students’ concern that Molecular Biology appeared to be marked harder than other modules. The team responded that the assessment in this module included a component requiring critical analysis of a molecular pathology publication. While students had complained that they had found this component particularly difficult, a review of marks indicated that in fact this assessment had attracted the highest marks. It was also suggested that students had never met with the external examiner and that there appeared to be no response to external examiner comments. It was pointed out that students had met with the external examiner during the previous summer. Also, the external examiner had been asked to closely review the Molecular Biology module and had reported that he was content with module delivery, assessment and marking. It was emphasised that all issues raised by an external examiner were responded to; that this was a requirement of the University’s external examining process.

6.16 Students had suggested that the library induction would be better placed later in the first semester given the amount of information that they were required to assimilate during their first week. The team responded that while there was one during the first week, a second library induction took place during week 5 that was not simply passive, requiring students to complete a questionnaire.

6.17 Students had raised timetabling issues including being unable to avail of Wednesday afternoon sporting activities. The team acknowledged that timetabling was a difficult and complex issue. However, efforts were made to make it as simple as possible, to shorten the duration of lectures, to spread the attendance load across the week and, where possible, to free up Wednesday afternoons.

7 CONCLUSIONS

7.1 The Panel commended the Subject Team on the following:

Ulster Panel
- Strong liaison between the University and employers
- Robust processes for the dissemination of good practice
- Innovative engagement with students using a wide range of digital and active learning pedagogy

ACSLM Panel
- Evident care and dedication of the staff members working as a cohesive and enthusiastic team.

IBMS Panel
• Commitment of the university and academic team to provide a broad spectrum of degree programmes for graduate careers in biomedical science.

7.2 The Panel agreed to recommend to the Academic Standards and Quality Enhancement Committee that the provision within Subject Unit 3C1a Biomedical Science be approved for a period of five years (intakes 2019/20 – 2023/24 inclusive) subject to the condition and recommendations of the Panel being addressed and a satisfactory response and a revised submission being forwarded to the Academic Office by 30 January 2019 for approval by the Chair of the Panel.

7.3 Both professional bodies agreed to recommend to their respective approval authority reaccreditation of the provision from September 2018 for a period of five years subject to their conditions and recommendations being satisfactorily addressed. The ACSLM accreditation relates to the BSc Hons Biomedical Science with DPP (Pathology) only.

ULSTER PANEL

Condition

1) that those issues detailed in the appendix to the panel report be addressed;

Recommendations

1) That steps be taken to enhance links with industry employers similar to those that currently exist for non-industry partners (as discussed with the Panel).

2) In line with the University’s electronic management of assessment and feedback policy, that steps be taken to ensure that, where appropriate, assessment and feedback is delivered using online technology ensuring that a consistent approach is taken across the provision.

3) That a review of the level of assessment in the 10-credit point modules be carried out in terms of the level of assessment in each taking account of the University’s ‘Assessment Workload Equivalence Guide’.

4) That a review of the learning outcomes in the level 7 modules be carried out to ensure that they are appropriate for that level (see Approval Handbook, Appendices 4 & 5).

5) That delivery of the curricula is supported by an adequate number of professionally qualified and accredited practitioners.

ACSLM PANEL
Conditions

1) Students on clinical placement must experience a broad exposure to all five major disciplines (Biochemistry, Haematology, Blood Transfusion, Microbiology and Cellular Pathology) rather than an in-depth exposure to one discipline.

2) Any major changes to the course content, method of delivery or assessment, must be notified to the ACSLM for consideration

Recommendations

1) The team should consider the introduction of “Presentation Skills” in year one of the course.

2) Recruitment and management of staff members providing the Haematology, Blood Transfusion and Cellular Pathology modules should be carefully done with a view to consolidating and strengthening the provision of these specialities.

3) Provide more transparency when following through on recommendations etc subsequent to course meetings, reviews etc.

IBMS PANEL

Conditions

1) Provide a mapping document to demonstrate where the subject specific elements of the QAA benchmark statement for biomedical science (2015) are being met in the curriculum.

2) Provide a selection of reports from the quality assurance review for placements and feedback from the External Examiner who has reviewed the reports and sample portfolios.

3) Provide evidence there has been a review of the effectiveness of processes for ensuring placement laboratories have necessary arrangements in place for receiving students and there is support for them through their placement. For NHS placements, this must include checking currency of IBMS training approval status, specific training programmes for placement students and targets for completing elements of the Registration Training Portfolio, adequacy of information provided to students regarding key personnel and induction into their placement and confirmation of their understanding of this.

Recommendations

1) Future business planning should ensure subject specific expertise from practitioners continues to contribute to the academic teaching.

2) In line with documents required for reaccreditation (Accreditation Criteria Section F Document Checklist) a Self-Evaluation document must be provided for the next re-accreditation visit. *(To note: the submitted documentation and subsequent discussion did include details of rationale for changes but providing this document would have provided an opportunity to express more clearly the contributions made by students and employers to the review process).*
3) There needs to be some standardisation around provision of lecture material before taught sessions, this seemed quite ad hoc, or set expectations for each module then students know what will happen and if there is variety they are aware.

4) The team should consider the introduction of “Presentation Skills” in year one and two of the course for all students.

8 APPRECIATION

8.1 The Chair thanked the Panel members and in particular, the external members and the professional body representatives, for their valuable contribution to the revalidation/reaccreditation process.