**Royal Society of Biology response to the consultation on the Biomedical Sciences Benchmark**

**20th August 2015**

**Overall, does the revised subject benchmark statement continue to define the nature of the subject area and academic standards expected of graduates in the subject?**

Yes

No

Please add further comment

Overall the responses received from our members and member organisations regarding both benchmarks were supportive of the draft statements. Respondents felt that they described the subject area well and reflected the standards expected of graduates within these fields.

Although the Biomedical Sciences benchmark comprehensively covers both theoretical and practical aspects, some members of the Society for General Microbiology with industry and healthcare science experience commented that there was perhaps an over-emphasis on research, given the practical and vocational nature of many jobs attainable with a biomedical sciences degree.

**Does the information in the introductory section(s) successfully describe the nature of the subject and its defining principles?**

Yes

No

If not, what additional aspects might be included, excluded or elaborated?

Section 2.5 that identifies the employment market for biomedical sciences graduates may benefit from acknowledging that a large number of occupations biomedical graduates enter have a strong practical component and that the benchmark supports the development of practical skills.

**Does the section on subject knowledge and understanding still describe the core aspects of the subject area?**

Yes

No

Are there any areas of knowledge that should be included to reflect newly emerged areas of teaching/research? Are there any areas that have become redundant?

We believe that the section on subject knowledge understanding and skills does describe the core aspects of the subject area. Section 5.4 gives a broad overview of what can be expected to be covered in a range of Biomedical Sciences programmes and 5.5 breaks it down further.

With the increase in the development of personalised medicine, it will be important to recognise the impact of patients’ sex and other factors on pathology and drug responses. Under Human / Medical Physiology, differences related to sex are highlighted within section 6.11vii) continuity of life – *reproductive system (male and female) and integration with other systems.* For Pharmacology under section 6.6iii) which currently states “*Individual variation in drug action and toxicity for example: the effects of ethnicity, age, pregnancy, genetic factors, disease and drug-drug interactions, in addition to the potential for allergy and drug addiction”,* we felt sex should also be included in the effects, modifying it to: “*Individual variation in drug action and toxicity for example: the effects of ethnicity, age,* ***sex****, pregnancy, genetic factors, disease and drug-drug interactions, in addition to the potential for allergy and drug addiction*.”

6.6iv) *Pharmacological methods, including knowledge and / or practical experience of:*

*Principles of clinical trials, for example the avoidance of bias, the effect of sample size, the placebo effect, the concept of therapeutic index, as well as the ethical issues surrounding the use of human study participants and human tissues.*

It was felt that it should be made transparent that predicting the therapeutic index of a compound during drug development relied upon the integration of pharmacodynamics, pharmacokinetics, toxicology and other safety information to contribute to an understanding of the risk associated with the drug.

**Does the section relating to subject-specific skills cover adequately the skills expected of a graduate in the subject area?**

Yes

No

Please add further comment

We feel that this section is covered well.

**Is the coverage of the generic skills expected to be acquired by a graduate in the subject area adequate and appropriate?**

Yes

No

Please add further comment

Section 4.2ii) *obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses* alludes to the use of evidence in the decision making process. However, a member commented that they would like to see explicit reference to “decisions being made based upon evidence” as a transferable skill.

**Does the section on teaching, learning and assessment continue to provide an appropriate indication of the types of teaching and assessment relevant to the subject area?**

Yes

No

Please add further comment

It was noted that there are a wide variety of strategies referenced in the benchmarks and we are pleased to see reference to the teaching, learning and assessment strategies not being static. We agree that they should be flexible and adaptable to best fit our current understanding of good practice in teaching. Developments in teaching development and design should be based upon recent educational research in design and delivery, and new subject content should be based upon up to date scientific research in the field. The range of suggested activities is sufficiently broad for both teaching and assessment.

Under section 7.2, which lists learning and teaching strategies/ experiences that may be used during courses, it has been suggested that the point “*work-based and other placements”* could be expanded to say “*work-based, other placements or interactions with science professionals”****.*** There should be an expectation that students are able to experience their science within an appropriate context, but there are issues with being able to support access to placements for all students. Alternatives could include supplementary shorter visits and meetings with those working in industry. We would recommend that the final bullet point on the list is rephrased as it currently states “*use of distance-learning materials, including electronic multimedia, video, recordings and broadcasts”;* these modes of learning are commonly used as part of direct teaching in lectures and seminar sessions - they are not limited to distance learning.

As stated in the introductory section 1.1 for both the Biosciences benchmark and the Biomedical Sciences benchmark, there is “*significant and necessary overlap”.* Point 6.2 in the Biosciences benchmark highlights the expectation that teaching staff should have access to professional development opportunities; the RSB is fully supportive of this. We would like to see a similar statement under section 7 of the Biomedical Sciences benchmark statement.

**Does the benchmark standards section successfully articulate what is expected of a graduate in the subject area in terms of a threshold level of attainment (and where relevant, typical and excellent attainment)?**

Yes

No

Please add further comment

For the section of the benchmark allocated to the threshold standard for Biomedical Sciences (8.8), it was noted that although disease is referenced, there is no reference to infectious disease.

**Please use this space to add any further observations relating to the revised subject benchmark statement not covered in the questions above.**

Since the production of this document, the Society of Biology has been granted the use of the Royal title and is now known as the Royal Society of Biology. Where the Society is named within the document it should be updated to the Royal Society of Biology.