Name and Title: Professor Eamonn Kelly

Email: E.Kelly@bristol.ac.uk

Home institution: University of Bristol

Award or subject area examined: 2nd MB/2nd Vet MB Mechanisms of Drug Action

Associated University of Cambridge Faculty/Department: Pharmacology

Please tick the statement which most closely reflects your views of the examinations.

- The standards set for the award(s) or subject area(s) above were appropriate. The processes for assessment, examination and the determination of awards were sound and fairly conducted. [✓]

- Any recommendations made are for the purposes of enhancement to the course and its assessment.

- The standards set for the award(s) or subject area(s) above were appropriate. The processes for assessment, examination and the determination of awards were sound and fairly conducted. HOWEVER, there are some risks to the future assurance of the course and its assessment, as outlined in my recommendations.

- There are immediate concerns or risks relating to the standards set for the awards or subject areas above and/or the processes for assessment, examination and the determination of awards. These require immediate action on behalf of the University to prevent reoccurrence in the next set of examinations.

Please tick as appropriate:

- Are you satisfied that you received sufficient programme materials (programme handbooks, regulations, and marking criteria)? [✓]

- Are you satisfied that you were consulted adequately on draft examination papers, and that the level of questions was appropriate? [✓]

- Were you given sufficient opportunity to scrutinise the general standard and consistency of marking of examination scripts and coursework? [✓]

- Have issues raised in previous report(s) been addressed to your satisfaction? [✓]

Please return this form, with your full report, to: vcoxternalexaminers@admin.cam.ac.uk by July 31st for undergraduate examinations, 1st October for Masters Degrees, and 12th October for results.

Or: The Vice-Chancellor, University of Cambridge, The Old Schools, Cambridge, CB2 1TN.

Please also forward copies to your Chair of Examiners.

This form can be downloaded from: http://www.admin.cam.ac.uk/offices/education/examiners/eecoversheet.pdf
NOTES FOR EXTERNAL EXAMINERS

Submitting reports to the University

1. All External Examiners are required to submit a written report at the conclusion of their involvement with the examination, and may comment on any aspect of the examination, including the fairness of the assessment and the standards of the candidates for the part of the examination that they are involved with.

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Report structure and content

4. The written report is made available for discussion by the appropriate Faculty or Department concerned with the examination and by the General Board’s Education Committee. Reports are usually considered by the senior committees of the relevant Faculties and Departments. These committees include student representatives and reports should therefore be written in a form that avoids discussion of individual candidates by name or candidate number.

5. There is no University standard reporting template, but reports are expected to cover four main areas:
   - the extent to which standards are appropriate for the examination and the qualification;
   - the extent to which standards are comparable with similar programmes in other UK institutions with which you are familiar;
   - the extent to which processes for assessment, and the determination of awards were sound and fairly conducted;
   - any good practice which you feel could be usefully identified for further dissemination.

6. Reports may also include commentary on the following topics, at the discretion of the individual External Examiner:
   
   **the examination**
   - the design, structure and marking of the examination;
   - the procedures for assessment, including the basis and rationale for any comparisons of standards made;
   - the strengths and weaknesses of the students as a cohort;
   - whether your role is appropriate for the examination to which you were appointed, including whether or not you had sufficient access to any material needed to make the required judgements;

   **the course**
   - the curriculum, its aims, content and development;
   - resources as they impact upon student performance;
   - the quality of teaching and learning, which may be indicated by student performance.

General points

7. Submitted reports will only be used in accordance with General Board policy (for the monitoring of academic standards within the institution) and in line with current legislation.

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For this session (2014-2015), there were two sets of exam papers that I was asked to deal with. The first set included an MCQ paper and a Practical paper, and these counted towards the Second MB/Second Veterinary MB Mechanisms of Drug Action exams. The second set, which involved an essay paper, counted along with the first towards the Tripos Part IB.

I received the question papers (with answers where appropriate) in March and had a few queries and comments, which were promptly dealt with by the Senior Examiner.

The MCQ paper is wide ranging and quite searching, but is an appropriate test (counts for 75% of the Second MB mark) of the Mechanisms of Drug Action, i.e. covers the basic scientific information a clinician needs to know about how the drugs they are prescribing work. Most aspects of pharmacology (excluding neuropharmacology) are covered.

The Practical paper was composed of two questions, one a data analysis/interpretation of figures from a paper, and the other covering basic drug-receptor interactions in the form of a question on ligand-receptor binding. These questions were generally well constructed, and tested in large part the numerical skills of the students, along with their ability to think about drug action. On reflection I have two comments about the second question on ligand binding; firstly this question was perhaps a little too straightforward, and secondly the question included Satchard analysis which may be considered somewhat obsolete in terms of modern pharmacology. Nevertheless I very much support the focus on numeracy and data interpretation that this paper provides for medical and veterinary students.

The exam mark spreadsheet was explained to me in detail during my visit. In addition all exam scripts were available for me to look at during my time in Cambridge, if I so wished. I was given a number of sets of scripts to look over, including ones around the pass/fail borderline of 50%. In my opinion the borderline of pass/fail is a fair one and I was satisfied that this mark fairly distinguished those who passed from those who failed (between 7 and 8% of the cohort) the Second MB.
In addition I was given sets of scripts reflecting different levels of achievement in the Tripos Part IB, including the highest firsts, scripts from the 2.1 band, the 2.2 band, as well as scripts that were clear fails (<40%). I was happy with the standard of marking, with the highest firsts representing exceptionally good students who wrote outstanding essay answers.

A general comment I have is with regard to the difference in achievement between the Medical and Veterinary students. The latter do less well overall, which can be seen in all parts of the exam (MCQ, Practical, essays); furthermore this difference appears to occur each year. Although teaching staff have considered why this might be, I would encourage them to continue doing so. Although there are unavoidable practical/logistical factors that could explain the difference, another possibility is that the (perhaps inevitable) emphasis on human pharmacology in the course makes certain aspects of the material less interesting/applicable for the vet students.

One last comment refers to the practical content of the course. The range of practicals is excellent in terms of basic receptor pharmacology, however there is no pharmacokinetics practical. As this is an important part of the course, I would encourage the staff to consider in future years the introduction of such a practical or at least a simulation to cover this area of study.

Overall I am very happy with the content of the course, and with the associated assessment processes. At a time when at other institutions the important pharmacology content of medical and vet degree courses seems to be shrinking, it is very good to see that this appears not to be the case at Cambridge.

Finally I would like to thank the Senior Examiner and other members of the Department of Pharmacology for their hospitality, courtesy and efficiency.

Eamonn Kelly  
Professor of Molecular Pharmacology  
University of Bristol  

9th July 2015
Name and Title: Professor David MacEwan

Email: macewan@liverpool.ac.uk

Home institution: University of Liverpool

Award or subject area examined: Pharmacology NST/BBS

Associated University of Cambridge Faculty/Department: Pharmacology

Please tick the statement which most closely reflects your views of the examinations.

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Report from David MacEwan, Pharmacology external examiner 2015

- The extent to which standards are appropriate for the examination and the qualification.

The standards are consistent with other UK university Pharmacology degrees that I have taught and examined on, as well as acted as external examiner.

- The extent to which standards are comparable with similar programmes in other UK institutions with which you are familiar.

I have academic experience in Pharmacology teaching at five UK Universities and one US University. Moreover, I have acted as external examiner at three other UK institutions. In short, the academic standards and achievements of these students are indeed comparable to these other institutions

- The extent to which processes for assessment, and the determination of awards were sound and fairly conducted.

The examination process I believe was fairly conducted and gave the candidates sufficient opportunity to show their knowledge and grade.

- Any good practice which you feel could be usefully identified for further dissemination.

I felt that the breadth of the Pharmacology topics tested was particularly wide and strong. There was ample opportunity for students to show their abilities across a wide range of related topics and subjects. The project reports that I read were also to a very high standard.

- The examination design, structure and marking of the examination.

There was evidence of rigor among the exam marking that I witnessed. The opportunity for two independent blind markers across most exam material was particularly impressive to witness.

- The examination procedures for assessment, including the basis and rationale for any comparisons of standards made.

There were clear grading standards that were made known to the marking staff beforehand and to myself. In general, any exam material I read was clearly overall within the degree classification awarded by the Pharmacology exam committee. Where there was some uncertainty at the borders of two degree classifications, the candidates were invited for interview and orally examined by myself and the exam committee. These viva exams were conducted rigorously and fairly and there was good agreement among those present, after general discussion by all.

- The examination strengths and weaknesses of the students as a cohort.

The standard of students among this cohort that I inspected was of a strong average level, with the expected allocation of degree classifications that are similar to those from other institutions awarding undergraduate Pharmacology degrees.

- Whether your role is appropriate for the examination to which you were appointed, including whether or not you had sufficient access to any material needed to make the required judgements.
The Head of the level 3 tripos, Prof Robin Irvine, was exceptional at keeping me informed of the process, expected timelines, expectations of the students and examining staff. The outcomes were for me, very satisfactory, and in line with the expected classifications that were supported by the exam board.

- The course curriculum, its aims, content and development.

The course curriculum appears nicely balanced among the expected topics to be taught in Pharmacology, without biasing any one particular area. This is my first year as Pharmacology external examiner, so I am unable to comment thus far on the course’s or the examination process’ development.

- The course resources as they impact upon student performance.

The course resources are of good quality. Perhaps best among these is the communal tearoom space that the undergraduates share with staff. This is perfect for giving the student’s a feeling of belonging and helping their interaction with academic staff, to the benefit of their studies.

- The course quality of teaching and learning, which may be indicated by student performance.

Cambridge is at the very top in terms of student satisfaction, so others could learn from its practices. Similarly, the high number of intercalating medical and veterinary students ensures that the majority of the Pharmacology students are highly motivated and enthusiastic to learn and progress in their studies.
Mechanisms of Drug Action September 2015 sitting

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE AND SURGERY
SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF VETERINARY MEDICINE
(MODA1 and MODA2)

For this exam there were two sets of exam papers that I was asked to look over; an MCQ paper and a Practical paper. I received the question papers in good time and had a few corrections and minor comments, which were promptly dealt with by the Senior Examiner.

The MCQ paper was an appropriate test of the Mechanisms of Drug Action, i.e. fairly comprehensive coverage of the basic scientific information a clinician needs to know about the drugs they will be prescribing. The Practical paper was composed of two questions, one covering basic receptor theory/mechanisms, and the other being a pharmacokinetics calculation and data interpretation-type question. These questions were well constructed, and tested the numerical and data handling skills of the students. Overall the exam was a fair test of knowledge and understanding of the subject, and the level of difficulty was in my opinion about the same as the May/June exam, as well as the exams in the previous year.

The Senior Examiner forwarded the marksheet to me following the exams and we subsequently discussed the marks by telephone. I had no significant issues or concerns to report and was happy with the final outcome:
For 2nd MB there were 16 passes and 1 fail
For 2nd Vet there are 7 passes and 2 fails

I approved the pass/fail list and the marksheet.

I would like to thank the Senior Examiners Professors Taylor and Edwardson for their courtesy, helpfulness and efficiency.

Eamonn Kelly
Professor of Molecular Pharmacology
University of Bristol
23rd October 2015