



**PROVOST'S REPORT TO COUNCIL ON  
THE REVIEW OF THE  
DEPARTMENT OF ANATOMY**

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**1. INTRODUCTION**

This report presents the outcome of a departmental review exercise undertaken by Trinity College Dublin in relation to its Department of Anatomy. The report is based on (i) feedback from an external peer reviewer visitation, conducted on the 12<sup>th</sup>/13<sup>th</sup> February 2002 by Professor G Burnstock, Royal Free and University College Medical School, London, and Professor B Hillen, UMC St Radboud Nijmegen, the Netherlands, received on 12<sup>th</sup> March 2003, (ii) a submission from the Faculty Dean received on 29<sup>th</sup> April 2003, and (iii) a submission from the Department, received on 24<sup>th</sup> April 2003.

As Council is aware, the main purpose of the departmental review exercise is (a) to provide a structured opportunity for the Department to reflect on its activities and plans for development, while benefiting from a constructive commentary by senior colleagues external to College; and (b) to ensure that quality and standards in teaching, research and administration are being maintained and enhanced, and that any areas of concern in this regard are identified and addressed within an eighteen month timescale. This review process ensures that each academic department in College will have its undergraduate and postgraduate provision reviewed systematically once every five years.

**2. OVERVIEW OF THE DEPARTMENT**

**2.1 Aims and Objectives of the Department**

1. To continue in its role as a center for excellence in the teaching of Anatomy.
2. To teach clinically relevant anatomy in each of the Undergraduate courses to which the Department provides teaching.
3. To continue research in the areas of sports and exercise medicine and science, musculoskeletal anatomy, emergency medicine and associated surgical procedures, osteoporosis and archaeological human remains and to continue to foster links both at an interdepartmental level and at a clinical level with various medical and surgical specialties.

**2.2 Programmes to which the Department provides teaching**

*Key Programmes:*

*Undergraduate*

Bachelor in Dental Science  
Bachelor in Medicine  
Bachelor in Science (Clinical Speech and Language Studies)  
Bachelor in Science (Occupational Therapy)  
Bachelor in Science (Physiotherapy)  
Bachelor in Science (Therapeutic Radiography)

The Department also provides teaching for part of the Neurosciences option of the BA (Mod) in Science.

*Postgraduate*

Diploma in Gynaecology and Obstetrics

The Department also provides seminars for part of the Diploma in Specialist Nursing and the M.Sc. in Cardiology. In addition the Department contributes to a number of specialised short courses including the Certificate in Maximising Performance and Monitoring of Sport, First Aid, Advanced First Aid Courses to the National Ambulance Training School and Advanced Cardiac Life Support courses to physicians in training.

### 2.3 Research

The research profile of the Department of Anatomy reflects the teaching ethos of the Department and the background and interests of the staff, some of whom maintain links with clinical practice. Currently the main areas of research in the department are: Sports and exercise Medicine and Science, musculoskeletal anatomy, emergency medicine and associated surgical procedures, osteoporosis and archaeological human remains. The Department is engaged in collaborative research in the area of exercise science with the Department of Physiology and musculoskeletal research with local orthopaedic surgeons located in various hospitals. In addition from time to time members of the Department embark on research projects related to areas such as surgery or emergency medicine.

### 2.4 Summary statistical profile of the Department for the academic year 2001-2002<sup>1</sup>

Full-time staff FTE	Part-time staff FTE	Undergraduate FTE	Postgraduate FTE	Staff: Student Ratio
8.00	0.53	79.47	11.42	1:11

<sup>1</sup> Figures approved by Council at its meeting on 4<sup>th</sup> December 2002

### 2.5 Accommodation and Facilities (Physical Resources)

The Anatomy Building is located towards the west end of the College campus and is about 170 years old. The original building comprised an Entrance Hall, Staff Offices, Lecture Theatre, Classroom, Dissecting Room and Museum. Numerous modifications have been made to the interior over the years including most recently the Human Performance Laboratory, which was constructed on the ground floor and a Seminar Room, Multimedia Room and Dark Room which have been incorporated into an old office area on the first floor. A small extension to the Dissecting Room was added to provide embalming and storage facilities for the cadavers. The Department has a large collection of skeletal specimens and the museum houses a collection of anatomical and anthropological specimens.

## 3.EXTERNAL PEER REVIEW REPORT

### SUMMARY OF REPORT

#### TEACHING

The reviewers begin their report by stating that '*Essentially, the Department of Anatomy has been developed as a specialised teaching facility rather than as a typical academic Department*'. They consider that '*the lecturers are clearly highly dedicated teachers, much appreciated by the students, and the dissecting room is very attractive and run extremely well by equally dedicated technicians*'. Nevertheless, the reviewers indicate that '*there are serious limitations to the current, very traditional teaching programme*'. In relation to course content, they note that '*the course is limited to descriptive anatomy*' and lacks '*the modern emphasis on functional anatomy*' and furthermore that '*there is little association with histology*' or use of '*imaging techniques*'. They comment that the anatomy courses are isolated from other parts of the (medical) curriculum. The reviewers indicate that clinical departments would like more active interactions and flexibility to plan teaching for the different clinical disciplines and also that the teaching programmes for non-clinical courses could be more appropriately aligned to their needs.

With regard to staffing, the reviewers note that the academic staff '*are all clinically qualified and take pride in giving their anatomy teaching in a medical context but the teaching load is extremely high*'. The students '*were generally appreciative of the commitment and helpfulness*' of the demonstrators however the reviewers indicate that '*the number of demonstrators is far too small for the large group size*'. Furthermore, as the demonstrators are appointed for a nine-month period (September – May), little opportunity is provided to allow them to develop their teaching skills before term starts.

The reviewers indicate that the cadaver/student ratio of 1:10/11 '*is not sufficient for good dissection*' and consider that the department's present organisation of the teaching of dissection induces passivity. They note with concern the absence of modern radiologic images as an adjunct to teaching.

The reviewers note that *'the medical curriculum is in the process of reform with cuts to anatomy teaching early in the course, with more emphasis on later specialist teaching and/or revision courses. This sounds appropriate to us. In this development a close collaboration with clinicians and clinical departments should be encouraged and facilitated. The development of modern, integrated courses with a fair share of anatomy teaching in conjunction with the application is the current trend in Medical Schools.'* They emphasise the importance of integrating anatomy with other disciplines in the curriculum and the fact that *'the dissecting room and dissection are essential elements in teaching anatomy'*. Furthermore they note that when *'the acquisition of knowledge is closely related to its application, teaching becomes more effective'*.

### **RESEARCH**

The reviewers were critical of the publication output of the Department and note that there is no research plan for the Department as a whole. They also comment on the fact that there are no PhD students in the Department, no postdoctoral fellows, little outside research funding, few collaborative research projects, and no facilities or basic equipment for research. The clinically qualified anatomy lecturers consider that the heavy teaching load precludes research. The reviewers note that four of the staff are not trained in scientific research and require appropriate supervision in order to undertake doctorates.

### **RESOURCES**

The reviewers consider that the infrastructure of the Department needs to be upgraded. In relation to teaching facilities, they comment that *'there is no back-up by modern audio-visual self-learning facilities, including interactive video tapes etc. There are neither projections available for the students to study as examples of ideal dissections, nor are there cross-sections of the human body'*. However, the reviewers note that *'the Department has a limited number of audiovisual tapes, MRI and CT scans'* and *'has an extensive, if incomplete, set of cross-sections of the human body'*. In 2002-03, prosthetic specimens of the upper and lower limb were made available.

### **ORGANISATION AND MANAGEMENT**

Formal contact between Schools and Departments is via the relevant School Committee, at which all departments are represented and at which any issues affecting the School concerned are discussed. The Department notes in its self-assessment documentation that there is an excellent working relationship between all members of the Department which facilitates its overall administration. Departmental meetings are held at the start of each term and in the run-up to examinations and additional meetings are arranged as necessary. Formal records are held of departmental meetings. While formerly the administration of the Department was handled mainly by the Head of Department and one lecturer, the Department has recently spread the administrative burden more evenly and now each member of staff is responsible for the co-ordination of one or more courses.

The current arrangements for communication with students in the Department are largely informal and have worked well in the past. Recently the Department has conducted student surveys. With increased student numbers, it is proposed to form a Student Affairs Committee whose membership would include academic and technical staff together with representatives from all taught courses. This committee would meet once each term to discuss formally the issues affecting students in the Department.

The reviewers comment that the minority student groups (e.g. Therapeutic Radiography, Occupational Therapy, Physiotherapy, Dental Science, Clinical Speech and Language Studies) felt that their special needs were not recognised by the teaching staff, who directed most of their attention to the medical students.

### **Review of Anatomy Departments in Britain**

As part of their report, the reviewers describe what has happened to Anatomy Departments in Britain arising from the General Medical Council document 'Tomorrow's Doctor' and the introduction of the Research Assessment Exercise (RAE). The effect of this document and other factors was to reduce substantially the teaching of anatomy. The RAE assesses departments on research output. Anatomy Departments that did not score well in the RAE were merged with other research-oriented departments and anatomy teaching declined. The overall result of these changes has been an emphasis on research as opposed to teaching.

The reviewers comment that lessons can be learned from the experience in Britain. They state that small teaching departments will not survive in an academic environment and that *'the way to bring up the Department is investing in staff and infrastructure. With limited funding available, merger or close collaboration with a strong scientific*

group can be the way out, and besides, mono-disciplinary research is outdated. But, considering the present staffing of the Department, investments will have to be made'.

### **Future Direction**

The reviewers consider that *'the present department is not really viable as an independent academic department in the current academic environment'* and suggest that *'it appears essential that the Department is merged with another department(s) or, at least, enrolls in a close collaboration'*. Five options were raised, as follows:

1. Merger with Physiology
2. Merger with Surgery
3. Merger with Bioengineering
4. Establishment of a Central Service Teaching Facility (within the Faculty of Health Sciences)
5. Continuation as a separate department, but only with more diverse staff and research facilities.

Whatever the final decision, the reviewers state that *'staff should be encouraged to collaborate and use facilities in the two excellent new Research Institutes in Neuroscience and Bioengineering'*. The reviewers then proceed in their report to articulate some advantages and disadvantages of the options as specified above, commenting that a merger with Physiology is, on the surface, the most obvious merger possibility.

### **RECOMMENDATIONS**

The reviewers set out a number of recommendations:

1. *If a merger with Physiology is preferred, it will be important to recognise the importance of Anatomy (e.g. in the title of the School)*
2. *Perhaps use the window of change not to seek a replacement Professor of Anatomy (medically qualified) but replace with a Senior Lecturer in Neuroscience, Developmental and/or Cell Biology or Bioengineering, who has real research experience and potential (with evidence of attracting grants, publishing in top international journals etc.)*
3. *Schedule specialised anatomy courses at the start of each clinical speciality training*
4. *Instigate more core teaching by specialist staff in Radiology, Occupational Health, Physiotherapy, Dentistry etc.*
5. *Members of the Department should be encouraged to make closer ties (and collaborative research) with Bioengineering, Surgery and the new Neuroscience Institute (especially if a neuroscientist is employed).*

*Meanwhile, whatever happens in terms of a merger, the teaching of Topographical Anatomy should be upgraded by the following:*

6. *Appointment of another lecturer to reduce the current burden associated with current staff and reduced availability of well-trained demonstrators*
7. *Provision of audio-visual aids for teaching (at least eight computers and multimedia projectors; revision packages)*
8. *Make CT and MR scans available in the dissecting room together with anatomical cross sections and prosections*
9. *Appointment of demonstrators for twelve months rather than nine months*
10. *A junior Technician/Attendant for the Dissecting Room*
11. *Make dedicated courses for the various groups of students and do not make them appendages to the medical curriculum*
12. *It is essential that some microscopes of various kinds are purchased for the Department.*

#### 4. RESPONSES FROM THE DEPARTMENT AND DEAN OF FACULTY

The Department of Anatomy welcomes the report of the reviewers and agrees with most of its findings and recommendations.

In relation to teaching, the Department disagrees that the emphasis on functional anatomy is lacking and indicates that *'functional anatomy and the clinical significance of anatomy is emphasised in every course. In addition, the Department provides formal training and assessment in clinical skills to the second and third year medical students'*. The Department acknowledges that the emphasis on functional anatomy would be greatly improved by adopting the recommendations of the reviewers for more active interactions with other disciplines. The Department strongly agrees with the reviewers' recommendations that individual Schools would benefit from having their own dedicated anatomy course and notes that considerable progress has been made in this area. Chronic understaffing is cited by the Department as a key problem and it highlights the fact that for many years, no member of staff has had leave of absence - primarily because of the high teaching load and difficulties of finding a replacement. The significant increases in student numbers, particularly in Medicine, together with the increased number of dedicated courses, has resulted in an increase in the number of lectures and practical classes and associated administrative activity.

The Department acknowledges its heavy reliance on practical teaching by demonstrators. As student numbers and the range of courses have increased, it has become necessary for the course co-ordinators and where possible, additional lecturers to attend large practical classes. In recent years, it has become much more difficult to recruit high-calibre demonstrators. The Department notes that demonstrators are appointed for a nine-month period (September – May) and this provides little time for training before term starts. The Department suggests that such appointments should be made on a twelve month basis and include the option of undertaking the degree of MSc in Anatomy without payment of College fees. Another option is to replace demonstrators with PhD students on a phased basis.

The Dean notes that the *'traditional approach to Anatomy including dissection for medical students has been augmented and replaced in universities with computerised assisted learning / electronic based material together with an increasing emphasis on prosected material. Prosected specimens are often prepared by those undergoing higher training in Surgery. These are matters that need to be carefully considered by the Faculty and the Department of Anatomy together with the recommendations within the context of overall priorities within the School of Physic and the Faculty of Health Sciences'*.

The main area of research in the Department has been in Sports and Exercise Science and in projects undertaken by MSc students. Despite criticism from the reviewers regarding the publication output of the Department, it maintains that in this area it has done a reasonable amount of research. The Department states that the main problem is lack of time, and that more could be done if the teaching and administrative burdens were less. The Department accepts the need for a broader departmental research plan and welcomes the proposals for change outlined in the report.

The Department notes the comments of the reviewers regarding the review of Anatomy Departments in Britain (see above) and welcomes their recommendations.

The Department comments on the 'merger options' set out by the reviewers and outlines its views on each of the options presented.

The Department considers that the Chair of Human Anatomy and Embryology (1922) should be filled and that there should be an increase in staff as recommended by the reviewers. It notes that *'a merger without these preliminary steps will do nothing to improve matters'*. However, the Department states that *'since the review, one Lecturer has died and one Demonstrator has resigned. Because of the financial cut-backs these posts were not replaced. Further, the Department has not been able to advertise the Demonstrator posts so far this year ... and it anticipates great difficulty in obtaining suitable applicants at this late stage. In brief, the staffing of the Department is considerably worse than at the time of the review and may further deteriorate next year'*.

In his response to the report, the Dean comments that *'the School of Physic is currently considering rationalisation of the departments within the School of Physic in the context of curricular reform and research promotion. The School and the Faculty would like to give most careful consideration to the development of the subject of anatomy, the replacement of the vacant Chair and the posts that have fallen vacant and have not been filled due to budgetary*

restrictions'. He indicates that 'in reviewing the position of the Department of Anatomy, the School of Physic will take into account the concerns and recommendations of the reviewers together with the comments from the Department. Already a working group of the Faculty is working on the rationalisation of departments under the Vice-Dean, Professor Feighery'. The Dean notes that it is important that the needs of the other schools in the Faculty be taken into account when consideration is given to the recommendations of the reviewers. Furthermore, the Dean states that 'it is important that College gives recognition to the efforts of the members of the Department who have been working in unsatisfactory circumstances for many years'.

## 5. RECOMMENDATIONS TO COUNCIL

In addition to the Department addressing the detailed recommendations outlined in the review report, the following recommendations are made to Council in light of the review report and the responses from the Department and the Dean:

(a) that the College should:

1. Recognise the difficult circumstances that have prevailed in the Department in recent years and appreciate the strong commitment to teaching that is highlighted in the report of the reviewers
2. Work closely with the Faculty in the review process
3. Appreciate the important role of anatomy teaching in the medical and other Health Sciences curricula
4. Ask, as a matter of urgency, the Faculty to address the serious organisational issues raised by the reviewers before making any decision on the filling of the Chair of Human Anatomy and Embryology (1922).

(b) that the Faculty should work with the Department to :

1. Examine the organisational issues raised by the reviewers
  - Possibility of merger with another department
  - Needs of the other Schools and Departments in the Faculty in relation to the teaching of anatomy
  - Appropriate size of the resulting complement of staff
  - Appropriate focus
2. Take the opportunity presented by the current review of the medical curriculum to support the Department in developing a modern approach to curriculum content and delivery
3. Develop a plan to ensure that all staff have the appropriate opportunity to carry out research
4. Develop plans to provide the appropriate resources.

(c) that the Department should:

1. Work closely with the Faculty in the review process
2. Begin (a) to revise its curriculum and teaching methodologies in the light of the reviewers' suggestions and (b) to develop a departmental research strategy.

John Hegarty

**Provost**