



Redressing the balance: the status and valuation  
of teaching in academic careers in the biomedical  
sciences

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Cover painting:

'An apple for my teacher', 2009

Oil and French Enamel on Wood panel. Reproduction courtesy of Emma Bennett, Artist and formerly Senior Officer, Biomedical Grants and Policy, Academy of Medical Sciences

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## Summary

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### ***'And gladly would he learn and gladly teach'***

#### **Geoffrey Chaucer, *The Canterbury Tales*, General Prologue**

Good teaching inspires students and changes lives; it also drives the UK's research base, leading to a virtuous circle between education and research that generates new knowledge and brings health, societal and economic benefits. The quality of tomorrow's research is dependent on the quality of today's teaching.

The biomedical and clinical sciences represent a significant proportion of the academic sector in most UK Higher Education Institutions (HEIs). These disciplines have been at the forefront of innovation in academic organisation, curriculum development, teaching/learning patterns and new research opportunities. A rising interest in how to improve the teaching of biomedical and clinical sciences is evident at individual, departmental and institutional levels: fee-paying students are understandably concerned about who is teaching them and the quality of their education; individual academics are concerned about career progression; and departmental/institutional supervisors and appraisers are grappling with how best to assess teaching contributions.

The UK's approach to research-led teaching has attracted students from across the globe and established a deserved reputation for educational excellence. However, there is growing concern that this reputation is being eroded by a devaluation of the status of teaching in HEIs. Many believe that this problem will only be exacerbated by proposals announced in December 2009 to cut £51 million from the teaching grant allocated to universities by the Higher Education Funding Council for England (HEFCE).

The UK biomedical research landscape has improved significantly in recent years, with increased investment through the Medical Research Council (MRC) and NHS National

Institute for Health Research (NIHR), co-ordinated by the Office for the Strategic Co-ordination of Health Research (OSCHR). Yet it can be argued that the price of this research success has been collateral damage to the status and valuation of teaching in our HEIs. There is mounting evidence of disengagement between research and teaching in many university departments and institutions, and that the increased expectations and workloads on individual academics have marginalised teaching.

In this report we present the results of an investigation into the current status of teaching within biomedical science departments and medical schools in UK universities. While we have focused on biomedical research, many of the findings from this study will be applicable to other scientific disciplines. We conclude that urgent attention on the part of government, research funding councils, HEIs and individual academics is needed to restore the status of teaching to its rightful place in UK universities.

Individual UK HEIs are autonomous in managing their teaching/research balance. However, there are strong drivers at work, including:

- The Research Assessment Exercise and future assessment metrics, and the allocation of research council, charitable and higher education funding.
- The development of the 'graduate school' concept and ongoing debate about whether postgraduate education is research, teaching or both.
- The status of, and requirement for, new teaching qualifications.
- The development of teaching-only appointments as a response to increased student numbers and developments in medical education in the 1990s.

Matters have been exacerbated by a lack of vocal and effective advocacy and an absence of leadership around the importance of teaching in academic careers. During the course of the Academy's study, the strong view expressed by academics at all levels was that the status of teaching - as a component of their professional lives - has not only been undervalued and marginalised, but is in danger of being seen as a negative attribute by their departments and institutions.

Yet UK HEIs have many excellent teachers, and many of our best researchers are amongst the most able and passionate educators. Good academics appreciate that teaching informs research, and research informs teaching; the majority of academics consulted during this study believe that excellence in both areas remains an achievable gold standard. At a time when the opportunities for understanding health and disease have never been greater, the UK needs to understand, recapture and reinvigorate the link between the research and teaching strands of academic life. The issue is not to devalue research, but to redress the balance in terms of the status and value of teaching. Achieving this balance is critical not only for the quality of our students, academics and HEIs, but for the strength and sustainability of the UK's overall research and education base.

We make a number of recommendations to tackle this imbalance, starting with an overt declaration that teaching should be accorded its due status and value in assessing academic quality, and that all academics should contribute to the teaching and education agenda to some degree. To this end, we call for improved assessment and valuation of the impact of good teaching on students, on the career progression of individual academics, on the status and success of university departments, and on financial income into HEIs.

The career choices of individual academics will be influenced by the way in which teaching and research are managed and assessed within institutions. The balance of teaching and research will inevitably vary between individuals and institutions. Mechanisms of management and assessment must therefore be flexible, but should nevertheless establish an expectation that all academics are involved. In this report we offer practical guidelines for the assessment of teaching skills and leadership aimed at individuals and HEIs.

HEIs can do much to improve innovation and dissemination of good practice in the training and assessment of teaching for professional development. Learned societies and professional bodies can also play an important role in spreading good practice and recognising/rewarding good teachers and mentors. Of equal importance, individual academics need to step up to the mark in developing a consistent professional attitude to the importance of teaching for education and research within the UK biomedical and clinical science community.

Overall, government, funding agencies and universities urgently need to examine the drivers at work in influencing the balance between teaching and research in our HEIs and make changes where necessary. Only in this way can we ensure a continued integration of teaching and research and maintain the UK's position as a leader in biomedical and clinical sciences.



## Conclusions and recommendations

### **The balance between teaching and research**

Excellence can, and should, be expected in an individual academic's performance in teaching and research. At present, mechanisms of assessment focus on research success and undervalue the teaching contribution of individual academics.

**University biomedical science departments and medical schools should declare and enact a commitment whereby all academic staff are expected to contribute to teaching. Plans for the evaluation of teaching at institutional, departmental and individual levels should be developed and implemented.**

### **Management of teaching contributions**

Both research and teaching are weakened by the disengagement of research-focused academics from teaching. All staff in university biomedical science departments and medical schools should be involved in teaching to some degree, be it at undergraduate or master's level. The extent of this involvement may vary between individuals and during the career of individual academics, but the full spectrum of contributions should be accorded due status and value.

**All institutions should establish an effective management system for allocating the teaching load between academics in a transparent manner. This system should:**

- **Facilitate flexible approaches to allocating the teaching load between individual academics within the teaching/research spectrum and throughout an individual's career.**

- **Be transparent to all academics.**
- **Adhere to the four guiding principles that are examined in this report (section 3.4, Box 4), whereby:**
  - Teaching contributions should be fully integrated with research activity, administration and external contributions.**
  - Line management for teaching should be led by a senior academic.**
  - Decisions on teaching format and volume should only be made with input from the individual academic and their line manager.**
  - To improve transparency, and confidence in the process, individual teaching contributions should be available to all academics on a departmental/ institutional intranet database.**

Academics working within departments, faculties and schools of medicine and biomedical science are concerned about local management of teaching loads. A lack of transparency surrounding the processes that lead to decisions on workload allocation amplifies this concern. There are some excellent examples of good practice in this area but they have been slow to spread.

**Learned societies and professional bodies, academies, Higher Education Funding Councils and the Department for Business, Innovation and Skills (BIS) should be proactive in orchestrating the spread of good practice in the management of teaching load.**

### **Promotion**

A very sizeable and fast growing cohort of teaching-focused appointments has been

established in UK medical schools and biomedical science departments over the past 10 years. These strategic appointments have been generally welcomed. However, the teaching-focused nature of the cohort has led to the development of differential employment conditions and promotion tracks. This separation of employment conditions and career tracks can be divisive and often includes unsatisfactory limitations that inhibit the valuation and reduce the status of teaching.

**University biomedical science department and medical school managers should review the full implications of teaching-focused appointments on job satisfaction and career paths. We recommend a locally unified promotion system for teaching- and research-focused individuals within the UK's medical schools and biomedical science departments.**

### Training and qualifications

There is widespread scepticism in the clinical and biomedical science community about the relevance, usefulness and quality of training courses that lead to teaching qualifications for newly appointed academics. Staff at all levels are concerned that teaching courses are unsympathetically timetabled in the early career stage and are therefore in conflict with the critical period required for the establishment of an independent laboratory and research career.

**University biomedical science departments and medical schools should be more robust in their assessment of the effectiveness of local teaching training and qualifications for early career academics. Other approaches involving local mentoring and more subject-specific skills awareness might be more appropriate. A more realistic timeframe for any teaching qualification programme is needed to allow young academics to**

**establish their research capacity and profile. In developing improved training structures for the UK, training systems within the USA should be reviewed.**

### Research Assessment Exercise

We support arguments that the Research Assessment Exercise (RAE) has had a pernicious and negative influence on the valuation of teaching in the UK. However, we also believe that the RAE has brought benefits and is often used merely as a scapegoat for more deep-seated and wide-ranging problems, whereby teaching is not endowed with the respect and kudos that it deserves.

### Job titles

Job titles are significant, and there is an antagonism towards the many titles used to describe, and apparently distinguish, teaching-focused appointments. The invention of distinct titles that differentiate teaching-focused positions is divisive; their proliferation is likely to lead to further separation and undervaluing of teaching in HEIs.

**Institutions should adopt simple, inclusive job titles for all academic staff. This would enable research and teaching contributions to fluctuate as individual careers progress and would help to ensure the equal valuation of teaching and research.**

### Awards and prizes

Awards and prizes for teaching within the learned and professional societies are lacking, and those developed by national educational organisations and universities have yet to gain appropriate status. When compared to awards and prizes for research, there are significant differences in the peer review process and the

prestige of the award ceremonies. There are a few examples of good practice that could be adopted more widely.

**Learned societies, universities and other institutions should place greater emphasis on awards and prizes that recognise and celebrate contributions to teaching and mentoring. There should be an increase in the number of discipline-based teaching awards, and their significance should be enhanced by improvements in the value and prestige associated with the prizes and the manner of presentation.**

### **Understanding the financial contribution of teaching**

Many academics lack awareness of the financial value of teaching. This ignorance is fuelled by the fact that many HEIs do not currently acknowledge the amount of Higher Education Funding Council (HEFC) funds that are earned for teaching, and contrasts with the local publicity given to income earned through research grants and HEFC research quality routes.

**University biomedical science departments and medical schools should develop local and transparent mechanisms around attribution and valuation of both teaching and research income. Transparency should operate at all levels (department, group and individual) so that each academic can be aware of, and valued for, their combined portfolio of teaching and research.**

Investment in new research buildings is welcomed. However, VAT regulations are having an adverse effect and may further emphasise the physical and intellectual separation of teaching and research. There is a danger that new physical infrastructure, from which undergraduate teaching is excluded, will undermine the UK's claim to have research-led

teaching at the undergraduate level.

**VAT regulations require re-examination in order to facilitate the integration of research and teaching within new and refurbished university buildings. Government, HEIs and funding agencies need to recognise the need for new investment in teaching facilities, including the complex mixture of laboratory/lecture/seminar space that is required for the biomedical sciences.**

### **Organising an academic portfolio for teaching assessment and supervision**

More clearly defined metrics and indicators with which to assess the teaching portfolio and reputation of an individual academic are required. There are some examples of good practice in this area but these have been slow to spread. There is also a lack of engagement with the way in which supervision and mentoring can contribute to the teaching portfolio of an individual academic and how this contribution can be taken into consideration for the purpose of promotion and career development.

**All university biomedical science departments and medical schools should adopt a locally effective and nationally standardised set of metrics and attributes with which to assess the teaching portfolio and reputation of individual academics. Learned societies and professional bodies should proactively orchestrate the spread and standardisation of these assessment indicators and metrics. Individual academics should become conversant with the inputs and outputs, metrics and attributes that contribute to their teaching reputation and portfolio for career development and promotion.**

During our investigation, six key measures and indicators of teaching strength were identified.

These are presented within our main analysis (section 3.12, Box 10) and referred to in our 'Toolbox' (Chapter 4). We found widespread recognition of student feedback as one of the key measures and indicators and yet it appears to be little used. This is in marked contrast to the USA, where student feedback is amongst the professional attributes and metrics that is most widely used and valued within the clinical and biomedical science community.

**All university biomedical science departments and medical schools should have in place effective student feedback systems that are locally fit for purpose but nationally standardised. A commitment should be made to implement beneficial changes, stemming from the student feedback and suggestions received. Lessons should be learnt from the best schemes in the USA, Australia and some UK institutions.**

### **The responsibility of the individual**

The individual academic has a personal responsibility not only to seek improvement in their teaching reputation, but also to drive the balance between teaching and research and to develop their career and reputation accordingly.

**As the UK academic community redresses the balance between research and teaching, individual academics will need to enhance the care and attention they give to their teaching reputation and portfolio.**

## 1 Introduction

Over the past 20 years the biomedical sciences have been at the forefront of innovation in academic reorganisation, curriculum development, teaching/learning patterns and new research opportunities. The biomedical sciences represent a significant proportion of the academic sector in most UK Higher Education Institutions (HEIs). Hence, a focus on the status and valuation of teaching in academic careers within the biomedical sciences is likely to be both useful in itself and generally informative across all scientific disciplines.

At the start of this investigation we identified a series of pressures that impact on teaching valuation and status:

### The pressure from teaching

Biology and medicine are amongst the most vibrant and compelling of academic disciplines. The wonder of discoveries and new understanding in these disciplines is converted into a genuine challenge for teachers. How can teachers maintain expertise and knowledge and yet insert new findings into the curriculum?

Other pressures come from trends in student numbers and from discrete innovations and initiatives in teaching itself. For instance, the number of undergraduate students in medicine, dentistry and allied subjects rose by 74% from 110,913 in 1996 to 192,820 in 2006. The number of biological science students rose by 82% in the same period from 59,853 to 108,830.<sup>1</sup> The medical curriculum changed profoundly in accordance with this growing undergraduate population. Similar student volume changes also occurred in biomedical science departments.

Furthermore, a number of new medical schools were developed in the 1990s and small bioscience departments underwent extensive reorganisation into larger 'school' groupings. All of these developments have challenged existing

models of teaching with concomitant changes in curricula, examinations, teaching delivery methods and technologies.

### The pressure from research

There is no doubt that the various research assessment exercises (RAEs), with their associated funds, have been mesmerising for individual academics and corporate HEIs. The future Research Excellence Framework (REF) assessment metrics appear likely to continue this hypnotic obsession. It is fair to ask whether, notwithstanding its definite benefits, the RAE's long shadow has diminished the importance and valuation of teaching excellence. This is not an anti-research agenda; it is more a question of whether UK institutions have maintained a balanced approach to their teaching/research portfolio during the last 15 years.

### The pressure from organisational change

As highlighted above, the many small departments found in bioscience and medical schools 25 years ago have all but disappeared and have been replaced or complemented by 'Biomedical' or 'Life Science' groupings or faculties. In addition, the nearly 20 year old development of the graduate school concept, and the debate about whether postgraduate teaching (master's and PhD) is regulated in the teaching ('T') or research ('R') stream, has tested the classical integrated departmental view of teaching.

In many universities the introduction and development of teaching-only appointments has emerged in recent years, often as a response to pedagogic changes and increased student numbers in both medical and bioscience courses. There are perceptions that line management and supervision streams

<sup>1</sup> Higher Education Statistics Agency (2010). *Students and qualifiers data tables*. [http://www.hesa.ac.uk/index.php?option=com\\_datatables&Itemid=121&task=show\\_category&catdex=3](http://www.hesa.ac.uk/index.php?option=com_datatables&Itemid=121&task=show_category&catdex=3)

in T and R have become separated, with consequential issues for staff management and promotion criteria. New organisational structures have been complemented with new bioscience research buildings that tend to further segregate teaching and research.

### **The pressure from personal circumstance**

Research in health and disease has never been more exciting or more rewarding. Yet in a period of increased competition for grants and a growing bioscience community in the UK, newly appointed academics face much more immediate and intense pressure to establish themselves as independent researchers than earlier generations. It is pertinent to ask if specialisation in teaching or research is

necessary, or whether an academic can still achieve success and impact both domains. At the same time that these early career pressures bite, newly appointed academics are increasingly under pressure to achieve formal teaching qualifications. The need for career breaks and/or flexible working to combine work and family commitments can often compound these pressures.

## 2 Method of working

In 2008 the Academy's Academic Careers Committee (Non-Clinical) initiated an analysis of the status and valuation of teaching in academic careers in the biomedical sciences. Membership of this Committee is given in Appendix I. A primary objective of the Committee was to review the status of teaching in relation to current employment practice and career progression, examining the Teaching/Research (T/R) balance within diverse biomedical sciences departments and medical schools. The Committee sought evidence from individuals and institutions, including academic staff at different career stages and those in managerial roles in HEIs, as well as expert individuals and representative organisations.

Although this report was initiated by the Academy's Academic Careers Committee (Non-Clinical), the intention was to capture information and opinions relevant to both clinical and non-clinical careers. Consequently Professor Jonathan Cohen FMedSci (Dean, Brighton and Sussex Medical School) was co-opted from the Academic Careers Committee (Clinical) to join the study.

It was agreed that the main output of the project would be a report with recommendations aimed at all the constituencies involved including individuals, policy makers and institutions.

### 2.1 Key questions

The Committee agreed the following initial framework of questions (not in any order of importance) with which to interrogate the issues:

- What is the perception of teaching in career development by individuals and HEIs?
  - Is excellence in both teaching and research possible?
  - Are teaching-only posts a good thing?
- If so, why, and what are the impacts on biomedical curriculum development?
- What is the status and effectiveness of the new teaching qualifications and training?
  - What are the effects of the RAE and teaching assessments on the perception of the status and relevance of teaching excellence and therefore its relation to academic careers? Has the RAE overshadowed the importance of teaching excellence as a measurement of a university's prestige?
  - Has the creation of research centres within HEIs affected the student population?
  - How has the investment in new biomedical science research buildings affected contact between academics and undergraduates, and what is the status of the 'research project' in undergraduate education in these new environments?
  - Is research-led teaching a reality?
  - What are the promotion criteria relating to teaching excellence? Are they applied in a balanced way to research criteria?
  - What are the procedures, potential barriers and innovative approaches for career progression in relation to teaching?
  - How are the teaching loads of staff managed, particularly with respect to early career development, progression and tenure?
  - How transparent is the T/R workload?
  - The role of supervisors and mentors in academic promotions; can mentors aid in the development of both teaching and research portfolios?
  - The role of university academic titles; should there be a distinction between titles of research-focused and teaching-focused members of staff?
  - What are the opportunities for valuing, enhancing and rewarding teaching expertise, achievement and development in specific disciplines?

## 2.2 Focus groups

After the Committee's initial discussions, a briefing document was developed and a series of focus group meetings were held in 16 locations around the UK. Over 100 academic staff participated in these groups, which were comprised of staff representing different career stages with different research/teaching intensities. Importantly, the focus groups encompassed staff at early career points hired into both specific lectureship positions and teaching-focused positions through to more senior staff with management responsibilities. There was an appropriate gender balance, both overall, and at each of the major career points.

The focus groups included staff who taught both medical and bioscience students, often in the same institution. Meetings were held in locations including the Universities of Aberdeen, Belfast, Birmingham, Bristol, Cardiff, Dundee, East Anglia, Edinburgh, Hull, Kent, Leeds, Liverpool, Manchester, Nottingham, Oxford, Sussex/Brighton. The Committee provided guidance to the focus group chairs (see Appendix II), along with a written set of suggested topics and questions that could form the basis for initiating the discussion. The focus group chairs kindly provided an extensive written report following the meeting. This was analysed by the Committee for specific and generic issues and opinions. The focus group questionnaire is included in Appendix II.

## 2.3 Survey of Heads and Deans of biomedical science departments and medical schools in UK Higher Education Institutions (HEIs)

The initial data collection included a survey of Heads and Deans of biomedical science departments and medical schools in UK HEIs. The survey focused on how teaching is organised, valued and assessed in the universities, with specific questions on teaching-focused appointments and how

teaching expertise is handled in promotion procedures. The replies, which often came with additional pages of prose, were analysed both quantitatively and qualitatively.

Full replies were obtained from 36 out of 51 universities approached (a positive response rate of 70%): Aberdeen, Aston, Queen's University Belfast, Bradford, Birmingham, Brighton, Bristol, Cambridge, Cardiff, Dundee, Durham, East Anglia, Edinburgh, Exeter, Glasgow, Hull, Imperial College London, Kent, Keele, Leeds, London School of Hygiene & Tropical Medicine, King's College London, Barts and The London School of Medicine and Dentistry, Liverpool, Manchester, Oxford, Newcastle, Nottingham, Reading, Sheffield, Southampton, Strathclyde, St Andrews, Teesside, Warwick and York. In 11 cases we obtained information from both the medical faculty and the school of biological/life sciences in the same university, making a total of 47 individual respondents.

## 2.4 Teaching excellence questionnaire

Subsequently, we developed a questionnaire that asked the Deans and Heads of biomedical science departments and medical schools, along with the focus group leaders, to analyse and grade a list of 42 activities and indicators of teaching strength, which were grouped into five areas:

- Teaching delivery and administration.
- Course design and development.
- Evaluation and reflection on learning and teaching.
- Academic leadership, recognition and governance.
- Scholarly approach to learning and teaching.

The questionnaire provided 34 responses (a 67% response rate) that were analysed both quantitatively and qualitatively. The survey and questionnaire are included in Appendix IV.



## **2.5 Published information and meetings with individuals**

The Committee analysed a large amount of published information on teaching, in addition to information on university and funding council websites. Given the nature of the inquiry we have included limited references throughout the text where appropriate, but we have also included a list of suggested reading at the end of the report. The Chair and members of Committee discussed emerging issues

with a wide range of colleagues in their own and other institutions, including the USA and Canada. Private meetings with representatives of educational organisations and academics with research interests in assessment of teaching or other pedagogic issues also took place. These conversations were important in defining examples of good practice. A full list of individuals who contributed/were consulted as part of this study is given in Appendix III.



## 3 Main analysis and recommendations

### 3.1 The balance between teaching and research

Can an individual academic be excellent at both teaching and research? The overwhelming response to this question from our focus groups, surveys and other discussions was 'yes'. It is a widely held belief that an individual academic could, and should, maintain an integrated teaching and research portfolio. Achieving this was seen as both desirable and realistic, yet there was widespread recognition of the difficulties. It was acknowledged that the pressures on young researchers to publish early and establish themselves within their field are much higher today than they were 20 years ago (Box 1). Despite this fact, participants stressed that teaching should not fall off the agenda. Even those who voiced strong concerns about the current pressures and difficulties still maintained that individuals should strive for an

seen as a desired agenda, but ensuring their future integration and good management will not be a passive process. It was here that the Committee began to recognise a range of perverse and malign influences, both at national and local levels. Unsurprisingly, an ambition for excellence in both research and teaching was a given response at both the institutional and senior management level. This view was also advocated in a recent report published by the Department for Business Innovation and Skills, which stated that excellence in teaching should be recognised and rewarded, and that maintaining excellence in both teaching and research is key to maintaining UK universities' status and competitiveness globally.<sup>2</sup> This aspiration of the Department would appear to be undermined by the proposed government cuts to the teaching budget for 2010-2011 which, at the latest estimate, total £215 million.<sup>3,4</sup>

#### Box 1 Balancing teaching and research pressures

*'The pressures on newly appointed academics are much higher than 20-30 years ago. Research funding is more competitive, the need to publish is more urgent, there are larger classes to teach. Paperwork and regulations proliferate in all areas. There is understandable pressure to prioritise research for individual prestige as well as income generation for the institution. We cannot keep adding more and more with less and less institutional support'.*

Quote from a biomedical Head of Department

integrated teaching and research portfolio. The general consensus was that all academics in a university should be involved in teaching at undergraduate and master's level to some degree, thus posing the key question: what type of teaching and how much? The separation of teaching and research is not

The Academy is concerned about the likely detrimental impact of these projected cuts on the quality and sustainability of teaching in UK HEIs.<sup>5</sup>

2 Department for Business, Innovation and Skills (2009). *Higher ambitions: the future of universities in a knowledge economy*. <http://www.bis.gov.uk/wp-content/uploads/publications/Higher-Ambitions.pdf>

3 Department for Business, Innovation and Skills (2009). *Higher education funding 2010-11*. <http://www.hefce.ac.uk/news/hefce/2009/grant1011/letter.htm>

4 Higher Education Funding Council for England (2010). *Letter to Vice-Chancellors and Principals of HEIs: funding for universities and colleges in 2010-11*. [http://www.hefce.ac.uk/pubs/circlerts/2010/cl02\\_10/](http://www.hefce.ac.uk/pubs/circlerts/2010/cl02_10/)

5 Academy of Medical Sciences (2005). *The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences*. <http://www.acmedsci.ac.uk/p99puid2.html>

### 3.2 The benefits of teaching for research and the researcher

There is no dispute that investment in good teaching has value and importance, not only for teacher and student, but also for the future of society overall. Therefore, involvement in the teaching of biomedicine, albeit at different levels, is supported by a wide spectrum of individual academics and organisations.

The arguments for this investment are wide-ranging: the discipline of teaching is one of the best ways to learn; biomedicine is a complex and rapidly developing subject that needs all talents to enthuse students; tomorrow's researchers are trained by today's teachers; and, teaching is also beneficial for both research and the researcher. In the case of the latter, teaching new and unfamiliar areas of biomedicine takes a researcher into new areas with direct implications for their work. Moreover, many researchers who have not taught can find it difficult to recognise and move into new and emerging research areas in their mid-career.

HEIs in the UK still advertise the benefits of an undergraduate degree taught by researchers. If this is to remain the case, particularly in a period of changing career patterns in the T/R spectrum, then we believe institutions should pay greater attention to managing, enabling and valuing the various contributions to teaching. HEIs should be encouraged to involve researchers in more teaching, particularly HEIs within standalone research institutions funded by, e.g. the Medical Research Council (MRC),

the Biotechnology and Biological Sciences Research Council (BBSRC) and the Natural Environment Research Council (NERC). This is currently an underused resource that could be of great benefit to both researchers and students, ensuring that the UK's research position and the future strength of the academic discipline are intertwined with the teaching delivered to today's undergraduates.

### 3.3 The valuation and status of teaching

Given the support for teaching that was in evidence throughout our consultation, it seems incongruous to report that we also found widespread dissatisfaction with the valuation of teaching in biomedical subjects and in its status within career structures and promotion procedures. Despite high levels of cynicism, a considerable proportion of academic staff were clearly passionate about providing the best possible education for students. Some academics complained that negative attitudes towards teaching existed amongst research-focused academics and institutions and, for some, these views led to teaching being described merely as a 'necessary evil'. (For an explanation of nomenclature used in this report, see Box 2). The opinion that institutions undervalue teaching contributions was corroborated when new professorial appointments were conceived with 'no teaching' agreements. This approach by universities is seen to be at odds with their claim to practise research-led teaching. The teaching-focused academic needs a connection to research

#### Box 2 Nomenclature

During this study we noted the full spectrum that now exists in UK institutions whereby individual academic profiles vary widely in their T/R balance. Some academics have career profiles that essentially encompass only research whilst others essentially encompass only teaching of undergraduate or master's students. In this report, it has been important at times to differentiate between three main cohorts and here we refer to 'teaching-focused academics', 'teaching and research academics' and 'research-focused academics' as positive descriptors of these groups.

and the research-focused academic needs a connection to teaching. For the former, some institutions have well structured arrangements for teaching staff to be associated with large research groups and to have a discipline identity. They supervise undergraduate and master's projects, run departmental journal clubs and attend seminars and international meetings.

In our previous review 'The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences' we were disappointed to find that many research fellows did not regard an academic position, such as a university lectureship, readership or professorship (depending upon the level of fellowship) as an attractive prospect.<sup>6</sup> This view appeared to be a product of the lack of engagement between fellows and their HEIs, and was exacerbated by a lack of management in some HEIs over the control of teaching loads. In that report we detected a much more positive view of lectureship positions in departments with a coherent programme of teaching management and clear distribution of

lecturing and administration loads for both fellows and permanent staff.

In this context we support the view of many of those consulted during this recent investigation that, although it is good management for institutions to modulate teaching contribution in respect to research activity, this should not be extrapolated to a point where some academics are completely exempt from teaching. The creation of a situation where 'research stars' never communicate directly with undergraduates is unwise from very many points of view. Many of those we consulted felt strongly that the Professoriate should make a contribution to first year teaching (Box 3).

A general pattern emerges from these discussions whereby academics believe that there should be recognition for a range of individual talents and of talented individuals, and that each individual on the T/R spectrum should be valued. A key to success is the quality of local management and leadership

### Box 3 Balance and value on the Teaching/Research (T/R) spectrum

Virtually all the academics we consulted subscribed to the view that *all* individual academics in biomedical science departments and medical schools in UK universities should be involved in teaching to some extent at undergraduate and master's level.

Common views expressed in the focus groups were:

*'The next generation of researchers are trained by the teachers of today'.*

*'Research informs teaching: teaching informs research'.*

*'Teaching is good for research and the researcher'.*

There was a strong view that there was a T/R '*spectrum of individual talents, of talented individuals, and that each individual on that spectrum should be valued*'. However, views such as, '*...this university does not give excellence, leadership and dedication in teaching the recognition that it deserves*' were widespread from both research-focused and teaching-focused staff.

The view that even the most research active member of staff should be involved in teaching was in accord with the Academy's 2005 report, 'The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences', which concluded that even research fellows had a personal responsibility such that '*for their part, ...should be willing to undertake some (limited) activities to support the host HEI and to develop teaching and management skills that may be useful to them in their future careers*'.

6 Academy of Medical Sciences (2005). *The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences*. <http://www.acmedsci.ac.uk/p99puid2.html>

shown by senior staff in the biomedical sciences/life sciences school or medical school.

### Conclusion 1

Excellence can, and should, be expected in an individual academic's performance in teaching and research. At present, mechanisms of assessment focus on research success and undervalue the teaching contribution of individual academics.

### Recommendation 1

**University biomedical science departments and medical schools should declare and enact a commitment whereby that all academic staff are expected to contribute to teaching. Plans for the evaluation of teaching at institutional, departmental and individual levels should be developed and implemented.**

### 3.4 Management of teaching contributions and transparency of process

We found a widely held view that modulation of teaching type and volume should be a natural and effective part of academic management. Historically, in smaller, discipline-based departmental structures the Head of Department maintained ownership of the curriculum and it was a natural part of the professorial role to show leadership in defining the discipline. In addition there was likely a single point for management of teaching load. This is not to say that the historic approach was universally excellent; however, the rising number of the Professoriate has diminished this focus. We detected much general dissatisfaction with the management of teaching and the ownership of the curriculum. However, we did encounter a few examples of good practice in this area, often situated in the schools of life sciences formed in the 1990s.

In institutions with good systems in place it was noticeable that the different types of teaching contributions (contact hours, practical classes, seminars, problem based learning groups, lectures, one-to-one tutorials etc) had been given a value and calculations of Full Teaching Equivalent (FTEs) had been agreed. The calculation and publication of such teaching load and FTE data appear to be a very positive way of providing a valuation of the financial earning power of teaching in the T/R HEFC income formulae (section 3.10).

The most widespread positive aspect of any modulation of teaching load was that new lecturers were often given a lighter load. However, even in some institutions where teaching load was managed reasonably well there was general unease that outcomes were not transparent or that their method of determination was unclear. In very many institutions we found that staff had no confidence that there was any strategy at all. Transparency was seen as a key factor and of huge benefit at all levels of the process of assessment and management of teaching.

We recognised four principles that characterised good practice in this area (Box 4). We found a widespread expectation that these principles should be the norm in an institute's administration. Unfortunately this was often not the case and their absence, or ineffective implementation, was a major source of disquiet amongst staff in many institutions.

The widespread dissatisfaction with the management and transparency of teaching is corrosive and impacts on the confidence and willingness of academic staff to value teaching. There is good practice in this area and it is regrettable that it has not spread more effectively. There is a role here for professional bodies, Higher Education Funding Councils and government departments. The Academy is well placed to lead support for a series of post-report meetings with senior figures within biomedical areas to share good practice in

### Box 4 Four guiding principles for management of teaching

We found a general agreement with the comment from one large school of life science that 'No member of research active-staff is exempt from contributing to teaching – but this needs to be balanced sensibly'.

Although it was a generally agreed view that modulation of teaching type and volume should be a natural and effective part of academic management, many of the academics we spoke with expressed disappointment with the effectiveness of such management in their institution. A typical comment was 'Teaching loads are decided behind closed doors'. We therefore suggest four principles that should be adhered to in this area of management:

1. Teaching contributions should be fully integrated with research activity, administration and external contributions.
2. Line management for teaching should be led by a senior academic.
3. Decisions on teaching format and volume should only be made with input from the individual academic and their line manager.
4. To improve transparency, and confidence in the process, individual teaching contributions should be available to all academics on an intranet database.

management and resourcing of teaching.

Finally, we reflect that it was exactly these concerns that we detected in our previous report 'The freedom to succeed – A review of non-clinical research fellowships in the biomedical sciences'.<sup>7</sup> The concern over how teaching was managed was a negative factor for research fellows when considering staying in a UK institution as a lecturer.

### Conclusion 2

Both research and teaching are weakened by the disengagement of research-focused academics from teaching. All staff in university biomedical science departments and medical schools should be involved in teaching to some degree, be it at undergraduate or master's level. The extent of this involvement may vary between individuals and during the career of individual academics, but the full spectrum of contributions should be accorded due status and value.

### Recommendation 2

**All institutions should establish an effective management system for allocating the teaching load between academics in a transparent manner. This system should:**

- **Facilitate flexible approaches to allocating the teaching load between individual academics within the teaching/research spectrum and throughout an individual's career.**
- **Be transparent to all academics.**
- **Adhere to the four guiding principles set out in this report (section 3.4, Box 4).**

### Conclusion 3

Academics working within departments, faculties and schools of medicine and biomedical sciences are concerned about local management of teaching loads. A lack of transparency surrounding the processes behind decisions on workload allocation amplifies this concern. There are some excellent examples of good practice in this area but they have been slow to spread.

<sup>7</sup> Academy of Medical Sciences (2005). *The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences*. <http://www.acmedsci.ac.uk/p99puid2.html>

### Recommendation 3

**Learned societies and professional bodies, academies, Higher Education Funding Councils and the Department for Business, Innovation and Skills (BIS) should be proactive in orchestrating the spread of good practice in the management of teaching load.**

#### 3.5 Teaching-focused appointments

Teaching-focused academics have traditionally included those whose research portfolios have diminished for a variety of reasons at various points in their careers. A new academic cohort has appeared over the past 10 years via new appointments made with a specific teaching-focused remit. We found that these appointments were generally welcomed. Comments such as, *'...the learning experience of students is enhanced by a high standard of teaching-focused staff concentrating on all aspects of student welfare and education'* were typical of the responses received.

These full-time or part-time appointments have appeared in both small and large departments and schools. The drivers for their appearance have been diverse, ranging from provision of a greater focus on pedagogy to specific remits such as problem-based learning groups in the medical curriculum or practical classes in the life sciences. What was evident from the strength of responses on this subject was that these posts - these new types of academics and their careers - are a major focus of current debate within UK biomedical institutions.

The focus groups identified some important downsides to these appointments. These included doubts over structures for career progression being in place or, if they were in place, whether they had been fully thought through. Doubts also emerged over the perceived lack of research connectivity affecting continuing professional development and the capacity for longer-term

curriculum development. Some reflected that the valuation of teaching-focused staff is likely to grow if the cohort develops leadership in the teaching arena. By implication, such academics will need to deliver the achievements and attributes that will be expected of them in their career progression.

Within learned societies, teaching and education groups are seen as special interest groups rather than generic to the whole membership. These societies and discipline specific professional groups have a key role to play here in developing a national peer group valuation of teaching status.

##### 3.5.1 A growing cohort?

Our survey of Heads and Deans of biomedical science departments and medical schools revealed that the majority (32 out of 36) had made appointments to teaching-focused posts. Within the 36 institutions a combined total of over 500 teaching-focused posts existed.

The teaching-focused posts are distributed across all types of institution from both pre- and post-1992 universities, with many pre-1992 university biological sciences schools or medical schools reporting between 20 and 40 teaching-focused positions. This amounts to between 6% and 30% in many institutions. A large number (26 institutions) had appointed staff to newly created teaching-focused posts. We believe that our analysis provides the first insight to the substantial growth in the number of such posts within the UK community.

##### 3.5.2 The strategy for teaching-focused appointments

We found that there was extensive engagement with this topic and most respondents had a clear, well thought-through strategy behind their teaching-focused appointments. There was considerable overlap in the details of the institutional strategies that included a desire to:

- Professionalise education by providing training and experience for those who wish to develop a sub-specialty career interest.



- Appoint excellent teachers and to alleviate excellent researchers from a heavy teaching commitment.
- Deal with the extensive provision for medical undergraduate teaching of anatomy, physiology, dentistry and clinical skills in particular.
- Employ staff capable of developing scholarship in learning and teaching, with a genuine commitment to pastoral care.
- Ensure that undergraduates are taught enthusiastically and well.
- Recruit professional medical educationalists (mostly clinical, though not all posts) whose roles are in development, management, organisation, and, in some cases, research around medical education.
- Appoint staff with specific remits and responsibilities for continuing professional development and outreach.
- Cover crucial teaching needs, especially in some specialist and labour-intensive subject areas where the institutions had relatively few 'regular' academic posts and yet a large teaching need.

We note that these appointments covered both clinical and non-clinical teaching areas. Some institutions employed clinicians or scientists with an interest in the ongoing development of teaching and learning in their particular specialty. Many individuals had chosen to pursue this route in preference to individual research. In the past, most teaching-focused staff had not been appointed specifically on this basis, but had evolved into the role. While this option of switching from an R to a T focus will be retained where appropriate, the institutions described how this ad hoc approach does not facilitate forward planning and risks fuelling the negative perception that teaching is provided by 'failed researchers'.

We noted more targeted recruitment strategies being adopted where institutions had set out to recruit academic clinicians or scientists to lead teaching in specialised areas. In some cases, teaching-focused appointments were seen as a

corrective action to improve the teaching of the subject. Other institutions commented that only recruiting to research areas would never provide the complement of staff who can teach the range of subjects needed to give undergraduates a balanced and rigorous education.

### **3.5.3 Employment conditions of the teaching-focused posts**

Institutions vary in how these teaching-focused posts are structured and regulated. Some have distinct specifications, one quoted example being:

*'These posts have performance specifications relating to the domains: teaching 50%, scholarly activity 25% and supporting activities 25%. Teaching is defined to include those activities that are required to prepare for and to assess the results of teaching as well as the teaching itself. Scholarly activity may include attendance at staff development workshops, writing chapters of text books, curriculum management and quality assurance activities'.*

The titles given to these positions vary considerably. We encountered titles such as 'academic teaching and scholarship' (ATS) and 'academic teaching and research' (ATR) identifying the main function of the distinct T/R posts, and 'University Teachers/Senior University Teachers' as well as 'Principal Teaching Fellows' and 'Senior Teaching Fellows'. Even if held at lecturer, senior lecturer or professorial level these posts are often identified in different academic streams or by additional titles. In some medical schools a very definite process has been followed to integrate General Practitioners devoting less than 40% of full-time commitment to university teaching. Such positions have been designated 'Senior Clinical Fellows in Medical Education' and 'Principal Clinical Fellows in Medical Education' and holders do not progress further up the academic promotion ladder.

### **3.5.4 Promotion**

In terms of promotion, some institutions treat all academic positions similarly, whereas in

others the teaching-focused positions must conform to a 'teaching and scholarship' rather than 'research and teaching' job description. The important practical distinction is that individuals in the former domain cannot hold the title of Lecturer or Senior Lecturer, but instead carry the description 'Professional Tutor' or 'Senior Professional Tutor'. Some institutions have continued to appoint all academics to Lecturer or Senior Lecturer posts irrespective of the proportion of teaching and research that the role requires.

One institution commented that a weakness of this arrangement is that such posts having 'research and teaching' contracts appear in the Higher Education Statistics Agency (HESA) reports and other publicly-available data as part of the academic 'research-active' establishment. This did not matter in RAE 2008 since staff could be deselected. It is, however, a potential concern for subsequent metric-based assessments since, if such an option is not available, these staff will artificially inflate the denominator (scaling factor) in any future REF research performance index calculation. In this context it is apparent that many universities are likely to review their policy on teaching-only contracts and job titles.

The majority (>70%) of institutions consulted had a specific career route in place to deal with teaching-focused academic staff. Some commented further that the path was well mapped at the lower and middle career positions but not so at the senior end. Often this was because the appointments have not yet reached the professorial promotion stage. However, five institutions reported that promotion of staff to the professorial level was not possible.

There was a mix of integrated and non-integrated routes for this assessment of teaching-focused staff and their career paths. Interestingly, titles came into the frame again in this context and there was a plethora of titles such as 'Professorial Tutor' and 'Teaching

Fellow'. We believe that such titles are not useful, either to the individual or to the institution, and are likely to promote division and divisive behaviour. We consider the use of titles to be of such importance that we have dealt with them separately within this report (section 3.8).

Initially, different promotion routes might have been seen as being respectful and enabling of teaching-focused academics. However, we have concluded that it is a divisive issue, and will be pernicious in the medium to long term by undermining the academic integration of teaching and research. A challenge is to have a unified approach to career development and promotion that seeks to assess the individual's overall contribution. A tick-box attitude towards promotion that appears to be replacing an integrated, judgement-based approach in some institutions should cease before it goes too far.

The distinctive routes for promotion and career development (including ceilings on progression) are emblematic of the current value and status of teaching. Because of their importance we discuss them individually in the following sections, and within the Toolbox (Chapter 4).

#### **Conclusion 4**

A very sizeable and fast growing cohort of teaching-focused appointments has been established in UK medical schools and biomedical science departments over the past 10 years. These strategic appointments have been generally welcomed. However, the teaching-focused nature of the cohort has led to the development of differential employment conditions and promotion tracks. This separation of employment conditions and career tracks can be divisive and often includes unsatisfactory limitations that inhibit the valuation and reduce the status of teaching.

## Recommendation 4

**University biomedical science department and medical school managers should review the full implications of teaching-focused appointments on job satisfaction and career paths. We recommend a locally unified promotion system for teaching- and research-focused individuals within UK medical schools and biomedical science departments.**

### 3.6 Training and qualifications for early career academics

Teaching courses for new lecturers are not new: long-term, part-time and short-term residential courses for newly appointed academics have been run since the early 1970s. Over recent years there have been moves to expand and formalise institutional and national training and qualifications. The demand for qualifications might be seen slightly cynically as reminiscent of the response in universities to safety legislation, in that it is more about protecting the institution if something goes wrong, rather than actually implementing a measured, effective response to an important issue. Our consultation indicated that individual academics can find it difficult to argue for more rational approaches in such situations without being seen as disruptive.

#### 3.6.1 Qualifications

Many members of the focus groups we consulted had little or no knowledge of any teaching qualifications or the existence of organisations such as the Higher Education Academy (HEA). In terms of training there was a much greater awareness of local courses which, in some institutions, lead to the Postgraduate Certificate in Learning & Teaching in Higher Education (PGCLTHE). The first half of this training (approximately 14 sessions of 3 hours each over the course of the year) is often compulsory, whereas the second non-compulsory part does not appear to be taken

up or completed by many people.

It was noted that a few focus group members felt their course had been useful. Positive aspects included comments such as, *'the encouragement to think a lot more about my teaching and about new ways to improve it'*. In addition, the course was sometimes seen as useful in increasing awareness of interactive learning services in the institution and the ability to meet people from different faculties and share experiences.

We found little support for teaching qualifications and a very strong view that the recently developed courses were not particularly useful. Since only younger staff members were asked to complete the Postgraduate Certificate in Higher Education (PGCHE) the process appears to have been devalued and is seen as yet another obstacle for new academics. Time taken on the course for little practical benefit is a major issue for individuals at this early stage of their career. These qualifications were seen as having low effectiveness and little relevance by many in the focus groups in different institutions. Many focus group members proclaimed that the courses were too theoretical and offered suggestions of better ways of training new appointees. Mentoring and subject-specific practical skills tips were recommended, particularly for the first three years of appointment when they were thought to be a far better investment than the qualifications. The major issue was that the perceived need for qualifications comes in the first years of a young academic's career. This is the critical time when young scientists need to establish their laboratories. The pressures of establishing a research profile (in terms of both funding and publications) are acute and young scientists need to establish themselves quickly. Comments made by focus group members often included requests that institutions were more sensitive to these issues and that they ramp the courses in at a realistic rate (Box 5). Finally, we were concerned at finding

### Box 5 Early career training for teaching and an international comparison

Over the last 10 years generic and transferable skills training has improved as part of both graduate education and within the postdoctoral period. In addition there has been a formalisation of training courses and teaching qualifications for lecturers soon after their appointment. In many cases these training courses, which take place over the first or second year of appointment, are now deemed compulsory.

Whilst academics generally acknowledged the need for and potential usefulness of teaching training, they had serious doubts about the quality and effectiveness of local courses. Views such as the following were not uncommon:

*'Emphasis should be placed on mentoring and indeed supervision rather than quite useless qualifications'.*

*'...the workload involved in undertaking such qualifications is likely to seriously impact on the research effectiveness of new appointments'.*

*'A good example of the lack of appreciation of the time pressures placed on the newly appointed academic'.*

The opportunity to think about one's prospective teaching and to meet other faculty in the institution is clearly valuable. However the courses as they are now constituted in the institutions are not tailored for the active young scientist. Indeed, many individuals complained about the poor quality of the courses, and their focus on, *'articles on educational research – often seeming to be pure speculation!'*. There was a view that the courses provide relatively little in terms of basic practical tips and techniques and there was a general feeling that good local supervision would make more impact.

little evidence that these qualifications were transparently assessed at the individual level or audited within or between institutions.

#### 3.6.2 The USA comparison

We contrasted the training situation in the UK with that in the USA. We recognise that there has been recent investment in the UK system for training graduate students, postdoctoral fellows (e.g. Roberts' Funding) and newly appointed lecturers in teaching.<sup>8</sup> However, our view is that the UK institutional norm is still below that in North America. Nowhere is this seen more clearly than in the active role that the graduate schools of US institutions take in preparing graduate students for teaching. A comparison with the public websites of institutions such as Yale, Stanford and the University of California at Berkeley (Box 6) suggests that they are a long way ahead of UK institutions in mentoring, supervising and training of teaching at this

critical early stage of an academic career. There are some examples of strong commitment, good practice and élan in the UK, but the spread of this ethos and impact has been slow. This needs to be rectified.

Another example in the USA is the Preparing Future Faculty (PFF) programme, which was launched in 1993 as a partnership between the Council of Graduate Schools (CGS) and the Association of American Colleges and Universities (AAC&U).<sup>9</sup> This is a US national movement that aims to transform the way aspiring faculty members (doctoral students, as well as some master's and postdoctoral students) are prepared for their careers. It provides opportunities to observe and experience faculty responsibilities at a variety of academic institutions with varying missions, diverse student bodies, and different expectations for faculty. The PFF initiative was a

<sup>8</sup> For further information see <http://www.vitae.ac.uk/1685/Roberts%20recommendations.html>

<sup>9</sup> For further information see <http://www.preparing-faculty.org>

funded programme that has been continued by the USA Council of Graduate Schools to provide administrative support to existing programs and to institutions wishing to develop new PFF programs. Such national programmes may well be valuable to the UK.

We also note the career advice to life scientists produced by organisations such as the American Society for Cell Biology. Their book, 'Career advice for life scientists: volumes I and II', contains a series of personal advice and essays from scientists and clinicians on all aspects of career planning.<sup>10</sup> It mixes high level advice with practical suggestions and, interestingly, contains much on the integration of teaching and research. As such it probably reflects the more integrated system in the USA. UK learned societies could do more, and would be well suited to consider producing a similar publication for the UK.

### Conclusion 5

There is widespread scepticism in the clinical and biomedical science community about the relevance, usefulness and quality of training courses that lead to teaching qualifications for newly appointed academics. Staff at all levels are concerned that teaching courses are unsympathetically timetabled in the early career stage and are therefore in conflict with the critical period required for the establishment of a laboratory and research career.

### Recommendation 5

**University biomedical science departments and medical schools should be more robust in their assessment of the effectiveness of local teaching training and qualifications for early career academics.**

### Box 6 Training for teaching within US graduate school programmes

US graduate schools take an active role in promoting training for teaching within graduate student programmes, continuing into postdoctoral and new faculty periods. Websites such as those of Yale, Stanford and the University of California at Berkeley are typical in providing a 'one-stop shop' for issues to do with training, mentoring, pedagogy and assessment in teaching.<sup>12</sup>

In addition, the Preparing Future Faculty (PFF) programme which was launched in 1993 as a partnership between the Council of Graduate Schools and the Association of American Colleges and Universities is a US national project aiming to transform the way aspiring faculty members (doctoral students, as well as some master's and postdoctoral students) are prepared for their careers. This level of organisation, commitment and impact is rarely found in the UK.

Training academics for teaching is a sizeable issue, particularly at master's and PhD level. There are important opportunities to develop and spread good practice, both nationally, and within a wider European context through the emerging Bologna process. The UK might be well placed to lead this process across Europe.<sup>11</sup>

**Other approaches involving local mentoring and more subject-specific skills awareness might be more appropriate. A more realistic timeframe for acquiring any teaching qualification programme is needed to allow young academics to establish their research capacity and profile. In developing improved training structures for the UK, training systems within the USA should be reviewed.**

<sup>10</sup> The American Society for Cell Biology (2008). *Career advice for life scientists: volumes I and II*.

[http://www.ascb.org/files/WICB\\_Pub\\_Vol\\_I\\_II.pdf](http://www.ascb.org/files/WICB_Pub_Vol_I_II.pdf)

<sup>11</sup> Academy of Medical Sciences (2010). *The Bologna Process: will it affect UK biomedicine and clinical science?*

<http://www.acmedsci.ac.uk/p101puid179.html>

<sup>12</sup> For further information see <http://www.yale.edu/graduateschool/teaching/index.html>, <http://gsi.berkeley.edu/> and <http://ctl.stanford.edu/Faculty/>

### 3.7 Research Assessment Exercise (RAE)

During our consultation, a consistent view from most parties was that the Research Assessment Exercise (RAE) had produced a caustic, negative effect on teaching in their institution (Box 7). The immediate, obvious reward of discipline and university prestige, together with the critical linkage to increased financial resource, has meant that universities have allowed far too much emphasis to be placed on research intensity. Unfortunately, Quality Assurance Agency (QAA) assessments of teaching have been more about process than quality; they have not gained the same prestige value as the RAE and have not been linked to financial resource. Thus, there has been no counterbalancing system to value teaching quality and this has contributed to a downgrading of teaching.

The prevalent opinion was that RAE-based descriptions of an institution were more important to its status than teaching excellence evaluations, either those of students or outside agencies. The long running debate over the lack of transparency of the full staff numbers entered (or not entered) for RAE is important here. We believe that the lack of collection and disclosure of these data in 2008 has had a major negative effect on the kudos and prestige that can be ascribed to certain teaching-focused individuals within departments. The RAE is the only major assessment to include profiles describing achievement at the level of the individual.

Hence, inspirational teaching-focused academics currently have little opportunity for peer recognition and indeed are more easily identified by a negative descriptor – ‘non RAE returnable’. This commonly used label is hardly motivating for the individual and provides little incentive for institutional management to differentiate between the vast range of qualities of individuals who fall in this apparent category.

Promoting the value of teaching should not be achieved by attacking research or the

RAE itself. Rather, redressing the balance is about returning to a descriptive language and actions on the part of organisations and individuals that place as much pride and effort in teaching as have been heaped on the RAE over the past 20 years. In this way, the RAE is merely emblematic of a wider, underlying T/R polarisation within the UK.

### Conclusion 6

We support arguments that the Research Assessment Exercise (RAE) has had a pernicious and negative influence on the valuation of teaching in the UK. However, we also believe that the RAE has brought benefits and is often used merely as a scapegoat for more deep-seated and wide-ranging problems, whereby teaching is not endowed with the respect and kudos that it deserves.

### 3.8 Job titles

We found that there was widespread dissatisfaction at the way institutions were developing differential titles for academic staff in the UK. Often a sense of frustration led to comments that we should simply adopt a simple three tier professorial system as in the USA. Regardless of their type of institution, we detected that staff felt that changes in the UK were becoming unnecessarily divisive. We found that many respondents felt that terms such as ‘Lecturer’ were appropriate for all types of academic appointments. Some felt they were understood in the academic community but probably not outside. Interestingly, we also heard a view that, ‘*a Professor who doesn’t teach shouldn’t be called a Professor*’. A number of focus groups felt that academic titles were now ‘*locally a mess, confounded by a lack of consistency throughout the UK*’.

The view that titles should not be divisive was strongly supported. We detected strong opinions that recent changes were not only

### Box 7 The negative effect of RAE on teaching

The majority of people we spoke to at all levels in institutions agreed that the RAE was a major factor in both facilitating and bolstering a negative view of teaching. This was not an anti-research agenda, rather it focused on the comparison of the clarity of esteem and direct financial incentives accorded to the RAE outputs versus those of QAA teaching quality assessments.

The improvements that RAE had brought over its lifetime were acknowledged by those we consulted.

*'By making universities more competitive and accountable, the RAE made us more professional across the board which in turn enhanced teaching. Also, by becoming a better research university the quality of students entering had improved making teaching more enjoyable.'*

In comparison, the assessment of teaching was seen to be inadequate, exemplified by comments such as:

*'QAA subject review marks were a useless measure of teaching excellence even though most departments in this medical school gained 23 or 24 out of 24.'*

The general opinion was epitomised by comments such as, *'RAE overshadows the teaching and learning arena'* and that government, funding councils, learned societies, professional associations, universities and many academics had not maintained an adequate balance of esteem.

confusing, but also an example of the lack of status for teaching within institutions. What is more, these attempts to differentiate teaching-focused positions (either full or part-time) by distinct titles could be interpreted as gender divisive. We found a distinct dislike of terms such as 'Professional Tutor' when used to differentiate a teaching-focused position and this particular title was described as 'derogatory' by many. Our view is that instead of valuing teaching they are leading to particular appointments being viewed as separate career 'cul-de-sacs' and not as part of the general continuum of academic positions. The general view we found was of a need to avoid a two tier system, and yet job titles appeared to be pernicious drivers towards just such a division.

We also formed a view that the separating out of teaching-focused appointments in some institutions may reflect a lack of confidence in defining criteria for the valuation of teaching in promotion exercises. We do not consider

this as an appropriate rationale for different titles and we would encourage more confidence in gathering proper criteria and metrics for teaching assessment. To this end, we spent much time considering the valuation and status in the promotion exercise and career development of all staff. This is explored in later sections of this report and in the Toolbox (Chapter 4).

### Conclusion 7

Job titles are significant, and there is an antagonism towards the many titles used to describe, and apparently distinguish, teaching-focused appointments. The invention of distinct titles that differentiate teaching-focused positions is divisive; their proliferation is likely to lead to further separation and undervaluing of teaching in HEIs.

## Recommendation 7

**Institutions should adopt simple, inclusive titles for all academic staff. This would enable research and teaching contributions to fluctuate as individual careers progress and would help to ensure the equal valuation of teaching and research.**

### 3.9 Awards and prizes: status and valuation

Academics from all the cohorts we consulted noted the existence and valuation of many prestigious awards for research activity at all stages of an academic's career. This was contrasted with the paucity of such awards (or their valuation if they exist) for recognition in teaching. We regard prizes to be particularly important since they present an opportunity for raising the profile of teaching.

It is true that institutional teaching awards have become a significant element in attempts to recognise outstanding contributions to teaching by academic staff within UK universities. We encountered awards made on the recommendations of Heads of Departments and Deans, colleagues or students, through to more complicated nomination and selection processes. In many cases the teacher concerned is required to develop a reflective portfolio and evidence of teaching excellence.

In addition to the university awards there are national teaching awards presented by the Higher Education Academy. The National Teaching Fellowship Scheme (NTFS) is a high profile programme which aims to '*Celebrate excellence in teaching by recognising individuals who are outstanding as teachers and promoters of learning*'. Universities must nominate and support individuals for this scheme and again the individual educator has to produce a reflective account of their teaching philosophy that is based on the following headings:<sup>13</sup>

- Individual excellence: evidence of promoting and enhancing the student learning experience.
- Raising the profile of excellence: evidence of supporting colleagues and influencing support for student learning in (and if appropriate beyond) your institution, through demonstrating impact and engagement beyond your immediate academic or professional role.
- Developing excellence: the nominee's commitment to her/his ongoing professional development with regard to teaching and learning and/or learning support.

The existence of an award is not enough. The prestige associated with the award and the support of the wider peer group is what matters. Here, the UK has a long way to go to ensure that awards and prizes for teaching have impact, and we believe that much of this will come from the manner in which the award is made. Members of focus groups in some institutions suggested that applications for such awards were not universally high and that ceremonies were not well attended by their peers or senior university staff. We also heard of some staff being discouraged from advertising their award on the basis that they may be identified or 'marked' as not interested in research.

A major change of attitude is required in the academic community. Some excellent examples of good practice were noted, for instance where teaching awards were made at graduation ceremonies in front of large audiences. In seeking parity between teaching and research we felt that universities should be encouraged to publicise the achievements of staff that had been awarded prizes for teaching distinction, just as staff are recognised for research achievement.

Whatever the nature of the awards or prizes, peer valuation needs to be established if they are to assist in redressing the balance between teaching and research. In this context we asked what the learned and professional societies are doing in this area. A few learned societies and



other institutions have awards or prizes that are given to individuals that have made significant contributions in education, usually with reference to a particular discipline. We surveyed the websites of 44 of the UK's biomedical learned societies/professional organisations and found only six awarding prizes for teaching distinction in comparison with 26 for research (Box 8).

### Conclusion 8

Awards and prizes for teaching within the learned and professional societies are lacking, and those developed by national educational organisations and universities have yet to gain appropriate kudos. When compared to awards and prizes for research, there are significant differences in the peer review process and the prestige of the award ceremonies. There are a few examples of good practice that could be adopted more widely.

### Recommendation 8

**Learned societies, universities and other institutions should place greater emphasis on awards and prizes that recognise and celebrate contributions to teaching and mentoring. There should be an increase in**

**the number of discipline-based teaching awards, and their significance should be enhanced by improvements in value and prestige associated with the prizes and the manner of presentation.**

### 3.10 Understanding the financial contribution of teaching

The higher education funding agencies distribute resource to UK institutions via three main streams – teaching, research and special funds. As an example, the total Higher Education Funding Council for England (HEFCE) grant available for the academic year 2008-09 was £7,476 million. A breakdown of the available grant across the sector as a whole is provided in Box 9, which illustrates how the funding stream for teaching dominates. The financial outcome of RAE and quality-related research funding (QR) is evidently an important driver for behaviour at all levels in institutions. Unfortunately it is often the driver of bad behaviour.<sup>14</sup>

What is this ratio in the most research-intensive institutions? If one looks at the HEFCE grants for the academic year 2008-09 for the five full-scale institutions that topped the recent Times Higher Education Supplement 'RAE league

#### Box 8 Lack of learned society awards that recognise and reward teaching

We asked how many of the biomedical science learned and professional societies gave awards or prizes for teaching in contrast to research.

We surveyed the websites of 44 of the UK's biomedical learned societies/professional organisations and found only six awarding prizes for teaching distinction in comparison with 26 for research (where there were often multiple types of award within each society/professional organisation). The awards and prizes for teaching that were found in this survey were:

- Anatomical Society of Great Britain and Ireland: The Symington Memorial Prize in Anatomy.
- Society for General Microbiology: Peter Wildy Prize for Microbiology Education.
- British Psychological Society Award for Excellence in the Teaching of Psychology.
- Physiological Society: The Otto Hutter Physiology Teaching Prize.
- The Royal College of General Practitioners: Paul Freeling Award.
- British Pharmacological Society Teaching Prize: The Rang Prize.

<sup>14</sup> Higher Education Funding Council for England (2008). *Allocation of funds: recurrent grants for 2008-09*. [http://www.hefce.ac.uk/pubs/hefce/2008/08\\_12/](http://www.hefce.ac.uk/pubs/hefce/2008/08_12/)

### Box 9 The financial return from teaching

In contrast to the implications of the RAE, we found little understanding amongst academics of the financial aspects underlying teaching in UK institutions. A typical comment from a senior figure was, 'Funding Council income for T/R is around 50:50 here and is not that well understood. There is over-effort in research in comparison to income generated with respect to teaching'.

In terms of the Higher Education Funding Council for England (HEFCE) for example, the total grant available for the academic year 2008-09 was £7,476 million. A breakdown of the available grant is provided below:

Teaching	£4,632 million
Research	£1,460 million
Other Special Funds	£1,384 million

In terms of biomedical science or medical schools, even the most research-focused still earn close to 40% of their core income from teaching. Thus most of the biomedical groupings in the UK are as dependent for their survival upon teaching funds as they are on their research funds.<sup>15</sup>

table' (i.e. Cambridge, Oxford, Imperial, UCL and Manchester), even these institutions earn an average of 41% of their HEFCE funded T/R income from teaching. Moreover, even if one selects the medical school of one of these institutions then still close to 40% of the HEFCE funded T/R income is derived from teaching.

In the final stages of this report's preparation, Lord Mandelson, the Secretary of State for Business, Innovation and Skills, announced further substantial cuts to the 2010-2011 higher education funding budget. These cuts included a projected £51 million cut to the teaching grant.<sup>16</sup> It has not been possible to consider the full implications of these proposed cuts as part of this report, but we believe they can only be detrimental to teaching as a whole and may cause local funding problems, especially within less research-intensive institutions that rely more heavily on the teaching grant as a source of income. We have observed how individual academics often misunderstand the contribution from the teaching stream, and how it does not gain the exposure or importance it deserves. There is a certain inevitability in the way that

individuals and institutions respond to a system where financial rewards come from research performance assessed by researcher's quality, and where teaching performance is assessed by student numbers. When this is added to the additional resources that research brings from the research councils, charities, industry and commercial funding, then the decades-old focus on research by institutions is understandable.

### Conclusion 9

Many academics lack awareness of the financial value of teaching. This ignorance is fuelled by the fact that many HEIs do not currently acknowledge the amount of Higher Education Funding Council (HEFC) funds that are earned for teaching, and contrasts with the local publicity given to income earned through research grants and HEFC research quality routes.

### Recommendation 9

**University biomedical science departments and medical schools should develop local**

<sup>15</sup> Higher Education Funding Council for England (2008). *Allocation of funds: recurrent grants for 2008-09*. [http://www.hefce.ac.uk/pubs/hefce/2008/08\\_12/](http://www.hefce.ac.uk/pubs/hefce/2008/08_12/)

<sup>16</sup> Department for Business, Innovation and Skills (2009). *Higher education funding 2010-11*. <http://www.hefce.ac.uk/news/hefce/2009/grant1011/letter.htm>

**and transparent mechanisms around attribution and valuation of both teaching and research income. Transparency should operate at all levels (department, group and individual) so that each academic can be aware of, and valued for, their combined portfolio of teaching and research.**

### **3.11 Physical infrastructure: quality buildings, Value Added Tax (VAT) and the division of teaching and research.**

*'The quality of teaching facilities needs to match the quality of research buildings.'*

An acknowledged decline in the state of university science buildings and research infrastructure led in the late 1990s to the introduction of the Joint Infrastructure Fund (JIF) co-funded by the Wellcome Trust, HEFCE and the former Department of Trade and Industry. This was followed by the introduction of the Science Research Investment Fund (SRIF). These initiatives and targeted funds have assisted in improving research buildings in the UK. Many of the building projects carried out under these JIF/SRIF arrangements have been of international quality and have transformed the research environment for biomedical research in those institutions. In addition, a number of new medical school buildings have emerged.

However, there is a downside to this infrastructure and the way it has been developed. In very many of these situations there has been a move away from a departmental environment in which teaching and research are integrated to a research-focused environment. Some of these buildings are, in effect, undergraduate-free zones. In response to our survey, many academics offered us their view that these buildings, whilst welcomed for what they are, have fragmented contact between students and staff. The design of many of these buildings provides little accommodation for teaching laboratories and

lecture theatre facilities other than for research seminars. In part, this is because the designs have been driven by a wish to improve research environments within financial constraints.

This fragmentation has been compounded by animal rights activist activities, health and safety rulings and their interpretations leading to keypad/swipecard protected zones in both old and new buildings. Security concerns can segregate people, and security zoning means staff/student contact is declining. It would be disingenuous not to observe that some academics see this separation of teaching and research as a positive feature. However, in its worst form we believe it feeds the perception of teaching being a second-class activity and in reality, it is likely to have a long term detrimental influence on the UK's ability to claim to have a 'research-led teaching culture'.

Academic staff indicated that undergraduates resented their lack of access to staff and facilities. Therefore, one very positive feature of these new buildings is that many institutions have found that the status of the final year project has been increased. Since practical class teaching is declining throughout the life sciences this is a real advantage. We believe it is important that high quality facilities for interaction are created.

There is also a negative impact from the current application of VAT rules to academic buildings for education and research. Current VAT rules discourage the combination of teaching and 'non-business' research within the same building (this only applies to brand-new buildings). In essence, this is because new buildings constructed solely for a 'relevant charitable purpose' can be zero-rated (i.e. no VAT charged by the construction suppliers) resulting in a large VAT saving. A 'relevant charitable purpose' equals the use by a charity for non-business purposes. As universities receive fees in return for supplying education, teaching is treated as a business activity by HM Revenue & Customs. However, it is an 'exempt'

business activity (unable to recover VAT on associated costs), rather than a 'taxable' business activity. Consequently, any areas within newly constructed buildings which are used for teaching will attract a full VAT charge.

In addition, if there is mixed use of a new building between non-business research and teaching, the VAT charge on any mixed use areas or other shared costs, such as construction of the shell and core, professional fees etc., has to be apportioned. This makes the construction of mixed-use buildings unattractive and often financially unfeasible. Usually a ten year monitoring period is in place during which any change in activity has to be reviewed to see if it will attract a full or partial VAT charge, i.e. introducing teaching activity into a zero-rated building in year 5 after the building opens will result in a VAT charge. This also makes the VAT treatment difficult and burdensome to administer.

There are also issues here in terms of refurbishment of existing buildings. In these cases, the use of buildings for non-business research and teaching results in the same disadvantageous VAT position; VAT is charged at the standard rate by suppliers and none of it is recoverable by the university. If the only use of a refurbished area is commercial, business research then the university is able to reclaim the VAT charged. If there is mixed use that includes commercial, business research then a small proportion (currently 12%) of the VAT charged may be reclaimed.

The Wellcome Trust has highlighted concerns over VAT associated with research buildings. As a significant investor in new buildings, such as Clinical Research Facilities and the UK Centre for Medical Research and Innovation (UKCMRI), the Trust has discussed VAT issues with Universities UK (UUK), UK Government departments and with HM Revenue and Customs (HMRC) for more than five years. The Trust has raised concerns that restrictions caused by VAT regulations will restrict technology transfer activities,

external collaborations, and industry funding for innovation. These points were also reinforced in the Cooksey Review.<sup>17</sup>

The Wellcome Trust has recommended that the UK Government '*work with HMRC to resolve these tax issues as a matter of priority*' and proposed some viable solutions that take into account current EU legislation. Their proposal for a VAT refund scheme for research facilities, which could operate outside the VAT system as part of public funding, for example, is strongly supported by the Academy.

### Conclusion 10

Investment in new research buildings is welcomed. However, VAT regulations are having an adverse effect and may further emphasise the physical and intellectual separation of teaching and research. There is a danger that new physical infrastructure, from which undergraduate teaching is excluded, will undermine the UK's claim to have research-led teaching at undergraduate level.

### Recommendation 10

**VAT regulations require re-examination in order to facilitate the integration of research and teaching within new and refurbished university buildings. Government, HEIs and funding agencies need to recognise the need for new investment in teaching facilities, including the complex mixture of laboratory/lecture/seminar space that is required for the biomedical sciences.**

### 3.12 Assessing the teaching contribution for mentoring, appraisal, status and promotion

We were interested to understand how senior academics viewed the metrics and criteria that might be used to assess an academic's

contribution to teaching. Whilst the metrics used to assess research inputs (e.g. grants, studentships) and outputs (e.g. discoveries, papers, invitations to lecture, prizes.) are commonly agreed, there appears to be little consensus on the teaching equivalents. After initial surveys we compiled a set of 42 areas that might be used to assess teaching, and then asked for rankings and views from Deans of Medicine and Heads of Departments and Schools of Life Science.

### **3.12.1 Survey of Heads and Deans of biomedical science departments and medical schools**

In response to the Academy's questionnaire, which was sent to Heads and Deans of biomedical science departments and medical schools and focus group leaders, we observed a spread of opinion and some very specific areas of consensus. In particular, five areas of activity scored highly and these were seen to be essential for determining teaching excellence.

They were:

- Student feedback.
- Results of formal course/module evaluation.
- Results of, and reflection on, peer observation and review.
- Course co-ordination and management.
- Creation of syllabi, curricula, training courses.

It is interesting that these five areas encompass assessments and formal evaluation by both academic peers and students, along with measurable outputs from personal initiatives in

teaching administration and delivery.

When the 34 respondents to the subsequent teaching excellence questionnaire (section 2.4) were asked to choose the four most important indicators of teaching excellence from the full list, the mean was found to focus around these five areas with the addition of one more to this top grouping, 'development of innovative teaching and assessment tools' (Box 10).

In response to the design of the Academy's questionnaire itself, it was noted that the indicators in our list did not place enough emphasis on the way in which personal research (either the basic science discipline or educational research) informs the quality of an individual's teaching ability. We agree that this important theme should have a place in supervision and appraisal and could represent a key item for emphasis in the personal CV of an individual academic.

It was interesting to note that the highest scoring amongst these six areas was student feedback. The leadership of the major biomedical centres in the UK appear willing to focus considerable weight on student feedback and assessment. However, these metrics are not used extensively or effectively in UK institutions. The hesitation in using this metric in the formal supervision, assessment or promotion of staff appears to be influenced by a lack of confidence in the assessment mechanisms.

It is our observation that this lack of confidence may come from the fact that people find the assessment of these areas difficult because

#### **Box 10 The top six measures and indicators for determining teaching quality and excellence**

1. Student feedback.
2. Results of formal course/module evaluation.
3. Results of, and reflection on, peer observation and review.
4. Course co-ordination and management.
5. Creation of syllabi, curricula, training courses.
6. Development of innovative teaching and assessment tools.

of a lack of hard evidence. Here, we have a specific recommendation. If the expectation of all teaching contributions, such as those activities in the top six (Box 10), involved a physical output such as a new course handbook, feedback summary, evidence of innovation in teaching management, pedagogic research papers, symposium presentations and websites that are akin to those expected in a research portfolio, then this would greatly increase confidence. However, the importance of physical evidence in a teaching portfolio will need to be developed, and staff will need appropriate mentoring and support. Many staff will need to step up to a new level in the display and assessment of their contribution if the value and status of teaching is to be increased.

### **3.12.2 An international comparison**

The emphasis placed on student feedback contrasts strikingly with major North American universities. Even the brief survey that we conducted of Canadian and USA biomedical centres in diverse universities produced numerous examples of good practice in training, assessment and reflection of teaching. An overall impression was of a high and uniformly better standard of education, training and assessment of teaching than currently experienced in the UK.

All US and Canadian institutions we contacted used student feedback as a formal part of promotions exercises in assessing an academic's teaching. Individuals working in institutions viewed this as standard practice. An example of a standard response to our enquiry about student evaluation in promotions came from the University of California, Berkeley, *'Faculty promotion includes three criteria: research, service (to university and to discipline), and teaching and mentoring. For every course we teach, including graduate seminars and laboratories, evaluation questionnaires are given and the results summarised in the promotion letters and included in the promotions file'*. The response and evaluation sheets given to

students in US institutions (usually electronic) are markedly more sophisticated than in the UK. These questionnaires appear more direct in their question design than most in the UK, interrogating responsiveness and preparedness of the teacher alongside evaluation of course content and suggestions for improvement.

The hesitation or lack of implementation of this metric in formal mentoring, assessment or promotion of teaching staff appears to be due to UK academics being unsure about the quality of the assessment mechanisms presently in place. We contrast this to our observations of US and Canadian universities where student feedback and assessment seems to be a very natural part of promotion statements with a reasonable, if not high, level of transparency to all parties. We suggest that this is an important area that needs development so that UK biomedical academics and students are confident about their responsibilities and the importance of student feedback. There are many established approaches in this area and it is disappointing to see such a valuable metric used so infrequently.

### **3.12.3 Categories used for organising an academic portfolio for teaching assessment and supervision**

In our teaching excellence questionnaire we developed five themes under which to organise specific questions:

1. Teaching delivery and administration.
2. Course design and development.
3. Evaluation and reflection on learning and teaching.
4. Academic leadership, recognition and governance.
5. Scholarly approach to learning and teaching.

We also looked at other examples of such themes that can act to organise an academic portfolio for teaching assessment and supervision, in particular in the context of promotion exercises. We received some suggestions, including the alignment of headings with those used by the National Student Survey, but these are very broad and

apparently designed for providing general impressions of students' experiences of their degree courses.<sup>18</sup> Others have suggested the use of four headings:

1. Scholarship for teaching.
2. Teaching excellence.
3. Academic leadership.
4. Education research/scholarship.

There are numerous alternatives to the categories that we developed. Although it is important to present examples, we do not wish to be prescriptive in any way. Rather, we merely wish to point out that these criteria sets are now well established in the literature and exemplars are being used in many universities. Some are better than others. It is important that the individual academic is aware of these and understands their importance when planning and presenting their career achievements in teaching.

### Conclusion 11

More clearly defined metrics and indicators with which to assess the teaching portfolio and reputation of an individual academic are required. There are some examples of good practice in this area but these have been slow to spread. There is also a lack of engagement with the way in which supervision and mentoring can contribute to the teaching portfolio of an individual academic and how this contribution can be taken into consideration for the purpose of promotion and career development.

### Recommendation 11

**All university biomedical science departments and medical schools should adopt a locally effective and nationally standardised set of metrics and attributes with which to assess the teaching portfolio and reputation of individual academics. Learned societies and professional bodies should proactively orchestrate the spread**

**and standardisation of these assessment indicators and metrics. Individual academics should become conversant with the inputs and outputs, metrics and attributes that contribute to their teaching reputation and portfolio for career development and promotion.**

### Conclusion 12

During our investigation, six key measures and indicators of teaching strength were identified. These are presented within our main analysis (section 3.12, Box 10) and in our 'Toolbox' (Chapter 4). We found widespread recognition of student feedback as one of the key measures and indicators and yet it appears to be little used. This is in marked contrast to the USA, where student feedback is amongst the professional attributes and metrics that is most widely used and valued within the clinical and biomedical science community.

### Recommendation 12

**All university biomedical science departments and medical schools should have in place effective student feedback systems that are locally fit for purpose but nationally standardised. A commitment should be made to implement beneficial changes, stemming from the student feedback and suggestions received. Lessons should be learnt from the best schemes in the USA, Australia and some UK institutions.**

### 3.13 The responsibility of the individual

Within this report we have often focused on the influence of national and institutional policies, the general academic system, institutions and professional bodies. We have also commented on the influence and responsibility of those in

<sup>18</sup> For further information see <http://www.hefce.ac.uk/learning/nss/data/2008>

academic management positions in the context of valuation and status of teaching. However, it is critical that all academics refresh their views on teaching in their institution and the UK higher education system. There are personal responsibilities here at all levels.

Individuals who see themselves at the research-focused end of the spectrum need to redress the balance and, for some, this may involve increasing their personal involvement in curriculum debates in addition to commenting more overtly on the benefits of integration of research and teaching. For individuals at the teaching-focused end of the spectrum it is important not to support teaching by attacking research.

In this context there does seem to be a renewed interest in developing and celebrating the teaching portfolio of academics. Whatever route this takes in particular institutions, it is important that academics engage with the process and endeavour to understand the new descriptors and criteria that are likely to be applied. This is especially important in terms of mentoring and supervising younger academics. If the balance is to be redressed and teaching portfolios to gain renewed status and value,

then the individual academic will be expected to step up to the mark. In the specific issue of promotions this will mean a determined effort to produce the physical evidence for different types of teaching inputs and outputs that bear comparison with a research portfolio.

### **Conclusion 13**

The individual academic has a personal responsibility, not only to seek improvement in his/her teaching reputation, but also to drive the balance between teaching and research and to develop their career and reputation accordingly.

### **Recommendation 13**

**As the UK academic community redresses the balance between research and teaching, individual academics will need to enhance the care and attention they give to their teaching reputation and portfolio.**







## 4 The toolbox: guidelines for assessing personal reputation and leadership in teaching

The Academy's intention has been to produce a report that would serve as a basis for action and debate around the status and value of teaching in academic careers, and to provide a practical resource for academic staff, managers and leaders of HEIs, and professional regulatory bodies.

We have concluded that teaching is currently undervalued and urgent action is needed to rectify this situation. We have considered how the separation of research-focused academics from teaching weakens teaching and harms the overall research endeavour, and concluded that the value of teaching needs to be strengthened and the balance between teaching and research must be redressed.

A major step towards achieving this balance would be to improve the manner by which teaching contributions are assessed. This was analysed in chapter 3 and in this final chapter we offer a set of practical guidelines, essentially a toolbox, which provides:

- Narrative guidelines for recognising achievement and leadership in teaching.
- A three-level framework for use in academic promotion and recognition (this guiding framework is presented as indicative lists of criteria at three levels, along with case studies and illustrative examples).
- A set of actions that should assist both individuals and institutions in their development and implementation of promotion and recognition exercises.

We offer these guidelines for practical 'standalone' use in institutional debates over how teaching portfolios can be developed, assessed and used in their promotion exercises.

### 4.1 Narrative guidelines: issues influencing the development of a framework for the promotion and

#### recognition of academics.

##### 4.1.1 Recognising achievement and leadership in teaching

*The role of universities, medical schools and biomedical science departments*

Universities, medical schools and individual biomedical science departments play fundamental roles in developing the perception of teaching in the overall strategy of their host institution. Activities such as the National Students Survey have influenced the way institutions view their reputations and many have developed new initiatives to ensure they can provide an enhanced learning experience for students.<sup>19</sup> While a change of emphasis is good for the status of teaching, it is essential that institutions put in place robust strategies to ensure good teaching is both encouraged and appropriately rewarded.

Opportunities for the development of good teaching should be provided in addition to sufficient resources and facilities. Universities, medical schools and biomedical science departments should provide more workshops on discipline-specific teaching, and support for teaching innovations such as e-learning should be encouraged. Time, to develop teaching materials, or to reflect on teaching, should be recognised as integral to the individual academic's job so that continued evolution and creativity are fostered.

An enhanced approach to the induction of new academic staff is needed in many institutions. The need for role models and mentors for new teachers was highlighted by our focus groups. Opportunities for shadowing good teachers and examples of good teaching practice and personal achievements should be made available.

Changing the perception of teaching for future academics should come as early as possible. Graduate students should be actively

<sup>19</sup> For further information see <http://www.hefce.ac.uk/learning/nss/>

encouraged to participate as teaching fellows/ assistants and should receive appropriate training and guidance to develop a positive teaching philosophy. Further substantial opportunities should be available during postdoctoral years to encourage thoughtful reflection on teaching practice, encouraging a natural progression for those aspiring to academic status. Finally, the promotion process should value individuals that have successfully developed their teaching capability and portfolio.

#### *Responsibility of the individual*

Many reports and studies have focused on the role of institutions, departments and national organisations in changing the perception and esteem of teaching. There has been very little attention given to the role and obligation of the individual. Our consultation indicates that individuals often feel that institutions and departments do not recognise good teaching and that promotion is geared more towards rewarding research. There is a perception that the development of teaching is a drain on valuable time and that demonstrating adequate teaching abilities will suffice.

Our findings from this review suggest that universities have promoted fewer individuals in relation to teaching than for research achievements. It could be argued, however, that those individuals denied promotion based on teaching have often not reached the standards required for the promotion to be awarded. This may be due, in part, to the inadequacy of the indicators used to assess teaching strength, but can also stem from a lack of creativity, reflection and leadership on the part of the individual academic. An individual who simply 'does the job adequately' has no automatic right to promotion, in the same way as promotion via research is not forthcoming if there is no international reputation evidenced by discoveries, grants, papers and invitations from peer organisations.

Despite the essential role of the institution, department, supervisor and mentor, career development remains the overriding responsibility of the individual academic.

The balance of teaching, research, and administration will to some extent be determined by the departmental strategy, but the approach taken toward each element should be founded on the initiative of the individual.

Maintaining responsibilities is not sufficient; promotion for teaching should be based on improvement, innovation, changed activity and success. In addition, all academics should begin to develop motivational tactics for inspiring students, through fostering curiosity and developing student engagement. A sustained record of achievement in teaching will, over time, help to ensure that the promotion process can pay equal attention to teaching and research activity, and reward the best.

#### *The role of the supervisor and mentor*

The results of the Academy's focus groups and questionnaires suggest that many academics see the role of a mentor or mentors as key in helping individuals to realise their aspirations and to focus on their career development. The role of the mentor varies hugely between institutions and the approach taken by individuals is also different. It is important that an institution distinguishes between the role of a mentor and that of a supervisor.

The supervisor or head of department may set out the expectations for probation, promotion and recognition and may offer advice on how these might be achieved in relation to the departmental strategy. In contrast, the mentor should facilitate - through discussion and practical know-how - the development of initiative, independence, self-confidence, and career progression.

Mentoring should be more tailored towards the individual and focused on support and guidance. The mentor assists in helping the individual to identify a balanced portfolio in terms of teaching, research and administration, as well as determining what is required for promotion and how to structure promotion applications. Although expectations should be set by a supervisor or head of department, a

mentor can help to shape those expectations with the individual academic.

#### **4.1.2 Developing criteria for assessing teaching strength and the need for transparency**

##### *Institutional transparency*

High levels of transparency are recommended so that each individual is fully aware of the teaching, research and administrative contributions being made by other individuals within their institution. The establishment of a transparent contribution model provides individuals, their supervisors and mentors with a valuable source of guidance when developing detailed work plans. Institutional transparency ensures that departmental and individual work plans are fair, appropriate and balanced.

##### *Transparency of promotion criteria*

Our surveys indicated a lack of clarity associated with the promotion criteria used for assessing teaching strengths and accomplishments. The desire for more transparent guidelines was clear, 'The promotion criteria for teaching excellence are particularly vague'. Even when teaching indicators were being used for promotion, candidates were often unclear about the range, level, quality and quantity of indicators that were required. It is to the benefit of the candidate that panels retain and exercise flexibility when assessing an individual application for promotion. Enhanced guidance will ensure successful promotion exercises for candidates and their assessors at junior through to senior levels.

The Academy reviewed many current promotion documents in the course of this study and found that they were often overtly prescriptive, long or intimidating. Guidance documents should clearly indicate the easiest way for individuals to provide quantifiable data and relevant feedback. In addition, procedures for promotion should be easy to locate for all staff, along with examples of good practice and anonymised case studies.

The aim of this toolbox is to provide sufficient detail and exemplars to form a 'points to consider' guide, rather than offer a 'tick the box' solution. We also recommend that promotion criteria should not be written in such a way as to enhance division between teaching, administration and research contributions.

##### *Recognising diversity*

Individual academics have different talents that are reflected in the varied levels of intensity of their teaching, research and management/ leadership contributions. These may change over time. We consider it important that all aspects of an individual's portfolio be incorporated into a final list of quality indicators. The weighting used when referring to these criteria must therefore depend on the level of intensity in each of the categories and on the context of the individual department or school. The all-round academic may well have successes in each category, whilst another may have substantial achievements in a particular area. Changes over time in the career of an individual can be recognised and assessed before decisions on promotion and recognition are reached.

Caution must be applied when developing criteria to measure the teaching strength of an individual and the process should not result in a comparison of different members of faculty. The institutional transparency that is encouraged in this report does not mean that evaluations should be focused on comparing the scores of an individual's teaching with an average of scores across all faculty members. Evaluation of teaching strength must also judge innovations, achievements and effectiveness in teaching and not merely the volume of activity. A high teaching load, however, should not be seen as a negative factor for those who wish to develop their teaching capability and experience.

We compiled an inventory of the criteria already used in HEIs nationally and internationally and developed a list of teaching related activities that could potentially be used to indicate teaching strength and accomplishment in the

biomedical sciences. This list of indicators was included within the teaching excellence questionnaire that was circulated to Heads of Departments, Deans of Schools and focus group leaders within UK institutions.

In reviewing the collated results of this questionnaire it was agreed that expectations vary depending on the academic level of the individual in question. Quite properly there would be different expectations of an individual seeking promotion from lecturer to senior lecturer, than from senior lecturer to professorial level. Indicators should reflect the evolutionary nature of career development for both teaching and research.

Analysis of the questionnaire results also showed that some indicators received strong or overwhelming support. These included elements related to student and peer evaluation, creative activities in curricula design, innovations in teaching and assessment, academic leadership and development and reflection of teaching practice. It was clear from respondents that the way in which each criterion can and should be used in relation to promotion or recognition depends on factors such as quality, measurability and validity. We have concluded that, as with research, teaching experience and expertise can be judged on local, national and international achievement and reputation.

#### *Presenting evidence of teaching strength: the teaching portfolio*

The teaching portfolio has become an essential part of many probation and promotion packages. However, there is a huge diversity of views about what should be included in a portfolio and how it should be written. As well as detailing a basic record of teaching achievements the portfolio should, for some individuals, contain:

- A demonstrable commitment to reflective practice, highlighting how and why an individual's teaching has changed and evolved.
- Short statements encompassing the scope and quality of the individual's teaching.

- Qualitative and quantitative evidence of achievements.

The teaching portfolio should be constructed in much the same way as the research portfolio. It will rely on individuals keeping a complete and regular record of their accomplishments. Physical evidence of outcomes such as feedback, prizes, awards, innovation, and curriculum design should therefore be included. An individual's teaching portfolio should be under construction from the moment of appointment. The individual academic should be managing this teaching portfolio in balance with their research and administration portfolios to establish and ensure optimum claims for career progression and job satisfaction. Academic freedom brings personal responsibility.

#### **4.1.3 Balancing teaching, administration and research in promotions**

We have concluded that it is still possible for academics to achieve success and impact in the domains of both teaching and research, as well as through their management/ leadership contribution. Universities should take full account of all aspects of an individual's professional portfolio when considering a case for promotion. We recommend a unified approach to promotion that is capable of dealing with all academic profiles without the need for sub-sections or differential routes. Clearly universities must be cognisant of factors such as part-time working, career breaks and the natural and often meandering pattern of careers when considering promotion applications.

For promotion to be achieved, both the individual making the application and the promotions committee must recognise that promotion should not be given simply for length of service or adequacy in all domains (usually teaching, administration and research – although descriptors vary from institution to institution). Instead, there must be a demonstration of performance review that can be measured against defined criteria and some physical evidence of achievement and impact. There should usually be an expectation that a

minimum must be achieved in each domain in order for promotion to be possible. However, the individual should be able to show evidence of exceptional performance in one or more of the domains. It is when all the relative strengths of each domain are collected together that a measured judgement can be made on promotion. We illustrate how this concept would operate by configuring each domain (teaching, management/leadership and research) as a 'pot of evidence' (Figure 1). The evidence from each pot is then added to a larger fourth, or 'promotion' pot, which if filled above a defined level (dashed line) would result in promotion being supported. Failure to fill the 'promotion pot' would result in promotion being denied and would suggest to the individual that a higher level of achievement is required in one or more domains for promotion to be achieved in a future promotion round.

The illustrations show two examples of how the 'pots of evidence' might be filled for two individuals putting forward cases for promotion to Professor. In example A, the individual has a mixed portfolio with high levels of performance in teaching and pedagogical research and some strength in the management/leadership domain. Together these fill the promotion pot

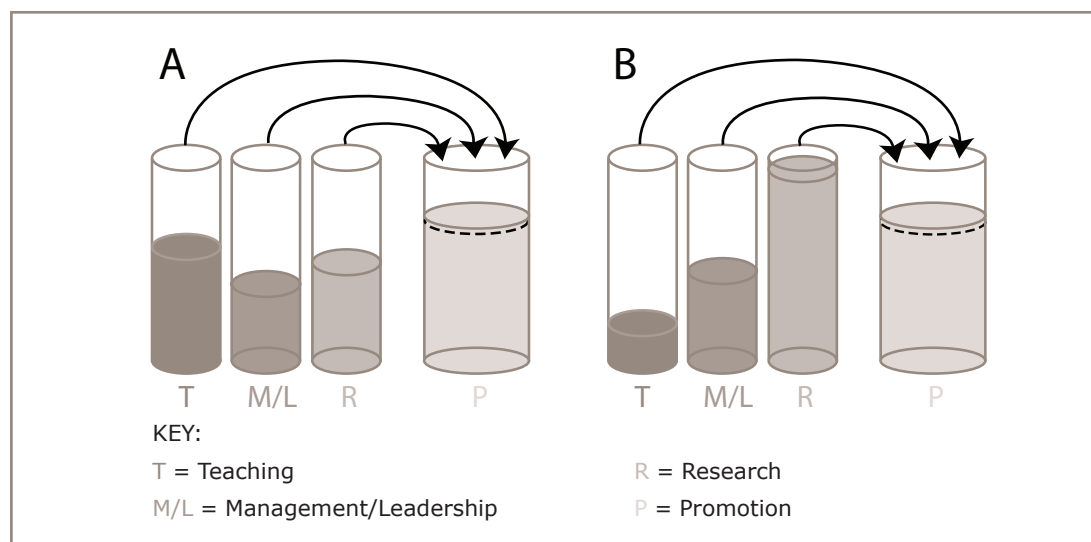
to the required level for promotion. In example B, the individual contributes somewhat to the teaching domain and holds a number of management/leadership roles however, has shown exceptional achievements in research. This is enough to fill the 'promotion pot' to the required level for promotion.

#### *Prioritising input and output indicators*

During the investigation the Academy gathered a list of input and output indicators that academics could use as evidence of excellence in teaching. Analysis of the questionnaire demonstrated that, although there was a spread of opinion as to what activities could be effectively measured, six indicators were clearly prioritised (section 3.12, Box 10) and student feedback was considered the most important indicator of all.

Despite the overwhelming opinion of those questioned that the student voice was the most important indicator, we noted that the processes and procedures for student evaluation have been relatively underdeveloped in the UK. Reflection of practices that are used elsewhere, such as in North America, demonstrate that student evaluation can become an integral part of promotional

**Figure 1 Requirements for promotion**



processes and we strongly recommend that UK institutions ensure that they have robust student evaluation procedures in place.

The questionnaire response highlighted that many universities have a relatively poor system of student-led evaluation in relation to individual teaching staff and where they exist, the method varies enormously. Some argue that students do not contribute valid information in evaluation exercises, as they have a tendency to focus on aspects such as appearance and popularity and are affected by the difficulty or enjoyment of the subject being taught. However evidence from the US and Australia suggests that student evaluations are a valid index of teaching strength, with students able to distinguish levels of teaching effectiveness, primarily based on what they have learned and their perceived success of the teaching delivery.

We feel that it is essential that a students' perspective be part of any evaluation of an academic's standing with regard to their teaching portfolio. This view was also held by the respondents to the questionnaire, an example being, 'if students don't think it's excellent then it isn't'. When presented alongside other data, such as peer review and the individual's own teaching reflection, student feedback contributes to a rounded evaluation of teaching practice. Institutions must therefore develop a clear and effective approach to student evaluation of teaching staff to ensure the data obtained are useful and meaningful.

#### *Developing an indicative list of input and output indicators*

Here we provide an indicative list of criteria that can be used by institutions as a guiding framework in their academic promotion and recognition processes. It is important that this list should not be prescriptive and for this reason a series of general indicator headings have been presented with a scale of 'desirable' to 'essential' (section 4.2). We recommend that institutions add their own specific examples.

Criteria have been presented in a format that is widely recognised in research assessments; the section headings usually relate to innovations, discoveries, grants and papers, and the developing kudos of the individual.

We considered it unwise to over-populate the criteria. Too many examples may leave the individual unsure of what factors are most important or how many examples they should have in their own application. There needs to be scope for individuals to show their achievements, but an implicit assurance must be given that not all elements need to be addressed. We have therefore included case studies for each tier of promotion to act as an authentic representation of what might be expected at the stage of application.

We hope these examples will help to answer the question 'what do I need to do to get promotion?' We believe a more unified approach would ensure that individuals are fully aware of what is expected nationally with respect to accomplishments in teaching, research and administration. Greater clarity and simplicity in these lists and greater awareness of them within the sector would be enabling for both individuals and HEIs.

Indicators must reflect career development as an incremental progressive process for both research and teaching, and therefore we felt it essential to categorise the process based on the level of promotion being sought. We fully endorse a singular structure of academic titles and therefore the indicators are set within this context: Lecturer to Senior Lecturer (Reader) and Senior Lecturer to Professor. However, unlike many guidance documents currently produced by universities, we have also included the 'promotion' category of postdoctoral fellow to Lecturer. Our previous report 'The freedom to succeed' found a perception of an incoherent management of workloads in academic positions.<sup>20</sup> The Academy strongly believes that universities have a fundamental duty to develop a robust career guidance package for all fellows,



supported by a set of clear indicators to show a postdoctoral or career-development fellow what is expected if they envisage lecturer status.

## 4.2 A three-level framework for use in academic promotion and recognition

The criteria we have devised relate to specific promotion progression. In each case only teaching-related indicators are highlighted. These should be used together with the research indicators that are already more established.

Level one details the proposed criteria required for transition from Postdoctoral Fellow to Lecturer, level two, from Lecturer to Senior Lecturer (Reader), and level three, from Senior Lecturer to Professor.

### Level one: Teaching indicators for appointment of a Lecturer

Student/peer evaluation

Indicator	Essential	Desirable
student feedback	—	√
student evaluation	—	√
peer evaluation	—	√

Creativity and innovation

Indicator	Essential	Desirable
support student learning	—	√

Individual reflection, evaluation and development

Indicator	Essential	Desirable
contributions to delivery/assessment	√	—
development of teaching practice	—	√
reflective practice	—	√
individual development	√	—

### Level one case study: Postdoctoral Fellow in Molecular Biology

Application for appointment based on: effective research record with some evidence of teaching practice and student support/training activities

*An individual is coming to the end of a five-year postdoctoral research fellowship after a previous two-year position. The Fellow has been a demonstrator for practical classes in a second year BSc biomedical module for the last four years and has presented two formal lectures on molecular biology to third year undergraduates, which received positive evaluation from students. In addition, he has acted as a project supervisor for a total of eight BSc students, one MSc student and two PhD students and his abilities for effective support have been recognised by his own supervisor. The Fellow has actively taken-up staff development opportunities and has attended workshops on lecturing to large groups and facilitating tutorial classes. He has also had the opportunity to observe various teaching sessions.*

The teaching domain of this individual would be viewed as meeting the expectation necessary for consideration of appointment to an academic position. Appointment would depend on the Fellow having the necessary achievement in research and best fit with the department's strategy.

### Level two: Teaching indicators for promotion of a Lecturer to Senior Lecturer (Reader)

Student/peer evaluation

Indicator	Essential	Desirable
student feedback	✓	—
student evaluation	✓	—
peer evaluation	✓	—
teaching awards	—	✓

Academic leadership

Indicator	Essential	Desirable
module co-ordination	—	✓
training of staff	✓	—
discipline development	—	✓
curriculum design	—	✓
internal reputation	—	✓

## Creativity and innovation

Indicator	Essential	Desirable
support student learning	√	—
curriculum development	—	√
innovations in teaching practice	—	√
internal reputation	—	√

## Individual reflection, evaluation and development

Indicator	Essential	Desirable
contributions to delivery/assessment	√	—
development of teaching practice	√	—
reflective practice	√	—
individual development	√	—
teaching qualification (or equivalent)	√	—

Please note: Teaching indicators will become essential if the individual is seeking promotion based on exceptional achievements in teaching.

**Level two case study 1: Lecturer in developmental biology**

Application for promotion to Reader based on: a significant record in research with some evidence of teaching and management/leadership strength.

*A Lecturer of six years' standing has contributed two research-led teaching sessions in a final year undergraduate module in biomedical sciences. In addition, she has for the last three years delivered seminars as part of the MSc development cell biology course. The Lecturer has supervised student projects at undergraduate (BSc) and postgraduate (MSc, PhD) levels. There is good evidence of effective delivery and impact by peer review and student feedback. The Lecturer developed and is responsible for the postgraduate research seminar programme within the department. She developed a package of novel formative assessments that are delivered electronically. Continuing professional development in teaching and learning has been evidenced by attendance at department and university workshops.*

The teaching domain of this individual would be viewed as meeting the expectation necessary for consideration of promotion. However, promotion would depend on the lecturer excelling within the research domain.

## **Level two case study 2: Lecturer in cell physiology**

Application for promotion to Senior Lecturer based on: considerable achievements in teaching and contributions to management/leadership with evidence of sound biological research activity.

*A lecturer of seven years' standing has delivered a significant series of lectures and practical classes within the medical and biosciences curriculum and her teaching has been highly praised by students and staff. For the last two years she has been module leader for a third year science module in cellular physiology and results from evaluation questionnaires demonstrate a substantial increase in the satisfaction of students since she took over and revised the content and direction of the module. This curriculum development has resulted in a new course handbook and a manual for the laboratory practical elements of the course. In addition the lecturer has developed a handbook for technicians to facilitate preparation of material for the practicals, and has developed a package of novel formative assessments that are delivered electronically. This innovation has led to requests to contribute to the university's learning and teaching conferences and workshops, and given rise to two short pedagogical publications and a funded collaboration with learning technologists. She has helped to lead the re-development of the biomedical science elements of the new medical curriculum and she is deputy chair for the year one examination board. The overall teaching and assessment load of the lecturer has increased substantially and is now well above average for the department. Continuing professional development in teaching and learning has been evidenced by extensive attendance at workshops both within the university and as part of the programme offered by her learned society and she has achieved a postgraduate teaching qualification.*

The teaching domain of this individual would be viewed as very strong and achieving the necessary level for promotion to Senior Lecturer. Promotion would, however, depend on the lecturer having met minimum expectations within the domain of physiological research and also contributions to management/leadership within the department.

### Level three: Teaching indicators for promotion of a Senior Lecturer (Reader) to Professor

#### Student/peer evaluation

Indicator	Essential	Desirable
student feedback	√	—
student evaluation	√	—
peer evaluation	√	—
teaching awards		√

#### Academic leadership

Indicator	Essential	Desirable
course co-ordination	√	—
mentorship	√	—
discipline development	√	—
curriculum design	—	√
department strategy	—	√
external reputation	—	√

#### Creativity and innovation

Indicator	Essential	Desirable
support student learning	√	—
curriculum development	—	√
innovations in teaching practice		√
pedagogical development	—	√
external reputation	—	√

#### Individual reflection, evaluation and development

Indicator	Essential	Desirable
contributions to delivery/assessment	√	—
development of teaching practice	√	—
reflective practice	√	—
individual development	√	
teaching qualification/HEA fellowship	√	—

Please note: Some teaching indicators will become essential if the individual is seeking promotion based principally on exceptional achievements in teaching.

### **Level three case study 1: Senior Lecturer in pharmacological sciences**

Application for promotion based on: exceptional achievements in teaching and management/ leadership with significant evidence of pedagogic research activity.

*A senior lecturer for ten years, he has delivered substantial pharmacological science teaching at undergraduate and postgraduate levels, and has acted as module and discipline lead for a number of courses. He has consistently received the department's best scores for teaching in student evaluations, and peer observation has revealed excellent standards of delivery and preparation, as well as numerous examples of good practice.*

*The overall teaching and assessment load is significant within the department. The individual has led redevelopment of the pharmacology and therapeutics elements of the medical curriculum and implemented a new assessment strategy. He has chaired the teaching and learning committee for the last three years, is chair of multiple examination boards and led a successful periodic review.*

*He has introduced a novel collection of Re-useable Learning Objects (RLOs) for pharmacology, which has now been released on the internet. This pedagogical research theme has resulted in a series of published papers, two successful external teaching related grants and the award of a National Teaching Fellowship. He has often asked to speak at national and international events on the subject of RLOs and has recently been approached to write a report on this subject for the Higher Education Academy. He has written a new and innovative textbook in pharmacology for undergraduate medical students, which is already recognised as one of the leading books in this area.*

*Through his learned society, he has implemented a training and support programme for young pharmacologists aimed at career advice and development. Finally, the senior lecturer has shown a concerted effort in the area of his own continuing professional development by attending workshops locally, nationally and internationally and has demonstrated that this has enhanced his teaching practice.*

The teaching domain of this individual would be viewed as exceptional and incorporates substantive management/leadership and pedagogical research profiles that meet the expectation necessary for consideration of promotion to professor.

### **Level three case study 2: Reader in microbiology**

Application for promotion based on: an outstanding record in biological research with evidence of teaching and management/leadership strength.

*A reader for eight years, she has delivered research-led teaching sessions at the undergraduate and postgraduate levels and is currently the co-ordinator for an MSc programme in microbiology. She is a member of the department's learning and teaching committee with responsibilities for postgraduate students. She has supervised a range of student projects at all levels and acted as internal/external examiner for a significant number of MPhil and PhD theses. She has been a mentor for several young lecturers and demonstrated continual development in her own teaching practice.*

The teaching domain of this individual would be viewed as meeting the expectations required for promotion to Professor and therefore would be considered. Promotion would, however, depend on an exceptional research performance of national/international standing in the area of microbiology as evidenced by the usual research indicators including papers, grants and research impact.

### **4.3 Summary of actions for developing better promotion and recognition processes**

#### ***4.3.1 Institutions and individuals have a partnership role to play in raising the profile of teaching in the promotions process***

Institutions should: a) work towards providing more effective and transparent promotion criteria that have both research and teaching at their core; b) define, with clear examples, what achievements are expected and the methods of evidence that are required to illustrate these criteria; and c) provide more effective opportunities for all staff to engage in and develop good teaching practice. Individuals should take responsibility and exploit opportunities for developing an effective and innovative approach to teaching that enhances student learning and their personal career development.

#### ***4.3.2 To date, academic diversity has not been an inherent part of most promotional procedures***

Institutions should endeavour to balance academic expertise with the diversity of contributions that are made throughout an academic career. Assessments should consider the contributions made by each individual, and promotion should be based on improvements and achievements in an individual's teaching, research and management. A comparison between the achievements of different members of faculty should not be the main objective of the promotions exercise.

#### ***4.3.3 There is wide variation in the promotional structures that are used, and the way in which applications are assessed, at different HEIs***

We recognise the need for flexibility to enable local expectations to be met, but we strongly believe a national overriding framework of indicators for academic promotion would be a valuable tool for academics working within the biomedical science community, and should be established. All areas of an individual's portfolio

should be measured against defined criteria and this should determine the success of a promotion application.

#### ***4.3.4 Measurable indicators for teaching must be accessible***

Unlike the well recognised metrics used for measuring accomplishments and status in clinical and biomedical research (e.g. numbers and impact of papers, grants and awards, external review), historically it has been harder to define a list of quantifiable input and output indicators for teaching.

It is essential to reach a consensus on what the most significant indicators of teaching strength are in order to:

- Gain a clear understanding and appreciation of the role and responsibilities of a teacher in higher education.
- Recognise the essential characteristics of an effective teacher.
- Decide the criteria against which teaching strength and leadership should be measured and assessed.
- Provide effective guidance for competitive career development and individual success.

We hope that this report, along with the presented toolbox, will serve as a guide for strengthening the status and valuation of teaching in academic careers in the biomedical sciences within the UK. We welcome feedback from both organisations and individuals.



## Appendix I: Committee and review group membership

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### Committee membership

#### **Professor Keith Gull CBE FRS FMedSci (Chair)**

Wellcome Trust Principal Research Fellow and Professor of Molecular Microbiology, Sir William Dunn School of Pathology and Principal of St Edmund Hall, University of Oxford

#### **Professor Robert Burgoyne FMedSci**

Head of School, School of Biomedical Sciences, University of Liverpool

#### **Professor Richard Denton FRS FMedSci**

Professor of Biochemistry and Former Dean of Medical and Veterinary Science, Department of Biochemistry, University of Bristol

#### **Dr Anne Donaldson**

Reader, Institute of Medical Sciences, University of Aberdeen

#### **Professor Darrell Evans**

Associate Dean, Brighton and Sussex Medical School, Brighton

#### **Professor Barry Furr OBE FMedSci**

Chief Scientist/Consultant, Global Discovery Division, Astra Zeneca PLC, Macclesfield

#### **Professor Mary Ritter**

Pro Rector for Postgraduate and International Affairs, Imperial College London

#### **Dr Stephen Taylor**

Reader, Faculty of Life Sciences, University of Manchester

#### **Professor Jonathan Cohen FMedSci**

Dean, Brighton and Sussex Medical School, Universities of Brighton and Sussex, Brighton (Co-opted member of the Academy of Medical Sciences Academic Careers Committee (Clinical))

#### **Professor Patrick Sissons FMedSci**

Regius Professor of Physic, School of Clinical Medicine, University of Cambridge (Chair, Academy of Medical Sciences Academic Careers Committee (Clinical))

### Secretariat

#### **Dr Suzanne Candy**

Director, Biomedical Grants and Policy, Academy of Medical Sciences

#### **Ms Emma Bennett (until September 2009)**

Senior Officer, Biomedical Grants and Policy, Academy of Medical Sciences

**Ms Eleanor Pond (from September 2009)**

Senior Grants Officer, Biomedical Grants and Policy, Academy of Medical Sciences

**Review group membership**

Reviewers were invited to consider whether the report met its terms of reference and whether the evidence and arguments presented in the report were sound and supported the conclusions. Members participated in a personal capacity and not on behalf of their affiliated organisations.

**Professor Ron Laskey FRS FMedSci (Chair)**

Honorary Director of the MRC Cancer Cell Unit, University of Cambridge

**Professor John Aggleton FMedSci**

Professor of Cognitive Neurosciences, Cardiff University

**Professor Frances Balkwill OBE FMedSci**

Professor of Cancer Biology and Centre Lead, Translational Oncology, Barts and The London, Queen Mary's School of Medicine and Dentistry

**Professor Christopher Day FMedSci**

Pro-vice Chancellor, Faculty of Medical Sciences, Newcastle University

## Appendix II: Focus groups

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### Focus group leaders

Professor David Brook, University of Nottingham  
 Professor Richard Denton FRS FMedSci, University of Bristol  
 Dr Anne Donaldson, University of Aberdeen  
 Professor Darrell Evans, Brighton and Sussex Medical School  
 Dr Kay Foster, University of Kent  
 Professor John K Heath, University of Birmingham  
 Professor Richard Killington, University of Leeds  
 Mr Ian Leith, University of Dundee  
 Professor Paul Luzio and Professor John Sinclair, University of Cambridge  
 Professor Keith Matthews, University of Edinburgh  
 Dr Ian Pickering, University of Liverpool  
 Dr Anne-Marie Seymour, University of Hull  
 Dr Stephen Taylor, University of Manchester  
 Dr Kevin Tyler, University of East Anglia  
 Dr Tracey Wilkinson, Queen's University Belfast  
 Professor Dave J Wilson, Cardiff University

### Questionnaire for focus groups

1. Is excellence in both teaching and research still a desirable aim for an individual? Is it still achievable?
2. Are teaching-only academic posts within a biomedical science department a good thing? Why?
3. The postgraduate certificate of undergraduate teaching and learning was designed to enhance teaching practice and develop pedagogical research. What is your perception of the status and effectiveness of the new teaching qualifications?
4. What is your perception of teaching with regards to career development and what is the future career of the people who are taking on teaching-only or teaching-focused posts?
5. How can teaching outputs be assessed and what physical outputs can be measured? How does this compare with research outputs?
6. Are you aware of any opportunities for enhancing teaching experience and development in any specific disciplines?
7. Are you aware of the criteria upon which individuals are assessed for promotion within your institution, and if so, what proportions of the criteria are related to research and teaching excellence?
8. Should a research-focused member of staff with little or no teaching load have the title of Lecturer? And/or, should a teaching-focused member of staff be accorded titles of professional tutor or similar?
9. How are teaching loads being developed in your department/institution?
10. How are teaching loads of younger staff handled particularly with respect to career development, progression and consolidation? How transparent is the teaching-research workload? Is research supervision and training of graduates included as contact teaching-time?
11. What effect do you think the RAE has had on the perceived relevance of teaching excellence and therefore its relation to academic careers? Has the RAE overshadowed the importance of teaching excellence in the measurement of a university's prestige?

12. How has the creation of research institutes and 'undergraduate-free zones' affected the view of the student population as to the importance of research and teaching in UK HEIs?
13. How have new JIF and SRIF funded biomedical sciences research buildings affected contact of academics and undergraduates, and what is the status of the 'research project' in undergraduate education in these new environments?

## Appendix III: Individuals who contributed/were consulted during the review

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Professor Sue Allen, University of Northampton  
Professor Terence Bennett, University of Nottingham Medical School  
Professor John Bligh, Academy of Medical Educators  
Professor Ian Booth, University of Birmingham  
Ms Julie Brice, Peninsula College of Medicine and Dentistry  
Professor Ed Byard, University of Winnipeg  
Professor Edward Byrne, University College London  
Professor John Caldwell, University of Liverpool  
Professor Jane Calvert, University of Newcastle upon Tyne  
Professor W. Zacheus Cande, University of California  
Professor Yvonne Carter OBE FMedSci, University of Warwick  
Professor Graham Coombes, University of Strathclyde  
Dr Jim Cunningham, University of Brighton  
Dr Christina Dominici Bianchi, University of California  
Professor Pete Downes FRSE, University of Dundee  
Professor Andrew Easton, University of Warwick  
Dr Ken Flint, University of Warwick  
Professor Christopher Fowler, Barts and The London School of Medicine and Dentistry  
Professor Andy Garner, Keele University  
Professor Jonathan Gibbins, University of Reading  
Professor Michael Greaves, University of Aberdeen  
Professor Paul Hagan FRSE FMedSci, University of Glasgow  
Professor Len Hall, University of Bristol  
Professor Tony Harmar, The University of Edinburgh  
Professor Judy Harris, University of Bristol  
Professor John Harwood, Cardiff University  
Professor John Heath, The University of Birmingham  
Dr Peter Hogarth, University of York  
Professor Matthew Holley, University of Sheffield  
Professor Steve Homans, University of Leeds  
Professor Pali Hungin OBE, Durham University  
Professor Sharon Huttly FMedSci, London School of Hygiene & Tropical Medicine  
Professor Oliver James FMedSci, Newcastle University  
Professor David James, University of Nottingham  
Professor John Jefferys FMedSci, University of Birmingham  
Professor Peter Jeffries, The University of Kent  
Professor Paul Keane, University of Teesside  
Professor Richard Killington, University of Leeds  
Professor Peter Lambert, Aston University  
Professor Ian Lauder FMedSci, University of Leicester  
Professor Robert Lechler FMedSci, King's College London  
Professor Irene Leigh OBE FMedSci, University of Dundee  
Professor Sam Leinster, University of East Anglia  
Professor Andrew Lloyd, University of Brighton  
Professor Hugh MacDougall, University of St Andrews

Professor Keith Matthews, University of Edinburgh  
Professor Colin McCaig, University of Aberdeen  
Professor Roger Morris, King's College London  
Professor Ian Morris, The University of York  
Professor Jill Morrison, University of Glasgow  
Professor Kevin O'Brien, University of Manchester  
Professor Paul O'Neill, University of Manchester  
Professor Michael Owen FMedSci, Cardiff University  
Dr Sue Parkin, University of Bradford  
Dr Rona Ramsay, University of St. Andrews  
Professor Paul Ramsden, The Higher Education Academy  
Professor Richard Reece, University of Manchester  
Professor Bert Rima, Queen's University Belfast  
Professor Sir John Savill FRSE FMedSci, University of Edinburgh  
Dr Anne-Marie Seymour, University of Hull  
Dr Tom Sheppard, University College London  
Professor Robert Sinden FMedSci, Imperial College London  
Professor Patrick Sissons FMedSci, University of Cambridge  
Dr Chris Stephens, University of Southampton  
Professor Nicholas Talbot, University of Exeter  
Professor Sir John Tooke FMedSci, Universities of Exeter and Plymouth  
Professor Christian Tschudi, Yale University  
Professor John Turner, University of East Anglia  
Dr Kevin Tyler, University of East Anglia  
Professor Elisabetta Ullu, Yale University  
Ms Amanda Walker, Oxford University  
Professor Alistair Warren, University of Sheffield  
Professor Gareth Williams, University of Bristol  
Professor David Wynford-Thomas, Cardiff University  
Mrs Janet Yates, University of Nottingham

## Appendix IV: Data collection

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### Survey questions for Heads and Deans of biomedical science departments and medical schools

1. Does your university provide you with the opportunity for appointments to 'teaching-focused' academic posts?
2. Do you have any such 'teaching focused' academic posts within your department/school?
3. If not, what was the strategy behind not having these appointments?
4. If so, how many 'teaching focused' posts are there within the department, and what percentage is this of the overall number of academic staff within the department?
5. What was the strategy behind these appointments?
6. Were these individuals recruited specifically to newly created 'teaching only' posts or were some individuals re-designated as teaching focused faculty?
7. Do you make a distinction between an appointment to a teaching-focused post and the progression through an individual's career into such a post?
8. What do you see as the advantages of 'teaching focused' posts (for the department)?
9. What do you see as the disadvantages of 'teaching focused' posts (for the department)?
10. Does the university have a career route (including promotion options) mapped out for academics that are engaged in teaching focused posts?
11. How is teaching viewed in your department/school?
12. Is teaching excellence recognised in some tangible way and, if so, how is it measured?

### Teaching excellence questionnaire

The Academy requested that academics, at various career stages and with various degrees of teaching experience, considered the role of a teacher and offered views on the list of 42 teaching related activities that could be used to indicate teaching excellence. Heads and Deans of biomedical science departments and medical schools, and focus group leaders were asked to provide an insight into how they and/or the individuals within the institution identified or evaluated teaching excellence.

Individuals were asked to:

- Rank all of the activities by indicating which were considered essential, desirable or supplementary indicators of teaching excellence.
- Indicate which four of the 42 indicators listed were the most important in terms of teaching excellence.
- Consider whether there were additional activities that would be ranked 'essential' that had not been included in the list.
- Consider whether the five descriptor headings were appropriate divisions of teaching excellence and, if not, suggest alternatives.

The list of 42 activities and indicators of teaching excellence had been grouped into five areas as follows:

#### **Teaching delivery and administration:**

1. Number of teaching hours (contact time, preparation time, assessment setting and marking time etc.)

2. Full time equivalent volume and earning capacity (student numbers x teaching time)
3. Type and level of courses taught
4. Training, mentoring and student support activities
5. Development of course booklets and guidance materials
6. Cross-disciplinary/multi-professional teaching

***Course design and development:***

7. Creation of syllabi, curricula, training courses
8. Development of e-learning technologies and modules
9. Course co-ordination and management
10. Development of innovative teaching and assessment tools
11. Novel application of existing teaching and assessment tools

***Evaluation and reflection on learning and teaching:***

12. Results of formal course/module evaluation
13. Results of, and reflection on, peer observation and review
14. Results and reflection of mentor review
15. Student/trainee feedback
16. Development and evolution of teaching practice
17. Student attendance
18. Student attainment
19. Student completion rates
20. Number and stature of students, including continued success of past students
21. External examiner comments on courses and students
22. Involvement in institutional periodic review and quality assurance assessment exercises

***Academic leadership, recognition and governance:***

23. Professional body membership (e.g. HEA Fellowship)
24. Teaching awards (local and national)
25. Administrative leadership (e.g. teaching committee leadership)
26. Development of local, national and international training courses, strategy meetings etc.
27. Mentoring of colleagues
28. Service and leadership on local/national committees, validation panels, periodic review, course accreditation, learned society and education committees
29. Government consultation/advice
30. External examining
31. Visiting/honorary teaching contracts at other institutions
32. Schools liaison, widening participation and admissions
33. Employer association

***Scholarly approach to learning and teaching:***

34. Formal teaching qualifications (e.g. PGCHE)
35. Publication of teaching/educational material including textbooks, edited books, HEA documents, policy statement
36. Original pedagogical/educational research projects undertaken
37. Original pedagogical/educational research awards/grant funding
38. Original pedagogical/educational research papers, reviews and editorials
39. Editorial Board/reviewer for educational journals



40. Invitations to speak about educational matters - local and national
41. Organisation and/or participation in conferences, seminars and workshops, including presentations  
(includes dissemination of good practice)
42. Participation in learning and teaching organisations

**Websites used for looking at promotion/appointment criteria:**

University of Dundee. <http://www.dundee.ac.uk/hr/annualreview>

Cardiff University. <http://www.cardiff.ac.uk/humrs/staffinfo/academicpromotions/index.html>

University of Glasgow. <http://www.gla.ac.uk/services/humanresources/policies/p-z/promotion/promo2008-09/acadcareer>

Harvard University (USA). <http://facultypromotions.hms.harvard.edu>

University of Manchester. <http://www.eps.manchester.ac.uk/tlc/strategy/documents/Strategy-Developingyourcareer.doc>

University of Melbourne (Australia). [http://www.cshe.unimelb.edu.au/pdfs/teaching\\_portfolio.pdf](http://www.cshe.unimelb.edu.au/pdfs/teaching_portfolio.pdf)

University of Newcastle. <http://www.ncl.ac.uk/hr/promote/academic/2009>

University of New South Wales (Australia). [http://www.hr.unsw.edu.au/employee/acad/ap\\_toolkit.pdf](http://www.hr.unsw.edu.au/employee/acad/ap_toolkit.pdf)

University of Sheffield. <http://www.shf.ac.uk/hr/policies/promotion>

University of Sussex. <http://www.sussex.ac.uk/Units/staffing/personnl/reviews/academic/criteria.pdf>

## Analysis of responses from 34 institutions

### **Prioritising input and output indicators:**

Academics at various career stages and with various degrees of teaching experience were asked to consider the role of a teacher, offer their views on the list of teaching related activities, and to prioritise the input and output indicators in order of importance.

Key to responses:

1-20%	21-40%	41-60%	61-80%	81-100%
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Activities/Indicators of Teaching Excellence	Essential	Desirable	Supplementary	Specific comments
<b>Teaching delivery and administration:</b>				
1. Number of teaching hours (contact time, preparation time, assessment setting and marking time etc.)				This recognises those who contribute volume as well as quality and it is crucial that the extent of academic input is included in any assessment. But it is not seen as an indicator of excellence. It can be both motivational and useful. Excellent teachers will have differential loads depending on other activities.
2. FTE volume and earning capacity (student numbers x teaching time)				An essential administrative metric that should be available to all, but a measure of activity and not quality or excellence.
3. Type and level of courses taught				General administrative metric and probably not a quality indicator except where it reflects demand based on feedback.
4. Training, mentoring and student support activities				Desirable/essential but only if quality is being measured.
5. Development of course booklets and guidance materials				As appropriate to the type of course
6. Cross-disciplinary/multi-professional teaching				Rather course dependent and not teacher dependent.

Activities/Indicators of Teaching Excellence	Essential	Desirable	Supplementary	Specific comments
<b>Course design and development:</b>				
7. Creation of syllabi, curricula, training courses				
8. Development of e-learning technologies and modules				
9. Course co-ordination and management				
10. Development of innovative teaching and assessment tools				
11. Novel application of existing teaching and assessment tools				
<b>Evaluation and reflection on learning and teaching:</b>				
12. Results of formal course/module evaluation				An important criterion but should include a 'reflection on' the outcomes.
13. Results of, and reflection on, peer observation and review				
14. Results and reflection of mentor review				
15. Student/trainee feedback				If students don't think it's excellent then it isn't.
16. Development and evolution of teaching practice				
17. Student attendance				Measures such as this and the following three are potentially powerful measures. Individuals may wish to make claims on progression of students benefitting from their specific teaching but often these measures reflect excellence of multiple teachers.
18. Student attainment				May also be a measure of student and institutional factors as well as teacher factors.
19. Student completion rates				
20. Number and stature of students, including continued success of past students				
21. External examiner comments on courses and students				Comments nowadays are rarely useful at individual course level.
22. Involvement in institutional periodic review and QAA				Not generally seen as positive.

Activities/Indicators of Teaching Excellence	Essential	Desirable	Supplementary	Specific comments
<b>Academic leadership, recognition and governance:</b>				
23. Professional body membership (e.g. HEA Fellowship)				
24. Teaching awards (local and national)				Can be both motivational and provide a useful acknowledgement of impact.
25. Administrative leadership (e.g. teaching committee leadership)				
26. Development of local, national, international training courses, strategy meetings etc.				
27. Mentoring of colleagues				
28. Service and leadership on local/national committees, validation panels, periodic review, course accreditation, learned society and education committees				Only useful if based on recognised excellence as teacher and maybe more useful for senior levels – Senior Lecturer to Professor.
29. Government consultation/ advice				May depend on subject area and maybe more useful for senior levels – Senior Lecturer to Professor.
30. External examining				More useful for senior levels – Senior Lecturer to Professor.
31. Visiting/honorary teaching contracts at other institutions				
32. Schools liaison, widening participation and admissions				Many respondents felt that this should be a core of everybody's portfolio.
33. Employer association				

Activities/Indicators of Teaching Excellence	Essential	Desirable	Supplementary	Specific comments
<b>Scholarly approach to learning and teaching:</b>				
34. Formal teaching qualifications (e.g. PGCHE)				A wide range of comments were made here encompassing views that the PhD is much more important; that these qualifications are diverse and untested in their ability to set a defined standard in education or teaching ability. Their ability to distinguish (now or in the future) is therefore in some doubt.
35. Publication of teaching/ educational material including textbooks, edited books, HEA documents, policy statements				
36. Original pedagogical/ educational research projects undertaken				Absolutely depends on quality and external recognition.
37. Original pedagogical/ educational research awards/ funding-grants				
38. Original pedagogical/ educational research papers, reviews and editorials				
39. Editorial Board/reviewer for educational journals				
40. Invitations to speak about educational matters - local and national				
41. Organisation and/or participation in conferences, seminars and workshops, including presentations (includes dissemination of good practice)				
42. Participation in learning and teaching organisations				



## Bibliography

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- Academy of Medical Sciences (2005). *The freedom to succeed: a review of non-clinical research fellowships in the biomedical sciences*. <http://www.acmedsci.ac.uk/p99puid2.html>
- Academy of Medical Sciences (2010). *Reaping the rewards: a vision for UK medical science*. <http://www.acmedsci.ac.uk/index.php?pid=98&puid=172>
- Academy of Medical Sciences (2010). *The Bologna Process: will it affect UK biomedicine and clinical science?* <http://www.acmedsci.ac.uk/p101puid179.html>
- American Society for Cell Biology (2008). *Career advice for life scientists: volumes I and II*. [http://www.ascb.org/files/WICB\\_Pub\\_Vol\\_I\\_II.pdf](http://www.ascb.org/files/WICB_Pub_Vol_I_II.pdf)
- Chickering AW & Gamson ZF (1987). *Seven principles for good practice in undergraduate education*. AAHE Bulletin **39**, 3.
- Cohen P (1981). *Student ratings of instruction and student achievement: a meta-analysis of multisection validity studies*. Review of Educational Research **51**, 305.
- Cooksey D (2006). *A review of UK health research funding*. [http://www.hm-treasury.gov.uk/d/pbr06\\_cooksey\\_final\\_report\\_636.pdf](http://www.hm-treasury.gov.uk/d/pbr06_cooksey_final_report_636.pdf)
- Department for Business, Innovation and Skills (2009). *Higher ambitions: the future of universities in a knowledge economy*. <http://www.bis.gov.uk/wp-content/uploads/publications/Higher-Ambitions.pdf>
- Department for Business Innovation, and Skills (2009). *Higher education funding 2010-11*. <http://www.hefce.ac.uk/news/hefce/2009/grant1011/letter.htm>
- DfES (2003). *The future of higher education*. HMSO, London.
- General Medical Council (2003). *Tomorrow's doctors: recommendations on undergraduate medical education*. General Medical Council, London.
- Harden RM & Crosby JR (2000). *The good teacher is more than a lecturer – the twelve roles of the teacher*. Medical Teacher **22**, 334-347.
- Higher Education Funding Council for England (2001). *Increasing medical student numbers in England 2001*. [http://www.hefce.ac.uk/pubs/hefce/2001/01\\_31.htm](http://www.hefce.ac.uk/pubs/hefce/2001/01_31.htm)
- Higher Education Funding Council for England (2003). *Rewarding and developing staff in HE – round 2 (outcome of consultation on funding from 2004-05)*. [http://www.hefce.ac.uk/pubs/HEFCE/2004/04\\_03/](http://www.hefce.ac.uk/pubs/HEFCE/2004/04_03/)
- Higher Education Funding Council for England (2008). *Allocation of funds: recurrent grants for 2008-09*. [http://www.hefce.ac.uk/pubs/hefce/2008/08\\_12/](http://www.hefce.ac.uk/pubs/hefce/2008/08_12/)

Higher Education Funding Council for England (2010). *Letter to Vice-Chancellors and Principals of HEIs: funding for universities and colleges in 2010-11*. [http://www.hefce.ac.uk/pubs/circlets/2010/cl02\\_10/](http://www.hefce.ac.uk/pubs/circlets/2010/cl02_10/)

Higher Education Statistics Agency (2010). *Students and qualifiers data tables*. [http://www.hesa.ac.uk/index.php?option=com\\_datatables&Itemid=121&task=show\\_category&catdex=3](http://www.hesa.ac.uk/index.php?option=com_datatables&Itemid=121&task=show_category&catdex=3)

Marsh HW (2007). *Do university teachers become more effective with experience? A multilevel growth model of students' evaluations of teaching over 13 years*. *Journal of Educational Psychology* **99**, 775-790.

Parker J (2008). *Comparing research and teaching in university promotion criteria*. *Higher Education Quarterly* **62**, 237-251.

Skelton A (2004). *Understanding 'teaching excellence' in higher education: a critical evaluation of the National Teaching Fellowship Scheme*. *Studies in Higher Education* **29**, 451-468.

Thompson J & Cook M, et al. (1998). *Developing an institutional framework for rewarding excellence in teaching: a case study*. *Quality Assurance in Education* **6**, 97-105.

Trowlker P, Fanghanel J & Warehama T (2005). *Freeing the chi of change: the Higher Education Academy and enhancing teaching and learning in higher education*. *Studies in Higher Education* **30**, 427-444.

Raftery D (2006). *In pursuit of teaching excellence: encouraging teaching excellence in higher education*. <http://www.aishe.org/events/2005-2006/conf2006/proceedings/paper-22.doc>







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