REF: Research Excellence Framework

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Research Assessment – a brief history

- Began in 1986- used for funding (Av-, Av, Av+ Av+*).
- Again in 1989 (1-4)
- Changed the scaling in 1992 and the funding was now associated with the grades, (1-5)- QR introduced
- In 1996 funding was concentrated at the higher grades (5* introduced)
- 2001 even further concentration of funding (1-5* (6*))
- 2008 change of system to profile (u/c-4*) not stated how the funds will be allocated at this point

Where are we coming from?

We have a strong background in measuring output standards which is why we believe that if it is the quality of our research outputs that we wish to judge then whatever measure we choose must do just that

The way forward

- REF asks a number of questions and has a number of aims namely
  - To reduce the burden of RAE
  - To avoid undesirable incentives and to promote equality and diversity.
  - To provide a stable framework for funding world class research

- I will work though the questions posed in the HEFCE discussion document making comment as we go.

Reduce the burden of RAE

- Scrap it!
  - Give the money to departments according to staff numbers
  - Give the money to RCUK and let people compete for it.
- Give the money on the basis of volume of output
  - Number of papers
  - Successful PhD students
  - Research income
- Problem: these do not necessarily include a quality measure.
- HEFCE suggests REF

Broad Groups of Science based subjects

- All engineering grouped together in one UoA
  - Ten years ago most engineering provision was in separate departments of mechanical, electrical, civil, chemical etc., These still exist but often under the umbrella of Schools.
- Distribution of QR income will then be done internally.
  - Lose “authority” of external determination.
  - Inefficiency of needing a separate internal arrangement-how? and on what basis.
- However this may not a major issue for many universities and certainly is not concern for HEFCE.

Is it Relevant?

University	Civil	Mech	Elec	Chem
Birmingham	5	4	5	5*
Leeds	5	5*	5*	5 (Gen)
Portsmouth	3a	4	2	
Heriot-Watt	4	4	4	4
Edinburgh	5	4	5*	4

Averaging can lose the excellent scores in some subjects

Bibliometric Data

- What do we think of the proposed approach to citation data?
- Less than 50% Engineering journals covered by WoS
- CWTS study (section 3.1) states *"Therefore, as a general principle we state that optimal research evaluation is realised through a combination of metrics and peer review…. ..metrics and peer review both have their strengths and limits. The challenge is to combine the two methodologies in such a way that the strengths of one compensates for the limitations of the other".*

Statistics for UK research 1997-2006

Group	No	c	cf	%not c	0-0.4	0.4-0.8	0.8-1.2	1.2-2	2-3	>3
Physics/Mat	95,790	6.3	1.2	33	17	14	9	11	6	10
Astronomy	18,397	11.8	1.3	22	22	16	10	13	7	10
Life sciences	92,902	16.3	1.2	16	23	19	12	14	7	9
Medical sciences	9,332	7.1	1.0	25	20	19	11	11	6	8
Biological Sci.	43,899	9.3	1.3	22	16	17	12	14	8	11
Bio med Sci	90,857	12.2	1.2	19	21	18	12	13	7	10
Chem/Eng	73,180	8.0	1.3	25	18	16	11	12	7	11
Civil Eng	5,518	2.3	0.9	48	10	12	8	9	5	7
Clinical Med	239,258	9.2	1.2	29	18	15	10	11	7	9
Comp Sci	25,664	3.1	1.2	51	10	10	6	8	5	10
Earth Sci	32,874	6.8	1.2	27	15	15	12	13	8	10
EE and Telecom	22,344	2.9	1.0	48	12	13	7	8	5	7
Energy	10,179	3.0	0.9	44	13	13	8	9	5	8
Environment Sci	33,782	6.8	1.1	27	17	15	11	13	7	9
Gen Eng	8,371	2.6	1.0	43	10	14	9	9	7	8
Instrumentation	7,033	3.3	0.9	42	14	14	9	9	5	6
Mech Eng Aero	18,581	3.1	1.0	43	11	13	9	10	6	8

Bibliometric Data.....

- Again in section 3.2 the report says *“Peer review is and has to remain the principal procedure for judgement of quality”.*
- Some problems are highlighted with peer review but:
  - RAE teams have experience of using this.
- Bibliometric data cannot capture confidential reports for industry or defence bodies
- Nor does it capture International conferences where industry likes academics to publish

The nature of publishing

- *To avoid undesirable incentives*
- How to increase your citations:
  - Write review articles
  - Publish in high impact factor journals from American publishers
  - Publish in special Issues on a themed subject
  - Change your research from applied to fundamental/theoretical
  - Do “headline grabbing” research
  - Don’t work with SMEs who don’t want you to publish your work
- Many of these are counter to government policy

Does Citation Analysis measure Quality?

- Depends on how ahead of the field your research is.
- Depends on “Headline Grabbing” factor
- Work that is perceived as wrong at the time may gain many citations
- Good work which is timely will gain many citations

Additional information

- In engineering we need to work with industry so we need to have credit for
  - Patents
  - Confidential reports,
  - Technology transfer to SMEs particularly
  - Design solutions
- Recognise that Engineering is different from science and find ways of measuring that which is important

Data Checking

- HEIs will have to check their WoS data for completeness and accuracy.
  - How can they change it?
  - Do we have to convince WoS to incorporate journals?
    - Easier to publish elsewhere in US journals
  - What happens to European Publishers?
- Will this checking be less work than RAE especially at first until working practices have been established?

Special Circumstances

- *Promote equality and diversity*
- RAE 2008 can give consideration to early career researchers, career breaks and long term illness via peer review
- How can this be done with citations alone?

Major Changes

- *Implications for Institutions*
  - Engineers will move from applied research with industry to fundamental science to increase citations
  - Our members report that some universities are holding seminars already on how to improve your citation rates.
  - Members are reporting that in order to maximise citations, engineering departments have begun recruiting physicists and chemists
- What effect will this have for teaching and professional development of students?

What do our members think?

- Surveyed all our members
- 64 responses
  - From 37 different universities
  - 13- Russell Group
  - 10- post 1992
  - 14- 94 group +
- 62 are against using citations (97%)
- 2 are in favour of using citations
  - One of whom thinks the current system is too much work.

Worries of some members not related to Citations

- 1 wanted peer review but wanted to include journal impact factors.
- 1 wanted peer review plus total number of papers to encourage more publication
- 1 objected to counting successful PhD completions in 4 years as being too short a period
- 1 member thought WoS did have good coverage for engineering

Conclusions

- Our members are happy with counting:-
  - Research income (normalised)-not an output but related in some cases
  - Successful PhD graduations
  - Other metrics PROVIDED

We retain Peer Review to moderate the data and take care of issues of equality and diversity of individuals and Institutions

Conclusions...

- The use of bibliometrics should be deferred until more work has been carried out on their robustness and our academic community has been convinced that what we are measuring is “fit for purpose”
- The RAE has changed the face of Universities in some ways for the better and in some for the worse. The proposed REF has the potential to change applied research irrevocably unless extreme care is taken