

## CHAIR'S REPORT

### Agenda item – HoDoMS General Meeting 13<sup>th</sup> April 2012

#### 1. General Comments

I wish to thank the HoDoMS committee for supporting me during my first year as Chair. I would particularly like to thank Jeremy Levesley, previous Chair of HoDoMS, and Anthony Wickstead, the Treasurer.

It has been a controversial year in Mathematical Sciences for UK Universities. In addition to the general university turmoil on the eve of new student funding regimes, a clear focus of discussion for us was the International Review of Mathematics in 2010 which was commissioned by the EPSRC. A specific issue was the EPSRC response to concern on the adequate supply of Statistics lecturers into the university system. Their decision to restrict EPSRC Research Fellowships to Statistics and Probability for at least one year raised substantial concern in universities. There was also the wider issue of shaping across the discipline which also remains controversial. The shaping issues have been seen as threatening by some sections of our community and I think it fair to say that the Pure community has felt particularly threatened by the nuances of policy within the EPSRC.

The key issue that I have observed as the new Chair of HoDoMS is the absence of an executive lead within UK Mathematical Sciences. None of the interest groups from learned societies to the various councils and committees have the resource across the discipline to command respect or the relevance to lead. The fragmentation of Mathematical Sciences seems more pronounced than other subjects – this may be unavoidable given the breadth of the subject. There may be no way out of this impasse – we see these clear divisions within Departments as well as at the national level.

A consequence is that Mathematical Sciences has no clear identity or focussed leadership in our increasing engagement with Government. We certainly look fragmented by comparison with Physics where the Institute of Physics seems to have the authority to speak for the Physics community at all levels, both across the discipline, and from schools to research. It would be good for us to have a similar nationally recognized leadership I believe that the DfE has already observed this discrepancy between physics and mathematics. A further example is the request of Government to have increased involvement of the universities in the structuring and examining of A-level studies, where our reactions and coordination is fragmented.

Chairing HoDoMS during the last year has been a steep learning curve for me. I took up the request of the committee for HoDoMS to join the Council for Mathematical Sciences (which consists of the various major learned societies). This was rejected (not for the first time) on the grounds that 1. we were not a learned society, and 2. It was claimed that the CMS could only make a public statement if **all** the CMS members agreed. This already difficult task would clearly be made more difficult with additional members.

From the HoDoMS perspective, the complete range of UK mathematics departments often has different interests and priorities to those of the learned societies and so independence from CMS is sometimes useful.

Despite the CMS decision, I have no problems working with their members – Anne Bennett (LMS/CMS) is excellent at communicating information and issues and my working relationship with the CMS Chair Frank Kelly is also very good. It was decided by the HoDoMS organising committee to discontinue our position of wishing to join the CMS, and that further requests would not be made to CMS unless a formal decision was agreed to try again for membership.

## 2. HoDoMS Annual Conference 2012

We had a programme of events and all the speakers originally invited were able to attend. It was felt by the committee meeting afterwards that we had seen a good range of topics over research, teaching and leadership, and that the interaction between the audience and the speakers had been good. This was particularly so, as many speakers gave ample time for interaction on the issues.

The conference began with **REF2014 for Mathematical Sciences** presented by Prof John Toland FRS, *Chair of REF2014 Mathematical Sciences Panel*. The issues discussed included the new problem of a single panel and the different cultures within it, the different levels of mathematical depth, the moderation needed across the discipline, and the problem of interdisciplinary assessment. These issues are still being addressed, but there was a view that the cultural differences had be embraced and accepted by the panel , otherwise they may become unworkable.

This was followed by **Mathematical Sciences AT EPSRC** which was presented by Dr Philippa Hemmings. The discussion was framed by the current financial and shaping agenda which is taking place in RCUK. The EPSRC emphasised their determination to deliver the shaping agenda in the light of the current financial climate, but suggested that there was some easing from the strictures of the decisions made on Research Fellowships for 2011-2012. It was clear that many initiatives are likely to be co-funded in cross-disciplinary support. A key financial input was that the flat funding would effectively mean considerable decreases in responsive-mode funding over the next few years.

**Managing a Mathematics Department** by Prof David Riley , *University of Nottingham*, touched on his experience over many years as Haed and Pro-Vice Chancellor. The conclusion was that the Heads role had never been more demanding intellectually, or more time consuming. The many issues that we are faced with were discussed. Much of the discussion centred on the problems of workload models and performance management.

Professor Gwyneth Stallard, *Chair, LMS Women in Maths Committee* was able to report success in the development of the **GOOD PRACTICE SCHEME for Mathematical Sciences**. This scheme has the potential to play an important role in supporting Mathematics Departments. If the *Athena Swan* award scheme becomes a qualification for participation in the receipt of teaching and research awards, then the support of the scheme in helping departments towards gaining Athena Swan status could be a vital asset.

Professor Charles Taylor, *University of Leeds*, presented **POST-2012 Higher Fees and M\* degrees**. The increase in student fees (to £9000) seems likely to have an impact on the numbers of students staying for an MMath. Some universities would view as "inconsistent" the setting of lower fees for an MSc than the 4th year of an MMath, so PGT courses are also likely to have fewer enrolments from home/eu students. This will be accentuated by the lack of an easy loan. The BBC student finance calculator <http://www.bbc.co.uk/news/education-14785676> shows that - in the "worst case"

scenario, in which the earnings of a 4-year degree are identical to those of a three-year degree - the amount of loan which is actually paid back is often very similar between the 3 and 4 year versions. The Sutton report (using graduates from all subjects in 2008) suggests that an MSc does increase lifetime earnings by an average of 15% compared to a BSc (allowing for other factors), but there does not seem to be any clear data (from the job market, or graduate destination surveys) on the benefits of doing an MMath - at least not comparing like-with-like. Such data would be useful in helping to sustain the MMath programmes. See <http://www.suttontrust.com/research/the-social-composition-and-future-earnings-of-postgraduates/> .

An extra item- presented by Prof David Arrowsmith - on the very recent **Gove A-level initiative** for universities to become more involved in A-level curricular development and examining was arranged at the last moment. A compendium of the Government statement and the reactions from various interested subject groups were presented. The main conclusions were that we did not want unnecessary changes which frightened away students from taking mathematical sciences thereby reducing the possibility of increasing the skill base in Mathematics. We also raised concern that asking for higher standards, and therefore fewer higher awards, would require both teachers and head teachers to see “progression of students with increasingly higher grades” as no longer the key criteria of quality. It was also felt that the minimum should be changed in this process, and it may well be possible to raise the quality of the A-level course and the quality outcome for students with innovative changes in the assessment rather than the curriculum. Also, this could be more easily monitored and administered.

Mr David Youdan, IMA, and Mr Makhan Singh provided the conference with **HE STEM Initiative** which involved displays of the mathematical models which have been used to stimulate interest in the subject around the country. High quality models were displayed such as how the lift characteristics of a plane’s wing profile increase with its tilt and the wind flow over the aerofoil. Other experiments showed naturally created probability distributions using a bagatelle, and the beautiful patterns which arise from a lightly damped biharmonic oscillator created with a pendulum structure.

Dr Mary McAlinden **Professional Training for Mathematical Sciences** in *Higher Education Academy (Discipline Lead for MSOR)* explained the role of the HEA in some detail and, in particular, how it had in part taken on the responsibility of the MSOR Unit in Birmingham, which will be closing later this year. The provision currently available and the grants for promotion of good teaching practice were discussed. There was also a valuable discussion with the participants on future ways forward for improved and targeted support for University mathematics lecturers vis a vis good and effective teaching.

Dr Rosalind Mist, Head of the Secretariat for the *Advisory Committee on Mathematics Education*, and Dr Jenny Golding, discussed the issues of **Post-16 Mathematics** and reported from the concurrent ACME conference on the reaction to the Gove announcement. The views were similar to those raised at HoDoMS in that the ideal of improving the standard of the A-level is right but the implementation needs to be carefully programmed to avoid the opposite outcome to that intended of training a strong base of students in Mathematics.

Dr Graeme Reid, *Department for Business, Innovation and Skills* presented **Why should taxpayers fund research in mathematics?**. He emphasised the importance of mathematics in government thinking, and its importance as a tool for other sciences as well as in its own right. The position of the UK in terms of conversion of academic endeavour into high quality research output is still one of the strongest but for that to be continued increased focus on developing the home base of mathematicians is paramount. However, it was clear that we as a scientific community were expected to make our own priorities within our budget, rather than expect increased funding!

The Organising Committee which met immediately after the conference was of the view that the talks had been of a high standard, were engaging and offered a good mix of information and discussion on research, education and management.

David Arrowsmith, 20/04/2012

V4