

School of Mathematics, Applied Mathematics & Statistics

Incorporating the following:

Department of Applied Mathematics
Department of Mathematics
Department of Statistics
Boole Centre for Research in Informatics
Statistical Laboratory Consultancy Unit

Peer Review Group

Professor E. Cahill, Department of Accounting, Finance & Information Systems, UCC
(Chair)
Professor C. J. Sreenan, Department of Computer Science, UCC
Professor P. Boland, Department of Statistics, University College Dublin
Professor M. Dodson, Department of Mathematics, University of York, UK
Professor R. O'Malley, Department of Applied Mathematics, University of
Washington,
USA

Brief Description of conduct of site visit

The site visit was conducted over 2.5 days from 10th – 12th March 2004 and included meetings with

- i) Head and staff of the department as a group and individually
- ii) Representatives of undergraduate and postgraduate students
- iii) Representatives of employers, past graduates and other external stakeholders
- iv) Professor Áine Hyland, Vice-President
- v) Professor J. Kevin Collins, Vice-President for Research Policy & Support
- vi) Professor M. Peter Kennedy, Dean, Faculty of Engineering
- vii) Professor David Cox, Dean, Faculty of Arts
- viii) Professor Paul Giller, Dean, Faculty of Science
- ix) Ms. Carmel Cotter, Finance Office

and visits to departmental and library facilities in UCC.

An exit presentation of the principal findings of the Peer Review Group was made to staff of the department in the afternoon of the second day.

Description of School of Mathematics, Applied Mathematics & Statistics

Head of School: Dr. James Grannell

No. of Staff: 20 permanent academic, 3 administrative, 1 systems administrative + some part-time academic staff

Location of School: Áras na Laoi

Degrees/Diplomas offered: BA, MA, BSc, MSc, PhD

No. of Students: Department has 541 Student FTEs: 499 UG and 42 PG FTEs distributed as follows:

Year 1	Year 2	Year 3	Year 4	Evening Courses	JYA	Socrates	Total U/G	H Dip	Master Taught	Master Research	PhD	Total P/G
246	174	62	9	4	2	1	499	22	4	8	8	42

Mission Statement

“The primary mission of the School is to provide high quality education in Mathematics, Applied Mathematics and Statistics and to carry out research to the highest international standards in a spirit of community and professional service. Our tradition of excellence dates back to George Boole (1815-1865), the first Professor of Mathematics at UCC.”

General Comment on Quality Review

The Self Assessment Report was voluminous and detailed but contained so much information that the main features of the School's performance were not easy to discern. It was also admitted not to be complete as a number of staff profiles were missing. The BCRI Report was submitted separately, and was in general comprehensive, but lacked financial details. Important metrics such as the School budget, research income, a list of publications, age profile, syllabi and workload, crucial to the assessment, were either time-consuming to extract or missing altogether. The initial absence of this information affected the progress of the assessment by the PRG.

The PRG found the summaries of the various questionnaires to be objective and very useful. While the BCRI were profiled in a separate report, we were surprised that such a significant research development received relatively little mention in the report of the School. Similarly, the PRG was very surprised that the two issues that dominated many discussions with staff in the School received little mention in the report – the issue of the School structure and operation, and that of the promised Senior Lectureship in Applied Mathematics.

The Self-Assessment Report opened with a long list of action items that have been agreed by the School. This demonstrated the wide range of activities across the School, and the degree of contemplation that the School have given to their immediate and longer-term future. However, the list was lengthy, and ranged from very significant items such as planning for a new building and new programmes, to relatively minor issues of policy, and several statements that were sufficiently vague to lack any real impact. The list would have been more useful to the PRG if it had been focused and prioritised. The reviewers chose to focus on the major and significant action issues. The reviewers noted that some of the action items were not adequately supported, although in some cases supporting evidence was discovered.

The PRG felt that the report was most lacking in relation to research, and was disappointed not to see summary information relating to the School's research themes, activity, achievements and directions.

While it was very clear that a detailed SWOT exercise was carried out, the report did not contain a synthesis of the result. In particular the emphasis appeared to be on strengths and weaknesses; the opportunities and threats areas of the analysis have not been addressed in the main body of the report. There was considerable attention paid to the outcome of the exercise and the directions to follow as a result. The results of the SWOT exercise are clearly very much in line with the thinking of the School.

Full and future development of the School is an opportunity that has not been fully expressed and developed in their report. For example, the PRG felt there are more opportunities for future teaching and research collaboration in diverse areas. The PRG considered the current *modus operandi* of the School as a serious threat to the full realisation of the School's potential. Other than the above the reviewers believed the School had carried out a thoughtful and wide-ranging SWOT review.

Overall the PRG was satisfied with the benchmarking exercise. The School adopted the accepted approach of a quantitative comparison with five carefully chosen UK universities. The choice was sensible and appropriate and provided some valuable information. The relatively high dependence that the UCC School has on part-time and temporary staff is clearly a striking and somewhat worrying difference arising from the exercise – and one that must be carefully addressed in the near future for the School. The exercise revealed that the School compares favourably with research output. However, although the PRG believed that the quality of research being produced in the School is high, the numerically based arguments were not completely convincing on their own. The PRG recognised the difficulties in assessing quality by the usual metric criteria such as the number of publications, research income, etc. To meet this, some good indicators of the quality of research in the School were given by successes in recent Enterprise Ireland and SFI competitions. But a brief survey of the salient features of the School's research and achievements to give a flavour of its activities would have been appreciated (and would have been of benefit to the School as a whole). The benchmarking exercise also highlights the relatively high student-staff ratio in the School compared to the 5 UK Schools.

Specific Recommendations for Improvement

Consideration by the Quality Promotion Committee of the recommendations for improvement had been deferred following the review in order to allow the School to re-consider its structure and management arrangements. This has now happened and the Quality Promotion Committee revisited the report of the reviewers on the quality review of the School during 2005 and has responded in detail to all of the recommendations as below. The School in the meantime has been working to implement many of the recommendations and some indication of this is given in the following table.

Abbreviations

PRG: Peer Review Group

QPC: Quality Promotion Committee

SEFS: Science, Engineering & Food Science

VP: Vice-President

HR: Human Resources

UMG: University Management Group

Recommendation of PRG	Recommendation of QPC following consultation with the School
<p><u>School organisation and planning:</u></p> <ul style="list-style-type: none"> • That senior members of UCC and the School clarify questions of hierarchy, representation and visibility as a matter of urgency; and further that the treatment, performance and morale of the School are not undermined by a lack of information and comprehension amongst those with administrative responsibility. • That mechanisms to achieve efficiency in administration and bureaucracy be sought as a priority. 	<p>Endorsed.</p> <p>The QPC noted that the budget is devolved to the Head of School who has full authority to distribute it within the School. The QPC strongly endorsed the recommendation that the current structure within the School be re-visited and re-formalised. All support service units within the University should liaise and do business with the School through the Head of School, and not with individual Heads of Departments within the School.</p> <p>The QPC noted the improvement in integration of administrative support within the School and recommended that efforts to increase efficiency in administration should continue to be made. The QPC strongly recommended that the Headship of</p>

Recommendation of PRG	Recommendation of QPC following consultation with the School
	the School should rotate between senior members of the School.
<p><u>Staffing</u></p> <ul style="list-style-type: none"> • That the four vacancies which will be created by retirements be filled at Lectureship level. • That the positions of Associate Professorship in Financial Mathematics and a Lectureship in Statistics (Actuarial Science), which have been approved by the University, be filled. • That the Senior Lecturer position in Applied Mathematics, referred to in the advertisement for the Professorship of Applied Mathematics be filled by UCC as a matter of the highest priority. • That UCC grant the School a new Lectureship in Mathematics, to replace an Associate Professor in the Department of Mathematics due to retire later this year. • That the School should encourage female applicants for academic posts as much as possible. 	<p>The QPC noted that a number of posts had been filled in the School since the review, including the AP in Financial Mathematics.</p> <p>The QPC noted that recommendations for the filling of posts need to be brought forward to the Head of the College of Science, Engineering & Food Science for approval.</p>
<p>That consideration be given to reducing the high dependence of the School on part-time and temporary staff with a move towards more full-time and permanent staff.</p>	<p>Strongly endorsed.</p> <p>The QPC noted that significant efforts have been made to implement this recommendation and that the dependence on part-time staff has been reduced.</p>
<p><u>Degree Programmes</u></p> <ul style="list-style-type: none"> • That the School seek to consolidate existing programmes and to develop new ones with Computer Science and the Biosciences. • That the School should conduct a thorough review of its offered modules with a view to rationalisation – reducing the amount of staff time committed to existing undergraduate programmes - with a view to developing new programmes, including those at taught postgraduate level. • That the practice of overlapping the 	<p>Strongly endorsed.</p> <p>The QPC noted that progress has been made in implementing this recommendation since the review. New programmes have been developed with Computer Science and Biosciences,</p> <p>The QPC strongly endorsed the recommendation on rationalisation of modules and would encourage the School to continue its efforts in this area.</p>

Recommendation of PRG	Recommendation of QPC following consultation with the School
teaching of several different modules, so that in practice the number of students in lectures is the sum of all the students for the modules concerned, be eliminated.	
<p><u>Statistical Laboratory Consultancy Unit</u></p> <ul style="list-style-type: none"> • That the situation whereby the Statistical Laboratory Consultancy Unit is managed by an Acting Director, whose position must be re-affirmed each year, be remedied immediately. • That the position of the Statistical Laboratory Consultancy Unit with respect to the School be formally clarified in view of the School's remit. This process of clarification should also regularise the budgetary and staffing arrangements of the Statistical Laboratory Consultancy Unit vis-à-vis those of the School. It is recommended that UCC also consider the nature of the position of Director in relation to the dual administrative and academic roles (impacting on the School, UCC in general, and the community at large). 	<p>The QPC noted the lack of identity of the Unit and that the Unit has had an Acting Director for the past ten years. The QPC noted that the Unit is funded through the Faculty of Science and is viewed as being an independent unit. The QPC referred this recommendation to the Acting Head of the College of Science, Engineering & Food Science for consideration and decisions on actions to be taken to resolve the present situation. The QPC recommended that the Acting Head of College discuss the status of the Unit and its staff with the Director of HR.</p>
That the School adopt a shorter title.	Strongly endorsed.
That UCC conduct a review of the level of administrative staffing and the level of technical staffing in the School, and if necessary appoint additional staff to ensure that the School is in line with the established UCC norms.	<p>Not endorsed.</p> <p>The QPC commented that a review of administrative support across all the Faculties and academic units has been carried out and that the level of administrative support within the School is within University norms.</p>
That UCC purchase site licences for the one or two specialised mathematical software packages predominantly used by the students of the School and have them made available on all 'open-access' computers.	<p>Endorsed</p> <p>The QPC noted that this recommendation has already been implemented.</p> <p>With respect to the comment by the School the QPC recommended that the School discuss possibilities of sharing computing facilities with the Department of Computer Science.</p>
That UCC act quickly to complete all essential maintenance (leaking roofs, faulty	Endorsed.

Recommendation of PRG	Recommendation of QPC following consultation with the School
air conditioning systems, etc.).	QPC noted the efforts of the Office of Buildings & Estates to maintain all buildings appropriately.
That the School be given top priority for addressing its needs for maximising contiguous office space and providing additional space for researchers and postgraduates.	The QPC supported the recommendation in the context of the new IT Building for which planning is currently underway. The QPC endorsed in particular the recommendation in relation to the need to provide adequate facilities for postgraduate students and researchers.
That consideration be given to the size and location of lecture theatres that the School teaches in.	Endorsed. See comment to recommendation above
That the School takes steps to promote the strengths of the activities of the School and to become more visible within UCC and the external community. The School website needs to be upgraded significantly, especially in regard to highlighting research strengths and opportunities for collaboration.	Endorsed. QPC referred School to new UCC website and the Content Management System in place.
That the School should compile and maintain a good database of its former students.	Endorsed.
That School/Student committees be established along with the formulation of a policy on staff availability, as suggested in the Self Assessment Report.	Endorsed. QPC welcomed action taken by School, noting that Undergraduate and Postgraduate Staff/Student Committees have already been established.
That the anonymous student surveys used by many staff of the School be used in each module taught by the School.	Strongly endorsed.
That the issue of poor attendance at lectures be considered at the highest levels in the University.	Noted. The QPC also noted that the issue is under discussion at School and College level.