



**UCC**

Coláiste na hOllscoile Corcaigh, Éire  
University College Cork, Ireland

**UNIVERSITY COLLEGE CORK  
NATIONAL UNIVERSITY OF IRELAND, CORK**

**QUALITY IMPROVEMENT/QUALITY ASSURANCE**

**SCHOOL OF MATHEMATICAL SCIENCES**

**PEER REVIEW GROUP REPORT**

***ACADEMIC YEAR 2011/12***

**Date: 2<sup>nd</sup> May 2012**

## **ABBREVIATIONS**

FMAS:	Financial Mathematics and Actuarial Science
HEA:	Higher Education Authority
IRCSET:	Irish Research Council for Science, Engineering and Technology
RAM:	Resource Allocation Model
PRG:	Peer Review Group
RQR:	Research Quality Review
SAR:	Self-Assessment Report
SEFS:	College of Science, Engineering and Food Science
SFI:	Science Foundation Ireland
SWOT:	Strengths, Weaknesses, Opportunities and Threats
UCC:	University College Cork

## PEER REVIEW GROUP MEMBERS

Name	Position/Discipline	Institution
Professor David Applebaum ( <i>Chair</i> )	School of Mathematics & Statistics	University of Sheffield
Professor Adrian Bowman	School of Mathematics & Statistics	University of Glasgow
Dr Edward Cox ( <i>Rapporteur</i> )	School of Mathematical Sciences	University College Dublin
Professor David Elworthy	Mathematics Institute	University of Warwick
Dr Seamus O'Reilly ( <i>Rapporteur</i> )	Department of Food Business & Development	University College Cork
Dr Ruth Ramsay	School of Biological, Earth & Environmental Sciences	University College Cork

## TIMETABLE OF THE SITE VISIT

The Peer Review Group (PRG) thanks the Quality Promotion Unit for the efficient organisation of all aspects of the review including the site visit. The timetable was appropriate for the requirements of the peer review visit. The timetable is attached as Appendix A.

## PEER REVIEW

### Methodology

The PRG reviewed the Self-Assessment Report (SAR) prepared by the School and met with members of staff both individually and collectively. The Group also met the relevant University Officers as detailed in the timetable.

The School provided a comprehensive Self-Assessment Report in advance of the site visit. Some additional documentation was requested and was supplied by the School without delay during the site visit.

The following additional documents were reviewed during the site visit:

- Undergraduate and postgraduate survey results

- External Examiner reports
- Results of the survey of students
- Department module timetables
- Table listing modules and student numbers
- Staff request sent to Head of SEFS
- College of SEFS RAM Overview
- Research activity briefing document (provided by the Office of Vice President for Research and Innovation).

### **Primary responsibility of each member of the Peer Review Group.**

Professor David Applebaum was appointed as Chair, and Dr Seamus O'Reilly and Dr Edward Cox served as rapporteurs. The members of the PRG divided for some elements of the site visit, as indicated in the timetable (Appendix A).

### **Site Visit**

The site visit was well organised and gave the Peer Review Group a comprehensive overview of the School's excellent facilities. Interaction, responsiveness and hospitality of both the Quality Promotion Unit and the staff of the School of Mathematical Sciences were of a high standard and appreciated by the PRG.

### **Peer Review Group Report**

Findings from the various meetings were exchanged during discussion sessions on-site. An outline report, including main recommendations, of the PRG was prepared during the site visit. The rapporteurs drafted a report that incorporated the PRG deliberations during the site visit and circulated this to all members. Members contributed to this draft in an iterative fashion and a final draft was circulated to all. All members of the PRG agreed with the findings contained in the report and the final recommendations.

## **OVERALL ANALYSIS**

### **Self-Assessment Report (SAR)**

The School provided a SAR which was honest in its assessment of the present position of the School. Inclusion of the School's submission to the 2009 UCC Research Quality Review (RQR) exercise and the report from the RQR Panel was of considerable assistance to the

PRG in its assessment of the School's research activity. As detailed above, a number of additional documents were requested to supplement the material summarised in the SAR. The report describes a research active school with dedicated lecturers and administrative staff. However, the School also faces a number of significant challenges – these challenges revolve around staffing and organisation. The PRG recommends strongly that the School continues the discussions that led to the formation of the report and clarifies a strategy and vision for the future that can be collectively owned. Every effort to do this should be encouraged and supported. As mentioned in the SAR the recommendations from the School for the future have not yet been prioritised and this should form at least part of the discussion.

### **SWOT Analysis**

It is clear that a full and comprehensive SWOT analysis has been carried out. This has yielded a good overview of the factors that have impacted on the operation of the School. It has also indicated the opportunities that exist for the School going forward. From review of the material available to the Group and from its meetings with members of staff, the PRG broadly concurs with the SWOT analysis.

The staff in the School face the following major challenges due to staff retirements and most recently the sad and premature death of Prof Alexei Pokrovskii (Head of Applied Mathematics): (i) a resource demanding suite of courses delivered across all of the Colleges of the University at both undergraduate and postgraduate level; (ii) organisational changes in UCC; (iii) leadership within the school – the School had significant periods without a School Head and currently has no Head of Applied Mathematics; and (iv) lack of development of roles and responsibilities within a school framework. The staff however have a strong commitment to and pride in their work and the PRG notes that the reputation of the School has been built on a long history of high calibre education and research. This is a major strength that should be built upon. The PRG also recognises the weaknesses identified in the SAR and in particular the SWOT analysis. Major weaknesses that need to be addressed revolve around the staffing shortage and consequent over reliance on part-time staff, communication/engagement/ownership/related issues within the School and the need for a planned coherent strategy that is integrated into a SEFS College plan and, more broadly, the strategic plans of UCC as a whole needs to be agreed and implemented.

The SWOT analysis identifies challenges posed by reduced funding mechanisms and the PRG also recognises the difficulties that this creates but would encourage the School to actively pursue both national and EU funding opportunities.

The listed comments in the SWOT analysis were broadly reflected in discussions with staff and the needs/recommendations section of the SWOT analysis provided a useful summary of major issues. The PRG in discussion with staff has identified the following as key comments in the SWOT analysis and endorses the following findings of the School:

### Strengths

- Quality and dedication of Staff.
- Research which is of high quality with significant national and international impact, involving some collaborations with eminent researchers.
- The education programmes in the School attract high achieving students. The PRG was impressed on meeting a number of these students by their enthusiasm and interest.
- Many of the programmes have strong student uptake, for example the PRG met with students and the staff committee from the Financial Mathematics and Actuarial Science (FMAS) programme and was impressed with their enthusiasm and commitment.

### Weaknesses

- Staffing issues revolving around loss of senior staff and the use of a high proportion of part-time staff makes it difficult to develop 'critical mass' in research, form a cohesive school identity, and attract PhD students. The PRG group wishes to emphasise that it met with a number of part-time staff and was impressed by the calibre of staff involved, many of whom had extensive teaching experience. The students would have been well taught by the staff the PRG met.
- There are communication 'disconnects' both vertically between the College of SEFS and the School of Mathematical Sciences and horizontally within the School. This was identified in the SWOT analysis and voiced in PRG discussions in terms of uncertainty about future directions.

## Opportunities

- In identifying with a national strategy to increase international students the School sees opportunities in the roll-out of new taught postgraduate programmes (e.g. Higher Diploma in Mathematical and Statistical Risk Modelling, Financial Mathematics and Actuarial Science) The PRG in encouraging this would also suggest a module review that examines likely reconfiguration of existing module offerings with a view to developing further postgraduate programmes (possibly in collaboration with other schools). The PRG would see this as a possible mechanism for increasing international PhD student numbers. The academic argument is about building a stronger, more vibrant research community. The financial argument is the inflow of non-exchequer funds to the School.
- Building existing and developing new research linkages within UCC and also extending the collaborations both nationally and internationally.

## Threats

- The major threat to the School is perceived in terms of permanent staff shortages. There is a continuing trend in decreased research funding and a moratorium on staff appointments.

## **Benchmarking**

The School chose to benchmark against:

1. School of Mathematical and Computer Science, University of Herriot -Watt
2. School of Mathematics, Statistics and Actuarial Science, University of Kent
3. Mathematical Institut, University of Leiden
4. Mathematical Sciences, University of Missoula, Montana
5. Mathematical Sciences, University of Texas.

This is in contrast to the previous review where 5 UK universities were chosen. Benchmarking is always difficult to do. However the School has carried this out successfully and suitable institutes were chosen for comparison. The taught postgraduate programmes comparison mainly focuses around financial/actuarial discipline and a more comprehensive comparison across some of the other discipline areas would have been valuable.

Comparison with research quality is based on the RQR carried out in 2008/9. With a number of senior staff leaving after this date the conclusions reached may not continue to hold.

However, the PRG wishes to emphasise that the School has a number of outstanding researchers with international impact.

There is a clear message from the benchmarking that no comparable School has the staff profile that currently is operational in UCC.

## **FINDINGS OF THE PEER REVIEW GROUP**

### **School Organisation**

The School consists of 20.5 academic staff, three fulltime researchers, a systems administration manager, a senior demonstrator and four administrative staff and is located in the College of Science, Engineering and Food Science (SEFS). The School has three departments: Mathematics, Applied Mathematics and Statistics. The School offers a range of undergraduate and postgraduate programmes and its staff are actively engaged in research and scholarly activity across the mathematics, applied mathematics and statistics disciplines. Specific observations and recommendations on: research and scholarly activity, teaching and learning, and management and planning are presented in the following sections of the report.

The disciplines of Mathematics, Applied Mathematics and Statistics have made a substantial contribution to University College Cork down through the years. The PRG was struck by the contribution of these disciplines to a range of teaching programmes and activities across the University. The provision of modules across all four Colleges in the University is a distinguishing feature of the school. The current environment highlights the essential role that such fundamental disciplines play in University education, research and broader economic and societal well-being. Thus the PRG urges the University to recognise the contribution of these fundamental disciplines.

### **Teaching & Learning**

The PRG met with students and employers, and also had an opportunity to review the reports from external examiners. For 2010-11 there were 5 external examiners covering different streams of the main programmes: Actuarial Science, Applied Mathematics, Mathematics, Statistics, Financial Mathematics, and the BSc degrees in Mathematical Sciences and in Financial Mathematics & Actuarial science. Their reports were generally satisfactory though



some concerns were raised last year about the marks for four applied mathematics modules. There was strong praise for the commitment of the staff to the education of their students, and for the quality and the level of challenge of the programmes. There was special praise for the contributions that retired staff had made to teaching and even developing some of the modules. However the difficult staffing situation was mentioned as a serious problem with demoralisation of the existing staff a cause for concern.

Two concrete recommendations were made last year. One, in Applied Maths, was to give earlier feedback on the students' assessed work. Another, by the Statistics examiner, was that consideration should be given to merging some of the modules. In earlier years other examiners had suggested that the workload on staff could be cut by a rationalisation of the exams. It had also been suggested that the fact that the grading system was under the control of the College rather than the School was detrimental to effective examining.

It was clear to the PRG that students in the School of Mathematical Sciences receive a high quality education from hardworking and committed staff. The School attracts some of the top students entering the University. As indicated above it also provides significant service teaching across the University. The delivery of this quantity and quality of teaching is threatened by low numbers of full time staff now attached to the School. Urgent steps need to be taken by the University and the College of SEFS, in discussion with the School, to progress essential permanent appointments (this is addressed further below).

The PRG was concerned that the number of students graduating in flagship programmes of the School – in particular the BSc in Mathematical Sciences - has been falling systematically in recent years. The School should also consider enhancing the transferable skills component of these programmes and liaise more closely with the Careers Office. In the case of the latter there appears to be an abundance of advice on careers in the finance area with less emphasis on other areas.

### **Research & Scholarly Activity**

The School produces high quality peer reviewed research across the spectrum of Mathematics, Applied Mathematics and Statistics. In the RQR carried out in 2009 it achieved

a grade of 4 out of 5 which locates it as one of the top research schools in the SEFS College. The School has in the past attracted significant research funding from SFI through the Research Frontiers Programme, IRCSET Scholarships etc. This funding has diminished in recent years, which may reflect the more targeted funding opportunities available that are not readily identified with Mathematical Sciences and in particular pure mathematics, it may also reflect the retirement (and unfortunately death) of senior researchers. The PRG encourages the applied mathematicians and statisticians to consider emerging opportunities in areas such as health (e.g. building on current work in biostatistics), finance (e.g. building on expertise in financial maths and actuarial science), physics (e.g. building on links with the Tyndall research centre), and biology (e.g. building on links with the School of Biological, Earth & Environmental Sciences). The PRG also urges the School to consider opportunities to collaborate at national and international levels in research fields that are supported by various funding bodies. It is important to appreciate that in the present climate it is very difficult, if not impossible, to get research funding for Pure Mathematics from the usual sources. The PRG considers that some modest financial assistance to enable the excellent group of pure mathematicians maintain their research activity is essential.

The PRG is concerned that staffing uncertainty and high teaching loads have impacted on the research endeavour of the school. The PRG recommends that a small fund be established in the school to support a seminar programme through funding of invited speakers. The fund could also provide seed funding for new research initiatives and support conference attendance. Given the low availability of research funding for pure mathematics this discipline could be given priority. The Head of School could administer this fund acting on advice of the relevant Head of Department.

### **Governance**

The School is led by a Head of School. An executive committee comprising the Heads of the three Departments and the School Administrator deal with budgetary, financial, planning and strategy issues. With currently no Head of Applied Mathematics, the Head of School liaises with senior staff in Applied Mathematics. A School Committee comprising all full time staff with contracts beyond 3 years and School Administrative staff exists to deal with all academic matters and substantive matters arising.

Currently there is no representative from the Department of Applied Mathematics on the School Executive committee. This should not continue and a representative should be identified pending the appointment of a Professor of Applied Mathematics. The School Executive should meet regularly and the substantive decisions and discussions communicated to the school.

### **Staffing and Staff Development**

In addition to the 20.5 permanent academic staff the school engage 25 Hourly Occasional Staff in lieu of vacant academic posts. This staffing model with such a high dependence on part time staff cannot carry on if the School of Mathematical Sciences is to continue as a vibrant teaching and research active entity. The Review Group recommends a number of actions:

1. **Develop a strategic plan for targeted recruitment over the next three years.** This plan should ensure maintenance of the delivery of key undergraduate and postgraduate teaching programmes. The Review Group found the Self Assessment Report lacking a research led operational strategy for the hiring of staff. This should include a clarification of:
  - i. 'Gaps' in current and emerging teaching programmes<sup>1</sup>.
  - ii. Engagement with College and University Research Strategy and key Research Institutes.
  - iii. Research areas where critical research 'mass' is desired.
2. **Timely appointment of new Head of School.** Given the pending retirement of the current Head of School the PRG think it prudent that the new Head be appointed six months before the retirement date so that there can be a hand-over period when the new Head of School can shadow the present one.
3. **Strategic review of modules taught.** An important task for the new teaching strategy committee (referred to below) is to undertake a detailed programme review, from a strategic perspective. The school needs to be able to argue for the strategic use of staff resources. The PRG strongly believes that Mathematical Science courses underpin many programmes in science, engineering, business and the human sciences. Staff who have rigorous training in the subject and use the

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<sup>1</sup> In considering thus the value of modules taught, for example, do they underpin key programmes? provide essential skills in supported programmes outside of the school? etc.

methods being taught in their research best achieve the effective teaching on Mathematical Science courses. The commitment of the school to high quality 'service courses' requires active College and broader University support and protection.

4. The PRG are concerned by the reported lack of engagement by HR in the issuing of contracts to 'hourly occasional' staff. Given the possible implications for 'contracts of indefinite duration' we recommend that all such contracts should be signed-off by HR before being issued and that HR should keep records on all such staff employed.
5. Given reinvigoration of School committees, and in particular, a functioning Executive Management committee, appropriate attention should be given to staff development and with regular review cycles. This would facilitate, *inter alia*, the engagement of the staff with the School structures and thus improve communication within the school.
6. The role of the Senior Demonstrator should be reviewed, and in doing so consideration should be given to consolidating responsibility for assigning tutors and timetabling.

## **Communications**

### University Central Management

Communication with central management should be enhanced. For example, the PRG were surprised that there is no mention of Mathematics in the research section of the SEFS strategic plan or at University level, despite the indisputable excellence of research being carried out in all three areas of the school: pure mathematics, applied mathematics and statistics. Given that the College structure (referred to below) is currently the main conduit for communication with central management, implementation of the recommendations below should improve overall communication both within the School and outward to College and University levels.

### College

The University has been engaged in a process of restructuring in response to evolving Government policy and international trends in higher education. Part of this restructuring has involved the formation of Colleges –as indicated above the School of Mathematical Sciences

is located in SEFS. In times of restructuring and in the context of diminishing resources communication is paramount. The PRG is concerned at communication fractures between school and college and this should be addressed with urgency by both parties. The PRG has suggested a stronger equivalence between school and college committee structures (see below) and the development of a school strategic plan. The PRG also recommends that the Head of College visits the School to address common concerns and to communicate his vision of the role of the School within the strategic development of the College.

### School

A weakness identified by school staff relates to school structure and internal communication. The PRG agrees with this and it was a matter of concern for the Group. Communication within the School needs to be addressed and staff need to increasingly operate with a dual identity of both discipline (reflected in the department label) and school. A closer look would suggest that some significant cross-discipline committees should be formed within the school to enhance the activities of the school consistent with its mission statement. In doing so a stronger sense of shared ownership and leadership would we believe be built. The PRG also recommends a greater correspondence between the existing college committees and structures and those within the school. This addresses a second weakness identified by the PRG namely the need for effective two-way communication between the College and School. An obvious recommendation is that the Chair of the school committee would be the school representative on the equivalent college committee. For example: the College Teaching and Learning Committee and the College Graduate Studies Committee should have equivalent school committees.

Meetings of the School Assembly should be regularised so that they are not perceived as responding to a particular crisis. They should provide opportunity for school committees and the executive to report to the school and receive feedback from the School.

### Students

The undergraduate survey provided useful information on improving communication and some of the ideas should be considered worth acting on. This has been identified as one of the recommendations from the School. The PRG met with students from various programmes and was impressed by their enthusiasm and their positive experience of the school.

## **Financing**

Discussion on financing is framed by a national restriction on staffing levels introduced to the higher education system in 2009 through which the number of staff across the sector has decreased by 7%. At the same time, staff salaries have been reduced and student numbers have increased by 15%. The Employment Control Framework for the Higher Education Sector applies a ceiling to core-funded staff posts, set by the Higher Education Authority (HEA) for each institution. The University uses a resource allocation model (RAM) to 'reward efficiency, effectiveness and best practice'. The School has two main sources of funding: education funding (HEA) and student fees (undergraduates (non-EU) and postgraduates). The funding allocated to the school through the Resource Allocation Model is used however to provide moderation to support deficit running schools in the College. The School carries out extensive 'service teaching' outside of the College of SEFS. Many of these courses are highly valued core modules. Funds from these service courses are also lost to the School through moderation mechanisms.

In discussion with the School concerns were strongly expressed that the resource model in delivery was not rewarding 'efficiency, effectiveness and best practice'. The Review Group sought to clarify this position and then secondly to understand the mechanisms for enabling planned growth in the both short and long-term. The PRG believes that the strategic plan for the School should be developed in the context of significant discussion with the College of SEFS leading to an agreed way forward.

Given the funding constraints, the PRG recommends that all avenues for future development and improvement of the funding situation are explored. The PRG identifies the following as areas for particular focus:

1. **Taught Masters/Structured PhD programmes.** The PRG are cognisant of on-going and future reductions in exchequer funding, which will impact in the future. The school needs to develop postgraduate programmes and expand non-EU undergraduate recruitment, to reduce reliance on exchequer income. We recognise that the school has taken initiatives in this area and the Higher Diploma in Mathematical and Statistical Risk Modelling is well placed to attract non-EU students. The SAR report alludes to other opportunities including the postgraduate development of the Financial

Mathematics and Actuarial Science programme and we would encourage the school in this endeavour.

However, there needs to be greater clarity and indeed changes to the University resource model which would incentivise the pursuit of non-exchequer income.

2. **International programme in China.** The PRG are unconvinced of the **current** academic and business principles on which the proposed delivery of UCC-accredited degrees in China is based. This requires further attention and we also urge consideration of other options and opportunities, such as Chinese and other non-EU students taking existing courses on campus.

### **Accommodation & Services**

The School is accommodated in the newly built Western Gateway Building. The PRG were very impressed with the facility and in particular the lecture rooms and computer labs. Undergraduate and graduate studies particularly in applied mathematics and statistics increasingly require open access to computer laboratories for course work. The facilities have enabled computationally innovative courses to be developed by the school. The PRG noted the positive comments in the SAR and from staff and students on the standard of accommodation and laboratory facilities available to the School.

### **External Relations**

The School has an admirable list of contacts with universities and industry, as well as links with other disciplines within UCC. These links are in the main reflected in the research collaborations engaged in by the School.

The School provided evidence in the SAR of an active outreach programme to prospective students both undergraduate and graduate. Students that the PRG met talked about the 'Mathematics Enrichment' classes they attended while at secondary school as the reason they came to UCC. During the site visit the School made available their publicity leaflets and they were attractive and informative. However, the school website is poor and this needs to be addressed with some urgency.

## **Implementation of recommendations for improvements made in Peer Review Group arising from last quality review**

School Organisation: For a significant period of time the School was without a Head and this has impacted on implementation of organisational improvements suggested by the previous PRG. **The School has not felt able to implement the organisational changes suggested, to date.**

Academic Staffing: The School claims it was able to create and fill the posts recommended by the PRG in 2004. However it has since returned to a strong dependency on part time staff once again.

Degree Programmes: The School proceeded with a process of rationalisation and development of new programmes.

Statistical Lab Consultancy Unit: The position and future of the Statistical Lab. Consultancy Unit remains unclear. The PRG is of the opinion that it should continue to be an identifiable unit within the School pending fresh developments. A unit of this type has the potential to considerably enhance the profile of the School and to generate cross-discipline funding sources. It is important that the unit remains associated with the School so that development opportunities can be pursued when more general staffing levels have improved.

Progress on a variety of other matters has indeed occurred including the name change and move to the new building.

## **RECOMMENDATIONS FOR IMPROVEMENT**

### **Recommendations for improvement made by the School**

The recommendations for improvement suggested by the Quality Review Coordinating Committee are all very valid ideas. They do need to be prioritized and resourced. The main issue that the School has identified for urgent action is the current staff shortage and the PRG strongly agrees with this.



### **Main recommendations for improvement made by PRG:**

1. The PRG recognises that staffing in the School has reached a crisis, in that the current operation of the School is unsustainable. This must be addressed. The School needs to develop a strategic plan for targeted recruitment of staff over the next three years. This plan should ensure maintenance of the delivery of key undergraduate and postgraduate teaching programmes. Bearing in mind the difficult economic situation we emphasise the need for the university to create new permanent positions within the school in each of the academic years 2011-12, 2012-13 and 2013-14 after which staffing needs should be reviewed again. The untimely death of the former Head of Applied Mathematics has created a leadership vacuum in that Department. The PRG has discussed a number of alternatives, but after due deliberation, the PRG recommends the appointment of a Chair of Applied Mathematics, who would provide leadership to the group. In the absence of a Chair, if Applied Mathematics wish to preserve a distinct identity, then a representative from this group needs to be identified who will serve on the School Executive.
2. The PRG recommends greater delegation of responsibility from the Head of School to groups, as well as individuals, which needs to be coupled with wider communication within a culture of inclusivity. The FMAS committee provides an example of good practice in this area. There needs to be greater correspondence between the existing College-level committees and structures within the School, so that there is effective two-way flow of information. The PRG recommends establishing a new committee to develop and oversee teaching strategy throughout the School, while recognising the diversity of styles associated with the different disciplines. The chair should be the school representative on the equivalent College committee.
3. An important task for the new teaching strategy committee is to undertake regular programme reviews, from a strategic perspective.
4. The PRG is cognisant of on-going and future reductions in exchequer funding, which will impact in the future. The School needs to develop postgraduate programmes and expand non-EU undergraduate recruitment, to reduce reliance on exchequer income. However, there needs to be greater clarity and changes to the University resource model which would incentivise the pursuit of non-exchequer income.

5. The PRG is unconvinced of the current academic and business principles on which the proposed delivery of UCC-accredited degrees in China is based. This requires further attention and the PRG urges consideration of other options and opportunities, such as Chinese and other non-EU students taking existing courses on campus.
6. The PRG regards it as unacceptable that some staff have to fund their attendance at conferences from personal income. Funding must be made available for staff to attend key conferences and to invite visiting seminar speakers to UCC.
7. PhD students are fundamental to the mission of a research-active school. All opportunities should be pursued to find funding, at school, college, university, national and international levels.

**Supporting recommendations for improvement made by PRG:**

8. Enhance the transferable skills component of undergraduate programmes and liaise more closely with the Careers Office.
9. Foster further development of interdisciplinary research within UCC, nationally and internationally that could benefit from various funding agencies.
10. The role of the Senior Demonstrator should be reviewed, in doing so consideration should be given to consolidating responsibility for assigning tutors and timetabling.

## Appendix A

### SCHOOL OF MATHEMATICAL SCIENCES

#### PEER REVIEW GROUP SITE VISIT TIMETABLE

##### In Summary

- Tuesday 20 March: The Peer Review Group (PRG) arrives at the River Lee Hotel for a briefing from the Quality Promotion Unit, followed by an informal meeting with School staff members.
- Wednesday 21 March: The PRG considers the Self-Assessment Report and meets with School staff, student and stakeholder representatives. A working private dinner is held that evening for the PRG.
- Thursday 22 March: The PRG meets with relevant officers of UCC. An exit presentation is given by the PRG to all members of the School. A working private dinner is held that evening for the PRG in order to finalise the report. This is the final evening of the review.
- Friday 23 March: External PRG members depart.

<b>Tuesday 20 March 2012</b>	
17.00	Meeting of members of the Peer Review Group Briefing by Ms Deirdre O'Brien, Administrative Officer, Quality Promotion Unit and Professor Ken Higgs, Quality Promotion Committee member. Group agrees final work schedule and assignment of tasks for the following 2 days. Views are exchanged and areas to be clarified or explored are identified.
19.00	Informal dinner for members of the Peer Review Group, Head of School of Mathematical Sciences and School staff  <i>School of Mathematical Sciences Staff:</i>  Ms Teresa Buckley, Administrator, School of Mathematical Sciences Dr. James Grannell, Head, School of Mathematical Sciences Professor Bernard Hanzon, Chair of Quality Committee, School of Mathematical Sciences Ms Kathleen O'Sullivan, Dept of Statistics, School of Mathematical Sciences Dr Dima Rachinskii, Dept of Applied Mathematics, School of Mathematical Sciences Dr Stephen Wills, Dept of Mathematics, School of Mathematical Sciences
<b>Wednesday 21 March 2012</b>	
08.30	Convening of Peer Review Group
08.45	Dr James Grannell, Head of School
09.30	Group meeting with all School staff  <i>See Appendix B for staff list</i>
10.30	Tea/coffee

11.00	<p><b>Private meetings with individual staff members</b></p> <p><u>Group 1</u></p> <p><i>Professor Adrian Bowman</i>  <i>Dr Edward Cox</i>  <i>Dr Ruth Ramsay</i></p> <p>11.00: Dr Kieran Mulchrone  11.15: Ms Kathleen O’Sullivan  11.30: Dr Gareth Thomas  11.45: Ms Teresa Buckley, Ms Michelle Glynn, Ms Dympna O’Donovan and Ms Maura O’Leary</p>	<p><b>Private meetings with individual staff members</b></p> <p><u>Group 2</u></p> <p><i>Professor David Applebaum</i>  <i>Professor David Elworthy</i>  <i>Dr Seamus O’Reilly</i></p> <p>11.00: Dr Tony Fitzgerald  11.15: Prof. Bernard Hanzon  11.30: Dr Anca Mustata  11.45: Dr Tom Carroll  12.00: Dr Stephen Wills</p>
12.30	Financial Mathematics and Actuarial Science (FMAS) Committee	
13.00	Professor Finbarr O’Sullivan (individual staff meeting)	
13.15	Mr. Martin Quirke (individual staff meeting)	
13.30	Working lunch	
14.00	Visit to core facilities of School, escorted by Dr James Grannell, Head of School & Mr Paul Keegan, School of Mathematical Sciences	
14.30	Dr James Grannell, Head of School	
15.15	<p><u>Representatives of 3<sup>rd</sup> and 4<sup>th</sup> Year Students</u></p> <p>Eoin Breen, BSc4, Financial Maths &amp; Actuarial Sc  Robert Creagh, BComm3  Maeve Kennedy, BSc3, Financial Maths &amp; Actuarial Sc  Kieran McCarthy, BSc4, Financial Maths &amp; Actuarial Sc  Lorraine Murphy, BA3 (Joint Honours)  Shane O’Callaghan, BSc3 Mathematical Sciences (Joint Honours)  Cormac O’Grady, BSc3, Physics &amp; Math Sc (Joint Honours)</p>	
15.45	<p><u>Representatives of Graduate Students</u></p> <p>Marketa Adamova, MSc1, Math Modelling &amp; Scientific Computing  Francisco Hernandez, PhD2, Statistics  Stephen McCarthy, PhD3, Applied Mathematics  James Neill, MSc1, Math Modelling &amp; Scientific Computing  Conor Sexton, PhD3, Mathematics  Amanda Wall, MSc1, Statistics (Research)</p>	
16.15	<p><u>Representatives of 1<sup>st</sup> and 2<sup>nd</sup> Year Students</u></p> <p>Irene Callnan, BA2, Mathematical Studies  Sorcha Gilroy, BSc2, Mathematical Sciences  Sinead Keane, BSc1, Mathematical Sciences  Ryan McCarthy, BSc1, Mathematical Sciences  Denis O’Leary, BSc2, Financial Maths &amp; Actuarial Science</p>	
17.00	<p><u>Representatives of stakeholders, past graduate and employers</u></p> <p>Ms Mary Byrne, Managing Director, Statistical Solutions Limited  Mr Niall Colfer, Past graduate</p>	

	<p>Mr Rory Conboye, Past graduate  Mr Tony Condon, Mercer  Mr Niall Fitzgerald, Quantitative Analyst, Bord Gáis  Ms Edel Flannery, Central Statistics Office  Mr Andrew Grannell, Past graduate  Mr Colm Kiely, Past graduate  Mr Lorcan MacAnstaoil, Past graduate  Mr Steve MacFeely, Central Statistics Office  Ms Katie O'Brien, Past graduate  Ms Julie O'Donovan, Past graduate  Mr Eoin O'Mahony, Past graduate  Mr Colm Power, Mercer</p>
19.00	Meeting of Peer Review Group to identify remaining aspects to be clarified and to finalise tasks for the following day, followed by a working private dinner.
<b>Thursday 22 March 2012</b>	
08.30	Convening of Peer Review Group
08.45	Professor Paul Giller, Registrar & Senior Vice-President
09.15	Dr Bettie Higgs, representing the Vice-President for Teaching & Learning
09.45	Visit to UCC Library, meeting with Richard Bradfield, Science Librarian, Q+1, Boole Library.
10.45	Tea/coffee
11.00	Dr David O'Connell, Projects Officer, Office of Vice President for Research & Innovation
11.15	Ms Carmel Cotter, Financial Analyst, College of SEFS
11.30	Dr Michael Byrne, Deputy VP for the Student Experience and Head of the Student Health Department
11.45	Professor Patrick Fitzpatrick, Head, College, Science, Engineering & Food Science
12.30	Dr Gregory Temnov (individual staff meeting)
12.45	<u>Part time/occasional staff</u> Mr Liam Floyd Mr Diarmuid O'Riordain Dr Patrick Tuite
13.15	Working lunch
14.00	Preparation of first draft of final report
16.30	Dr James Grannell, Head of School
17.00	Exit presentation to all staff made by the Chair of the Peer Review Group, summarising the principal findings of the Peer Review Group. This presentation is <u>not</u> for discussion at this time.

19.00	Working private dinner for members of the Peer Review Group to complete drafting of report and finalisation of arrangements for completion and submission of final report.
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## Appendix B

### School of Mathematical Sciences Staff List

Post Title	Staff Members
Head of School	Dr James J. Grannell
Professor	Professor Bernard Hanzon Professor Finbarr O'Sullivan
Senior Lecturer	Dr Tom Carroll Dr Tony Fitzgerald (Half-time) Dr Kieran Mulchrone Dr Gareth Thomas
Lecturer	Dr Andreas Amann Mr Damian Conway Dr Michael Cronin Dr Martin Kilian (on LOA) Dr Ben McKay Dr Anca Mustata Dr Andrei Mustata Ms Kathleen O'Sullivan Dr Dmitri Rachinskii Dr Supratik Roy Dr Kingshuk RoyChoudhury (on LOA) Dr Stephen Wills Dr Eric Wolsztynski
Fixed Term Whole-time	Dr Gregory Temnov Ms Linda Daly (replacing Kingshuk who is on LOA) Dr Patrick Browne (replacing M. Kilian who is on LOA)
Administration	Ms Teresa Buckley Ms Michelle Glynn Ms Dympna O'Donovan Ms Maura O'Leary
Systems Administration Manager	Mr Paul Keegan
Researchers	Dr Jian Huang Dr Suzanna Conde Ms Janet O'Sullivan
Senior Demonstrator	Cathal Doherty