

**Department of Chemistry &  
BSc Degree (Chemistry of Pharmaceutical Compounds)**

*Peer Review Group:*

Professor T. Cotter, Department of Biochemistry, UCC (Chair)  
 Professor B. Twomey, Department of Mathematics, UCC  
 Professor H. Vos, School of Chemical Sciences, DCU  
 Professor C. Ramsden, School of Chemistry and Physics, Keele University, UK

*Brief description of conduct of site visit*

The site visit was conducted over 2.5 days from 25<sup>th</sup> to 27<sup>th</sup> March 2002 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 and past graduates
- iv) Representatives of past graduates
- v) Professor B. Harvey, Vice-President for Research Policy & Support
- vi) Professor P. Giller, Dean, Faculty of Science

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 Department of Chemistry**

*Head of Department:* Professor J. Sodeau

*No. of Staff:* 19 academic staff (18 permanent full-time, 1 temporary part-time), 19 technical staff and 5 administrative staff

*Location of Department:* Kane Building

*Degrees/Diplomas offered:* BSc (Chemistry, BSc (Chemistry of Pharmaceutical Compounds, MSc, PhD

*No. of students:* In 2000/01 the Department had 234.24 U/G FTEs and 93.25 P/G FTEs, distributed as follows:

Arts	Engineering	Food Science & Technology	Medicine	Science
11.25	14.50	29.50	5.51	266.73

Year 1	Year 2	Year 3	Year 4	Ev'g	JYA	Total U/G	Diploma	MSc Taught	MSc Research	PhD	Total P/G
118.34	40.00	31.79	42.33	1.44	0.33	<b>234.24</b>	2.67	30.08	11.00	49.50	<b>93.25</b>

*Mission Statement*

“To ensure that both our teaching and research activities are judged as of the highest national academic excellence and that they are competitive at an international level in any external assessment.”

*Aims & Objectives*

- To be the premier centre [in Chemistry] in Ireland
- To take its place in its European ‘top twenty’ comparator group.

## General Comment on Quality Review

The reviewers were in general happy with the content of the self-assessment report which was excellently prepared and fully detailed. The reviewers found that there was strong evidence that the quality and level of undergraduate teaching is very good and that there are excellent staff student interactions. The undergraduate degrees are accredited by the Royal Society of Chemistry. Holders of the BSc degree from UCC can apply for the professional qualification Chartered Chemist (C. Chem.) which is recognised by many European Chemical Societies and professional bodies. The students expressed a wish for industrial placements, which is in agreement with the department's strategic plan. It was evident to the reviewers that the post-graduate programmes operated by the department are successful as evidenced by the high student numbers and their subsequent success at gaining employment. The department was recognised to be research active in all the main areas of chemistry, and this was found to be illustrated by the output of research publications and attraction of significant research funding to support the research activities of the department. The department has ongoing collaborations with several companies and is aiming to strengthen links with the pharmaceutical sector. It was found that the design and layout of most of the laboratories in the department is limiting the department in attracting good undergraduate and research students, and it was recommended that the department and the university work to improve this aspect as soon as possible.

## Progress on Recommendations for Improvement

<b>Recommendation of PRG</b>	<b>Recommendation of QPC</b>	<b>Follow-up Report – Oct. '03</b>
There is strong evidence obtained from staff and students that the quality of teaching is very good and that there are excellent staff student interactions.	QPC welcomed this finding.	-----
The establishment of three-year Headship from senior members of Department in line with College practise.	The QPC endorsed the principles of (1) rotating Headships of <u>3-year</u> duration and (2) of expanding the possibility of senior staff other than full professors taking the Headship. The QPC strongly recommended that active consideration be given to implementation of this recommendation, whilst recognising the rights of the full professors already established in the Department.	The staff of the Department of Chemistry are supportive of this recommendation. Discussions have been held with the Secretary & Bursar. The university is presently considering procedures for rotating headships in all departments, including multi-chair departments, which may necessitate changing statutes. The Department wishes with immediate effect to change to a 3-year term of office for Heads.  <u>Action:</u> Dean of Science agreed to bring the issue to the attention of the Deans-EMG and to support immediate action on the matter.
A transparent method should be found to assign departmental duties, taking into account teaching, the extent of individual research activity and administration	The QPC recommended that the issue of workloads and their distribution among the staff should be discussed with the HR Department. This issue is also appropriate for consideration by the SEDC of the AC. The QPC	There is transparency within the Department as to where the workloads are assigned. There are not necessarily equal teaching workloads for everyone. Representatives of the Department have been participating in

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	recommended that the Department consults with the Chair of the SEDC.	discussions on models for workload allocation taking place at University level and the Department is awaiting outcomes before proceeding further.
An effort should be made to ensure that all students complete their PhD in a four year period and the project supervisors should endeavour to publish the work carried out in peer reviewed journals as quickly as possible.	The QPC referred the Department to the guidelines drawn up by the Dean of Graduate Studies in consultation with the IFGSB and the faculties. The QPC asked that the Department confirm whether or not the Department is adhering to the guidelines.	The Department is adhering to the guidelines developed by the IFGSB. The Department has set up a Research and Postgraduate Studies Committee and has formalised a procedure for examining and assessment of postgraduates at the end of the first year. The Department does not offer support to students after the 4 <sup>th</sup> year and is doing everything possible to encourage students to write-up and complete. However with the current job market for chemistry postgraduates being so good it is sometimes difficult to get students to complete their thesis before taking up employment.
The Peer Review Group was of the opinion that the research income obtained by the Department is substantial but has not yet reached its maximum potential.	The QPC asked for a plan from the Department to address this issue, with input from all staff of the Department. The QPC was particularly interested how the Department plans to increase the level of research income from non-State funding sources. The QPC recommended the Department ensure each staff member is involved in development of the plans, and that the benefits to students and the local economy of increased activity by the Department in this area be recognised.	The delay in completion of the ERI Building and the pausing by the HEA of the plans for the ABCRF Building have placed serious strains on the resources of the Department. At present staff who should have taken up space in the new buildings are having to be accommodated in existing space in the Kane Building, thus stretching the use of resources to the maximum  Research is an item on the agenda of every staff meeting. Staff are continuing to collaborate with others both within and outside the Department in formulating new grant proposals.
We note the recent beneficial interaction with the Pfizer Pharmaceutical Corporation and encourage the Department to build on this exciting initiative.	QPC endorsed this recommendation and welcomed the Department's commitment to further development in this area of connections with industry.	The Department is working to establish further links with other pharmaceutical industries and are continuing to strengthen the links with Pfizer, Eli Lilly, Intel, etc.

Recommendation of PRG	Recommendation of QPC	Follow-up Report – Oct. '03
<p>There are clear deficiencies in the departmental infrastructure and safety, such as laboratory layout and positioning and number of fume hoods and we think this should be addressed as a matter of urgency.</p>	<p>The deficiencies need to be prioritised. The QPC referred the Department to the College Safety Committee and the College Safety Officer. The QPC acknowledged the urgent nature of the deficiencies and asked that a timetable for the proposed actions and improvements be drawn up following consultation with the Dean of Science, the Buildings Office and the staff of the Chemistry Department. Where expenditure is not required the QPC recommends immediate action be taken on all safety issues within the Department to improve the situation. It was the opinion of the QPC that it is important that some of the core budget allocated to the Department must be put towards these improvements. The QPC wished to know what proposals/plans the Department has for alternative (to UCC core funding) and/or additional sources of funding to rectify the shortcomings of the Department in this area, including any research proposals.</p>	<p>This is a very large task. The cost of refurbishing each laboratory is approximately 180K euro. Of the 12 undergraduate laboratories one has been refurbished with money from UCC, and one with money from Pfizer. One research laboratory has been refurbished with money from HEA under the PRTLTI programme but 13 research laboratories remain with a 1960's structure that is not appropriate for modern chemistry research.</p> <p>Safety:</p> <ol style="list-style-type: none"> <li>1) there is an overstocking of chemicals. The Department is planning to dispose of these chemicals which have accumulated chemicals over a period of time because of the cost of the operation (120K euro in total). The Department is not accumulating any more chemicals and is aiming to use up as many of the chemicals as possible. The departmental safety committee is revising the list in order to prioritise the disposal of the most urgent materials. The Department is willing to contribute towards the cost of disposal providing the additional funds are forthcoming from the College.</li> <li>2) The shortage of space is resulting in students in laboratories having no bench to write at. A re-design of all the research laboratories is required to bring the laboratories to modern standards. This is outside the departmental and faculty resources to implement. <u>Action:</u> Dean of Science/Deans-EMG.</li> </ol>
<p>The Department should improve its general housekeeping in the laboratories from the safety point of view.</p>	<p>The QPC strongly endorsed this recommendation. Also see above</p>	<p>Implemented.</p> <p>The departmental safety committee has addressed this recommendation and has instigated a programme of regular safety inspections to ensure the rules and standards are being implemented.</p>

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<p>To ensure its future development the Department must allow a more flexible use of space to accommodate existing and developing research needs.</p>	<p>The QPC recommended that the Dean of Science discuss the use and management of space within the Chemistry Department. The QPC asks the Dean of Science and the Head of the Chemistry Department to provide the committee with their plans for the review of the management of structures and space within the Department and for solutions to the space allocation issues.</p>	<p>The Department is presently full to capacity and is awaiting the ERI and the ABCRF Buildings.</p> <p>To increase flexibility of use of laboratories infrastructural changes to the laboratories will be needed. The Department has a plan for the re-design of the Department based on thematic lines (is available on request). The estimated cost of implementation of the plan is 5-10 million euro.</p>
<p>The Department should continue and perhaps be a little more proactive in encouraging staff at all levels to avail of existing university staff development programmes that they may not be fully aware of. In particular support staff should be encouraged to participate in such courses.</p>	<p>The committee considered that improvement in this area could be brought about by increasing the awareness of the staff to the training opportunities offered by HR Department. Information on these is widely circulated to all departments in the university. The Department should ensure all staff are made aware of these. The QPC requests that the Department draws up a plan to encourage greater involvement of staff in the programmes that are available. The QPC also recommended that the Department should maintain a log of all training that is undertaken by staff of the Department.</p>	<p>The Department will keep a log of all training undertaken by staff. The Department does encourage staff to avail of staff development programmes and will highlight opportunities at the departmental meetings.</p>