

**University College Cork  
National University of Ireland, Cork**

**Quality Improvement/Quality Assurance**

**Peer Review Group Report**

**Department of Process Engineering**

**Academic Year 2002/03**

### **Members of the Peer Review Group:**

1. Professor John Davenport, Department of Zoology, Ecology and Plant Science, UCC (Chair)
2. Professor Yrjö Roos, Department of Food and Nutritional Sciences, UCC
3. Professor John Monaghan, Department of Mechanical and Manufacturing Engineering, TCD, Ireland
4. Professor Dietrich Knorr, Technische Universität Berlin, Germany

### **Timetable of the site visit**

The timetable for the site visit is attached as Appendix A.

The timetable was well structured and the PRG was able to alter the timetable when appropriate with no difficulty. The ability to meet with all individual staff members was particularly valuable.

### **Peer Review**

#### Methodology:

Professor John Davenport acted as Chair and contributed to discussions on teaching and administration.

Professor Yrjö Roos was Rapporteur and contributed a Food Science and Technology perspective.

Professor John Monaghan led on teaching, accreditation and many engineering aspects.

Professor Dietrich Knorr led on research matters, particularly in terms of food process engineering.

#### Site Visit.

The site review arrangements were excellent, the timetable appropriate and logistic backup entirely satisfactory. The PRG was able to conduct all of its deliberations in comfortable and confidential surroundings, and catering arrangements were flawless.

#### Peer Review Group Report

The report was drafted jointly on Day 2 of the PRG exercise. Professor Davenport acted as writer, with input from other PRG members. Subsequent to the meeting drafts were circulated to the PRG members for comment and any further analysis. All PRG members approved the final draft. It should be noted that all aspects of the Report were supported unanimously by the PRG members.

## **Overall Analysis of the Self-Assessment Report**

The PRG complimented the Department on the progress made on various issues highlighted in their 1999 Strategic Plan, as outlined in the follow up review of the Plan in 2001. The report was well written. The report structure differed from that expected, but covered the essentials comprehensively. Relatively little benchmarking material was presented, but as the BE Food Process Engineering had recently been accredited by the IEI, this was felt to be entirely reasonable.

### Strengths

From the PRG perspective the group largely agreed with the strengths identified by the Department. However we feel that there is some mismatch between current teaching programmes and traditional research areas, and it is not clear that the Departmental and UCC and the Faculties of Engineering and Food Science and Technology research goals are fully compatible.

### Weaknesses

The PRG agreed with the weaknesses identified by the Department. The Group felt that no clearly defined structure or adequate space was in place for handling extra postgraduates. In addition, although the department itself is highly motivated and well organised, there is an issue with maintenance of sufficient communication with cognate departments and faculties.

### Opportunities

All of the opportunities identified appear to be satisfactory. The new degree title BE Process Engineering was felt to describe best the current teaching programme of the department and to yield new opportunities for enhanced potential employment of graduates. It would also appear that there are significant opportunities for interdisciplinary research collaboration within UCC.

### Threats

The PRG concurs with the threats identified by the Department. The PRG believes that there is a potential threat posed by any over-reliance on a single industrial sector.

## **Findings of the Peer Review Group**

### Department Details

The PRG agreed that there is a space problem that will worsen as cohorts of undergraduates move through the system and more postgraduates are recruited. The existing space has been refurbished very effectively, is well organised and copes adequately at present. At current intake levels, the Department may have some difficulty in dealing with final year project work and CAD-supported design work.

The role of the Department within the two parent Faculties needs to be better clarified, particularly given the budgetary allocation to one Faculty, and the physical presence within the other.

If the Department moves into the intended new process engineering research areas it will need new academic staff in the medium term. This will have an impact on the amount of additional space required by the department to run its programmes and house its staff.

### Department Organisation and Planning

The PRG felt that the Department might consider reducing the number of internal committees.

The PRG strongly felt that it is important that the Department should, as a Department, develop its research strategy, and should do so in a way that allows all research staff to contribute effectively to the planning process. It is vital that the development of this research strategy is as inclusive as possible and so should not be devolved to a subset of the academic staff.

The PRG felt that the quota of student intake needs to be reassessed, partly because of resource limitation, partly in terms of the employability of the student output, but most importantly because of sustaining quality of teaching. For example: we feel that no single member of staff should supervise more than 3-4 honours projects per year, so this sets an upper limit to final year class size.

### Teaching and Learning

We applaud the new degree title. However we consider that the students specialise far too early in their course. We also feel that the thrust of the degree should be to produce flexible process engineers, capable of working in a variety of industries, and that specialisation should be limited to electives.

In the short term the Department might explore the possibility of use of part-time external teaching personnel in the area of Supply Chain Management Food Industry and Pharmaceutical Industry to supplement the existing staff expertise.

The Department needs to become more directly involved with the allocation of industrial work placements to ensure that Departmental staff have a close involvement and interaction with local industry.

The PRG identified the volume of laboratory work as excessive and encourages the Department to reassess this component of continuous assessment in terms of amount of laboratory exercises, the credits awarded for these or both.

All laboratory reports should be marked and returned to students within 2 weeks of hand-up.

There appears to be a problem with timetabling of the hand-up dates for laboratory reports and assignments.

Questionnaire usage (for lectures, labs and tutorials) should be encouraged for all academic staff, and feedback from the questionnaires should be given to the students.

Students reported serious problems with Chemistry and Computing and Mechanics teaching in the First Year.

### Research and Scholarly Activity

The PRG commends the Department on the considerable amount of research income generated in the last few years, particularly at a time of change and increased teaching load.

The content of the undergraduate teaching programme does not agree with the research activity of the academic staff, which is currently predominantly in the Food Engineering area.

The Department should, where necessary, aim to secure competence in the research areas associated with its teaching programmes, by appropriate collaboration inside and outside UCC.

The Department should look to their research expertise to create a small number of research groups (3?), each championed by a single individual.

With the proposed increase in postgraduate numbers, the PRG feels that a Postgraduate Advisor should be identified. That person would look after admission and progression of students and arrange seminars, posters displays as appropriate and probably chair the Department's Postgraduate Committee.

Staff should be encouraged to continue and increase participation in international research programmes in Europe and further afield.

Bioprocessing was identified (by senior UCC staff) as a research area of specific interest to UCC. The PRG concurs, believing that this is an area to which the Department could contribute strongly.

The PRG understands from the V-P research that an FDA and GMP research/pilot production facility is hopefully to be built in the Food Processing Hall. He indicated that it would be appropriate for the Department of Process Engineering to be involved in this development. The PRG recommends that the Department discuss this possibility with appropriate UCC partners and authorities.

The Department should continue to publish in reputable journals and should encourage all postgraduate students to publish too.

### Staff Development

The PRG commends the Department on the quality of the technical and secretarial staff, their enthusiasm and thirst for undertaking training that is fostered by the Head.

The PRG realises the onerous nature of committee work and applauds the involvement of all staff of the Department in achieving this so effectively. Particularly praiseworthy is the outreach programme to the Second Level schools.

The PRG recommends that a strong mentoring system is put in place for staff, many of whom are junior and relatively inexperienced.

The PRG recognizes that there is much pressure to collaborate with industry, but reminds academic staff that promotion is still heavily dependent on peer-reviewed publications.

The PRG wishes to endorse the recommendation that Departmental academic staff become increasingly involved in the learning development initiatives of the University.

### External Relations

This newly established Department, with a new name, needs to make all efforts to establish a prominent national and international identity.

### Support Services

The Library is particularly supportive of the process engineering area and was most complimentary about the interaction between the Department and the Library.

In Departmental questionnaires a number of the support services were criticised, including in particular, the Finance Office (Finance and Accounts), the Computer Centre, Parking arrangements, the Sports Centre, Department of Human Resources, Travel Office and Cleaning.

### Departmental Co-ordinating Committee and Methodology employed in the preparation of the Self-Assessment Report

The PRG strongly felt that all Departmental staff had been involved in preparation of the S-A Report and had contributed effectively and enthusiastically.

### **Recommendations for Improvement**

We recommend that the Department pursues the Supply-Chain research and teaching speciality as they propose, encouraging them to fund part-time external expertise, perhaps with funding from industry, or by income derived from professional course teaching. The PRG encourages the Department to maintain the Food Engineering teaching speciality, even though current student interest is lacking.

We agree with the recommendation of the Department that the Department should recruit an external process engineering course Advisory Board.

As the Department has already had the new degree programme pre-accredited by the IEI, the PRG would recommend that the Department submits for full degree accreditation/re-accreditation as soon as appropriate.

**Specific comments on the basic Objectives identified by the Department of Process Engineering**

NOTE: In making these comments the PRG does not imply that all detailed aims and supporting material associated with each Objective are automatically endorsed, even if the basic Objective is itself approved of.

The PRG endorses Objectives 1 and 2, but feels that the areas of research excellence should be focussed rather more, with possibly three areas being explicitly identified.

The PRG feels that Objective 3 and 4 should be combined and pursued, but not to the extent that capacity for primary literature publication is reduced.

**Timetable for conduct of Peer Review Visit**

**Department of Process Engineering**

**Monday 17 February, 2003**

- 18.00 – 19.30 Meeting of members of the Peer Review Group in Suite 1, Business Centre, Kingsley Hotel  
Briefing by Director of Quality Promotion Unit, Dr. N. Ryan.  
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.
- 20.00 Dinner for members of the Peer Review Group, Professor Fernanda Oliveira, Head of Department and Departmental Co-ordinating Committee - Dr Barry O'Connor, Dr Edmond Byrne, John Barrett, Dr Jorge Oliveira, and Anne-Marie McSweeney.

**Tuesday 18 February, 2003**

- 08.30 – 09.00 Convening of Peer Review Group  
Venue: Room 1.34, BioSciences Institute
- 09.00 – 13.00 Consideration of Self-Assessment Report and other inputs along with all department staff, including administrative / technical / support staff, as appropriate. Time allowed for private meetings of members of the Peer Review Group with members of staff.
- 09.00 Professor Fernanda Oliveira, Head of Department
- 09.30 All staff of the Department
- 10.30 Coffee/Tea
- 11.00 Meetings with individual members of staff
- 11:00 Dr Kevin Cronin, College Lecturer  
11:10 Dr Jorge Oliveira, Senior Lecturer  
11:20 Dr Edmond Byrne, College Lecturer  
11:30 Dr Maria de Sousa Gallagher, College Lecturer  
11:40 Dr Barry O'Connor, Statutory Lecturer  
11:50 Dr John Fitzpatrick, College Lecturer  
12:00 John Barrett, Technician  
12:10 Denis Ring, Technician  
12:20 Paul Conway, Technician  
12:30 Tim Twomey, Technician



- 12:40 Anne-Marie McSweeney, Senior Executive Assistant
- 13.00 – 14.00 Working private lunch for members of Peer Review Group
- 14.00 – 14.30 Professor Kevin Collins, Vice-President for Research Policy and Support
- 15.00 – 17.00 Meetings with representative selections of students.
- 15:00 1<sup>st</sup> Year  
 Denis Murphy  
 Owen Burke  
 Ronan Dineen
- 2<sup>nd</sup> Year  
 Niall Ferguson  
 Louise Foley  
 Brian Russell
- 15:30 3<sup>rd</sup> Year  
 Aidan Murphy  
 King Ip Yau  
 Maura Walsh
- 4<sup>th</sup> Year  
 Niall O’Sullivan  
 Abby Lehane  
 Sarah Maloney
- 16:00 Postgraduate Students  
 Sinéad Heffernan MEngSc,  
 Kevin Barry MEngSc,  
 Sergio Carbonell Martinez PhD.
- 16.30 – 17.00 Dr. Jean van-Sinderen-Law, Director of Development, UCC
- 17.00 – 18.30 Meetings with employers and past graduates  
 Venue: Staff Dining Room

**Employers:**

John Brennan, HR Manager, ProsCon Engineering Ltd.

**Graduates Confirmed:**

Dermot Dineen (1998), ProsCon Engineering Ltd.  
 Breda O’Brien (1999), Janssen Pharmaceuticals Ltd.  
 Julie O’Mahony (2000), Project Management Group.  
 Glen Keane (2001), ProsCon Engineering Ltd.  
 Sinéad Heffernan (2002), MEngSc Student in Department  
 Keara O’Leary (2002), Researcher in Department  
 Lisa Heffernan (2002), Researcher in Department  
 Julio Martinez  
 Kevin Barry, MEngSc

19.30 Working private dinner for members for the Peer Review Group

**Wednesday 19 February, 2003**

- 08.30 – 09.00 Convening of Peer Review Group in Department  
Venue: Room 1.34, BioSciences Institute
- 09.00 – 09.30 Professor Aine Hyland, Vice-President and member of the Executive Management Group
- 09.30 – 10.00 Professor Charles Daly, Dean, Faculty of Food Science and Technology
- 10.00 – 11.00 Visit to core facilities of Department.  
Peer reviewers escorted by Denis Ring.
- 11.00 – 11.30 Professor Robert Yacamini, Dean, Faculty of Engineering
- 11.30 – 12.00 Visit to Q+2 Boole Library, meeting with Ms. Margot Conrick, Head of Information Services and Mr. Richard Bradfield, Subject Librarian
- 12.30 – 13.00 Professor Fernanda Oliveira, Head of Department
- 13.00 – 14.00 Working Lunch
- 14.00 – 17.00 Preparation of first draft of final report
- 17.00 – 17.30 Exit presentation made to all staff of the Department by the Chair of the Peer Review Group summarising the principal findings of the Peer Review Group. This presentation was not for discussion by members of the department at this time.  
Venue: Seminar Room 1.13, BioSciences Institute
- 19.00 Working private dinner for members of the Peer Review Group to complete drafting of report and finalisation of arrangements for speedy completion and submission of final report.