

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

**Quality Improvement / Quality Assurance**

**Department of Food and Nutritional Sciences (DFNS)**

**Peer Review Group Report**

**Academic Year 2002/03**

09 January 2003

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

1. Professor Robert Yacamini, Dean of Faculty of Engineering, UCC, Chair
2. Professor Tommie McCarthy, Department of Biochemistry, UCC
3. Professor Brian McKenna, Department of Food Science, UCD
4. Professor David Ledward, School of Food Biosciences, University of Reading, UK
5. Professor John Mathers, Human Nutrition Research Centre, University of Newcastle, UK

### **Timetable for conduct of Peer Review Group Visit**

#### **Department of Food & Nutritional Sciences**

#### **Monday 4 November 2002**

- 18.00 – 20.00 Meeting of members of the Peer Review Group in Kingsley Hotel, Victoria Cross, Cork  
Briefing by Director of Quality Promotion Unit, Dr. N. Ryan.  
Group agreed final work schedule and assignment of tasks for the following 2 days.  
Views were exchanged and areas to be clarified or explored were identified.
- 20.30 Dinner for members of the Peer Review Group and Head of Department and Departmental Co-ordinating Committee.

#### **Tuesday 5 November 2002**

- 08.30 – 09.00 Convening of Peer Review Group in Room 247, Food Science & Technology Building
- 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 was allowed for private meetings of members of the Peer Review Group with members of staff.
- 09.00 – 09.30 Meeting with Head of Department, Professor Charles Daly

- 09.30 – 10.00 Meeting with representatives of administrative staff  
 Ms. Anne Cahalane,  
 Ms. Anne Fenton,  
 Ms. Mary Frost.
- 10.00 – 10.30 Meeting with representatives of technical support staff  
 Mr. Eddie Beatty,  
 Ms. Theresa Dennehy,  
 Dr. Karen Galvin,  
 Ms. Bernice Quinn,  
 Ms. Therese Uniacke,  
 Mr. Dave Waldron.
- 10.30-11.05 Meeting with academic staff associated with BSc Food Science  
 Dr. Conor Delahunty,  
 Prof. Edwin Morris,  
 Prof. Daniel Mulvihill,  
 Dr. Paul McSweeney,  
 Dr. Tom O'Connor,
- 11.05-11.40 Meeting with academic staff associated with BSc Food Technology  
 Dr. Elke Arendt,  
 Prof. Joe Buckley,  
 Dr. Alan Kelly,  
 Dr. Joe Kerry,  
 Prof. Yrjö Roos
- 11.40-12.15 Meeting with academic staff associated with BSc Nutritional Sciences  
 Prof. Kevin Cashman,  
 Dr. Conor Delahunty,  
 Prof. Albert Flynn,  
 Dr. Mairéad Kiely,  
 Dr. Nora O'Brien,  
 Dr. Tom O'Connor,  
 Dr. Tony Sheehy
- 12.15 –13.00 Time for individual meetings  
 12.20-12.30 Dr. Tom O'Connor  
 12.30-12.40 Dr. Alan Kelly  
 12.40-12.50 Dr. Nora O'Brien
- 13.00 –14.00 Working private lunch for members of Peer Review Group
- 14.00 –15.00 Visit to core facilities of Department

- 15.00 – 15.30 Meeting with 1<sup>st</sup> and 2<sup>nd</sup> Year undergraduate student representatives  
1<sup>st</sup> year undergraduate students  
 Ms. Elisa Forde, BSc Food Science & Technology;  
 Ms. Aine Ni Chonchubhair, BSc Nutritional Sciences
- 2<sup>nd</sup> year undergraduate students  
 Mr. Killian Barry, BSc Food Science;  
 Mr. Gerard Murphy, BSc Food Technology;  
 Ms. Fiona Nally, BSc Nutritional Sciences
- 15.30 – 16.00 Meeting with 3rd and 4th Year undergraduate student representatives  
3<sup>rd</sup> year undergraduate students  
 Ms. Avril O' Toole, BSc Food Science;  
 Mr. William Ryan, BSc Food Technology;  
 Ms. Mairead O'Connor, BSc Nutritional Sciences
- 4<sup>th</sup> year undergraduate students  
 Ms. Georgina Gilligan, BSc Food Science;  
 Mr. Kenneth Wade, BSc Food Technology;  
 Ms. Anne O'Dwyer, BSc Nutritional Sciences
- 16.00 – 16.45 Meeting with representatives of postgraduate students  
1st year postgraduate students  
 Ms. Aoife Sheehan (Food Chemistry);  
 Ms. Michelle Moore, (Food Technology);  
 Ms. Eileen Murphy, (Nutritional Sciences)
- 2<sup>nd</sup>/3rd year postgraduate students  
 Ms. Sinead Fitzsimons (Food Chemistry);  
 Mr. Anthony O'Sullivan (Food Technology);  
 Mr. Tim Hill (Nutritional Sciences)
- 17.00 – 18.30 Informal meeting with representatives of employers and past graduates  
 Venue: Staff Common Room, UCC
- Past graduates:  
 (BSc Nutritional Sciences)  
 Ms. Claire MacEvelly, Food Safety Promotion Board, Cork  
 Ms. Gobnait Creedon, Teagasc, Moorepark, Co. Cork.
- (BSc Food Technology)  
 Ms. Olive Kingston, Galtee Meats, Mitchelstown, Co. Cork  
 Mr. Bernard O'Connor, Newmarket Co-op, Co. Cork
- (BSc Food Science)  
 Ms. Geraldine Ahern, Dairygold, Mallow, Co. Cork.  
 Ms. Eileen O'Regan, Schering-Plough, Brinny, Co. Cork  
 Mr. Mark Hennessy, Dairygold, Mallow, Co. Cork.

Employers:

Representative

Company/Organisation

Mr. Eddie Hinchy	Beamish & Crawford Ltd
Mr. Micheal O'Shea	Dairygold Co-op Ltd
Mr. Dan Galvin	Dawn Meats
Mr. Ted O'Sullivan	Department of Agriculture & Food
Mr. Donal Cronin	IAWS (Irish Pride)
Mr. Cal Flynn	Kerry Group plc
Ms. Catherine Murphy	Health Promotion Department, Southern Health Board
Dr. Liam Donnelly	Teagasc- National Dairy Products Research Centre
Mr. Pat O'Connell	Work Placement Officer, Faculty of Food Science & Technology, UCC

- 19.00 Meeting of Peer Review Group to identify remaining aspects to be clarified and to finalise tasks for the following day.  
Working private dinner for members for the Peer Review Group.

**Wednesday 6 November 2002**

- 08.30 – 09.00 Convening of Peer Review Group in Room 247, Food Science & Technology Building
- 09.00 – 09.30 Meeting with Registrar & Vice-President for Academic Affairs, Professor Aidan Moran
- 09.30 – 10.30 Visit to Boole Library, meeting with Ms. Margot Conrick, Head of Information Services and Mr. Richard Bradfield, Subject Librarian
- 10.30 – 11.00 Meeting with Vice-President for Research Policy & Support, Professor Kevin Collins
- 11.00 – 11.30 Coffee/Tea
- 11.30 – 12.30 Time for individual meetings (II)  
11.30 Prof. Daniel Mulvihill  
11.45 Dr. Paul McSweeney
- 12.30 – 13.00 Meeting with Professor Charles Daly, Head of Department & Dean of Faculty of Food Science & Technology
- 13.00 – 14.00 Working Lunch
- 14.00 – 17.00 Preparation of first draft of final report
- 17.00 – 17.30 Exit presentation to all staff of the Department by the Chair of the Peer

Review Group, summarising the principal findings of the Peer Review Group.

Venue: Council Room, UCC

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.

### **Thursday 7 November 2002**

Externs departed

### **Peer Review**

#### **Methodology**

The self assessment report was reviewed by the peer review group prior to the site visit. The site visit was then conducted according to the timetable outlined above. Prof. Yacamini chaired the peer review group and each session in the timetable. In the review process, the peer review group functioned as a unit to address Department details, Department organisation and planning, teaching and learning, research and scholarly activity, staff development, external relations and support services. For the conduct of the meetings in the site visit, Prof Yacamini chaired each session, Prof. David Ledward and Prof. John Mathers led the review on matters relating to research, teaching and learning, Prof. Brian McKenna led the review on matters relating to Departmental organisation and planning. Prof. McCarthy was the designated rapporteur.

### **Overall Analysis**

The review panel reviewed and considered the self-assessment quality improvement / quality assurance report of the DFNS. The panel wishes to acknowledge that the report was extensive, thorough, detailed and comprehensive. The panel met with various staff and students from the Department and were impressed by the high level of engagement of the staff and students in the self-assessment process and by their commitment to the process.

#### **Strengths**

The review panel agreed with the Department's strengths as outlined in the self-assessment report. The panel was particularly impressed with the following strengths:

- a. The quality and commitment of the staff at the academic, technical and administrative and support levels.
- b. The strong commitment of the staff to the high quality education of their students, to student needs and to enhancing the quality of the student experience.
- c. The strong links between staff and industry and the high respect commanded by the staff among colleagues in industry.
- d. The track record, ability and excellent reputation of the staff in fundamental and applied research and in generating funding for research.

- e. The high regard held outside UCC for graduates and postgraduates that have been educated and trained in the Department.
- f. The extensive collaborative research connections and networks.
- g. The vision and proactive nature of strategic planning in the Department that has brought the Department to its current status as a premier Department in the sector at the international level.
- h. The high status of the Department as a major player in education, teaching and research in the agri-food area at the national and international level and the central role it plays in academic-industrial interactions at the research and training level.

#### Weaknesses, Opportunities, Threats

The review panel considered the weaknesses, opportunities and threats of the SWOT analysis. Weaknesses, opportunities, and threats identified in the report were in line with the findings of the review committee. The review panel acknowledges that the Department is very young and was only established in 1998 through the amalgamation of four of the then seven primary Departments within the Faculty of Food Science and Technology. Advancement and harmonisation of the integrated department is slowly progressing. The new degree programme in Food Science and Technology is now in place and will contribute substantially towards further harmonisation.

#### Benchmarking

The review panel was satisfied with the benchmarking process. Undergraduate teaching programmes compare well with those of top international universities, graduates are highly regarded in the global agri-food and related industries and the work placement programme is considered very successful. Analysis by an independent scientific consultancy group showed that UCC was the largest food research performer in Ireland, Food Science and Nutrition was the leading research area in UCC, the citation rate of research publications was 1.64 times the world average for food science publications and analysis across a range of fields of research positioned Food Science and Nutrition at the top of the research league table in Ireland. Within UCC, the DFNS has the highest number of postgraduate research students among cognate departments.

Overall, the Department compares very well with top ranked international departments in the area in the UK, mainland Europe and the USA.

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

The DFNS has a central role in food-related activities at UCC and the review panel acknowledges that the Department has an outstanding and exemplary track record and is a national and international leader in the agri-food area at multiple levels. The review panel acknowledges and recognises that building and maintaining excellence in the agri-food area in Ireland is of high strategic importance both nationally and internationally.

The review panel acknowledges and recognises that the DFNS has played a major and pivotal role in education in the agri-food area through building and maintaining a department that is recognised as an international leader, through educating and training of undergraduates and postgraduates to a very high standard and through providing continuing education to serve the educational and training needs of the agri-food sector.

The review panel acknowledges and recognises the outstanding research record of the DFNS. The Department has an excellent track record at the international level in fundamental and applied research and its excellence in research is of high relevance to regional, national and European needs. The Department's publication record of peer-reviewed research is excellent and its generation of external research funding is exceptional.

The DFNS is of high national strategic importance to the agri-food area and has a critical mass that enables it to function as a major player in the sector at the national and EU level. The DFNS has worked in a proactive fashion to contribute to advancement of the agri-food sector and is recognised as a key entity by government departments, industry in the sector and by consumers.

The review panel acknowledges that the DFNS has a very strong interface with industry and supports industry at several levels. It works to ensure that programmes of education and research are relevant to regional, national and European needs. It provides well-educated and trained undergraduate and postgraduate students for the sector. It works extensively with the industry to support innovation in the food industry and consumer health protection. It is very active in promoting the transfer of new knowledge to end users, including industry, regulatory authorities and policy makers.

The review panel acknowledges and recognises the significant responsibilities that the DFNS has in the broad context of the agri-food sector and in providing an integrated food strategy at UCC that is able to assimilate and promote multidisciplinary working and a comprehensive approach to food systems.

The review panel acknowledges that new challenges are facing the DFNS at several levels. In light of the items identified in the SWOT analysis, it is clear that diminishing student numbers is a key concern for the Department. In addition, in this post-genomic competitive era, it is clear that the Department needs to be highly proactive to maintain its position as a premier Department in education, training and research in the food science, technology and nutrition area. Finally, it is clear that the Department also needs



to be highly proactive to further develop and expand its interaction with industry and government agencies. The review panel understands that the Head of Department's current term of office will end in 2003. Given the critical role that the Head of Department plays in developing and implementing the Department's strategy, it will be important that how this post is to be filled is known as soon as possible to avoid planning blight. The findings of the peer review group in relation to meeting these challenges are outlined under the different headings below.

#### Department Organisation and Planning

The challenge within the Department is to achieve maximum integration as a single Department and to maintain the academic strengths of the core subject disciplines. The Department has a well-defined set of regulations that also detail the management structure and organisation. It is clear that to meet the challenges facing the Department, it needs to move its management structure up a level in terms of efficiency, communication and decision-making and to move towards full implementation of the management structure and organisational plan. There is a lack of centralisation and integration of Department administration and a deficiency of a single identified office / student contact point in the Department. Remedying these two deficiencies is expected to bring benefits in terms of cost effectiveness and greater efficiency and to improve communication with students.

#### Teaching and Learning

The new integrated BSc in Food Science and Technology was viewed as a very positive development. Diminishing student numbers is a key concern for the Department. The first year has been clearly identified as contributing to this problem. The first year is almost entirely outside the control of the Department and the review panel recommend that UCC engages immediately with the Departments teaching the first year programme to review the identified problems and to put in place a system to counteract them. It should be appreciated that diminishing student numbers in science is a national problem. The review panel was impressed with the proactive recruitment efforts of the Department and noted that the most critical influence on the recruitment drives is the first year which is largely outside Department control. The Department has a very high number of postgraduates and consequently a high workload in postgraduate training and supervision. Postgraduate training in soft skills and research and experimental methods was identified as an area where the Department could improve. In addition, attention should be given to ensuring an equitable distribution of the workload for supervision and administration associated with postgraduate training. This includes postgraduate activities at the demonstrator level.

The review panel recognises that new opportunities are arising for new degree programmes, especially in the area of undergraduate and postgraduate programmes in dietetics. Fostering and developing close links with the Medical Faculty will be important for these initiatives.

#### Research and Scholarly activity

The review panel acknowledges the research excellence of the Department. The challenge for the Department will be to expand and maintain its excellent record in

research and scholarly activity. The links that the Department has developed and is developing with the BioSciences Institute, with the Medical Faculty and with research and development in the industrial sector are of critical importance for its future development. The Department's research income is dependent on a relatively small number of funding agencies. The Department should consider expanding or diversifying its activities to attract funding from additional agencies, but this should not be at the expense of maintaining a critical mass of researchers in key areas. It was clear to the review panel that the Department has an excellent research record and contributes substantially to overall UCC grant income, but it was not clear how the productivity or contribution of the Department to UCC in this area is recognised by UCC.

The Food Hall in the Department is a major potential resource for research and teaching. Refurbishment / upgrading and/or re-development of the Food Hall will be of considerable benefit to the Department and to the University. However, careful consideration needs to be given to how such an enhanced facility is serviced and maintained in the medium and longer term.

#### Staff Development

The review panel was impressed with the quality and commitment of academic, technical, administrative and support staff. Staff development is a central issue to the continued success of the Department and will impact on its ability to meet new challenges. Workload balancing between teaching, training, research and administrative duties needs to be addressed for academic staff. In addition, the equitable distribution of workloads between academic staff needs to be addressed. Technical and administrative staff would benefit from more detailed job descriptions. Promotional opportunities for technicians are deficient and need to be addressed. Promotional opportunities for administrative staff also need to be addressed and the Department should ensure that all the duties of administrative staff are recognised for promotion.

#### External Relations

The Department has extensive external contacts and some strategic alliances within UCC and with outside universities, institutes, government departments, national and international agencies, industry and the wider community. Maintenance of these contacts and development of new contacts and strategic alliances is particularly important for the future of the Department and represents a significant hidden workload in the Department.

#### Support services

The review panel visited the library and was impressed with the strong relationship between the library and the Department. The panel was also impressed that the library carried a good selection of books and journals relevant to the Department.

### **Recommendations for improvement**

Recommendations for improvement made by the Department in the Self-Assessment Report and comments by the review panel are listed below. The Department's recommendations are shown in bold.

**The University should continue to highlight and promote Food education, research and research training as one of its key strengths.**

The DFNS is clearly a flagship Department for the University and a key Department in national and international agri-food area. The review panel endorses this recommendation. The review panel recommends that the research success of the Department should be reflected in resource allocation.

**UCC should maximise resources available for student recruitment by targeting science-based students nationally and by a structured programme to attract overseas, economic fee-paying students.** The review panel endorses this recommendation.

The review panel acknowledges that sabbatical leave is a highly desirable and proactive form of activity that benefits all academic departments and endorses the recommendation that **academic staff should be encouraged to undertake sabbatical leave to support their teaching, learning and research activities.**

**UCC should consider the development of a career structure for long-term research staff.** The review panel believes that this is being addressed at an EU level.

**UCC should place increased emphasis on staff development needs of technical and administrative staff.** The review panel endorses this recommendation. In addition, it recommends that the Department places emphasis on the training needs of technical and administrative staff and on the development of clearly identified roles and job descriptions for the staff.

**It is recommended that the proportion of the University budget allocated to the library be increased from 4% to 6% (the UK recommended norm) in order to address the serious limitations on holdings of books and journals.** The review panel agrees that the library should be well resourced but is not in a position to comment on the level. The review panel recommends that a proportion of overheads from research grants be used for library resources.

**The University should approve the filling of the Professorship of Nutrition as a matter of high priority to ensure the continued successful development of this discipline at UCC.** The review panel recognises the importance of academic leadership in each of the Department's three core disciplines, i.e. Food Chemistry and Food Technology and Nutrition, The Professorship of Nutrition, vacant since November 2001, is a key position of academic leadership for Nutrition and the review panel supports the Department's request that the post should be filled. However, the panel recognises that the timing of this will be influenced by many factors.

**It is recommended that the University should support the Department in its strategies to improve its cost per student FTE.** The review panel recommends that the University should support the Department in increasing its undergraduate and postgraduate student numbers through introduction of new degree programmes.

**The University should review as a matter of priority its policy of weighting research postgraduates at 1 FTE.** The review panel agrees that the workload associated with postgraduate training is higher than for undergraduate training. The review panel endorses this recommendation and suggests that this might be achieved by giving the Department more resource credit for its high research income.

**The University should establish a scheme for seed funding for new academic appointees.** The review panel endorses this recommendation and suggests that the Department should consider augmenting such funding through overheads received from grant research income.

**UCC should examine issues surrounding high failure rates in 1<sup>st</sup> year courses provided by other Departments.** The review panel identified teaching of first year students and high failure rates as an item requiring immediate action. This is particularly the case since the Department is dependent on students coming through from a first year programme that is almost completely outside the control of the Department. Departments teaching in the first year programme play a significant role in determining student numbers in the Department of Food and Nutritional Sciences as significant drop out occurs at the end of first year. Thus, Departments teaching in the first year programme should be viewed by the University as key Departments in tackling the diminishing student numbers of the DFNS.

**The University should address the continuing need to upgrade undergraduate teaching laboratories and the Food Processing Hall.**

The review panel endorses this recommendation and agrees with the proposal to upgrade the space in the Food Processing Hall to enhance teaching and research across the University by the provision of state of the art small-scale pilot plant equipment that lends itself to process control. The review panel recognises that this will require considerable external funding and University support and considers this a good long-term strategic investment for the University.

**The University should urgently address IT facilities available to the Department's undergraduate and postgraduate students.** Based on feedback from students, staff, work placement employers, the review panel endorses this recommendation.

**It would be timely for the Department to review the management and committee structures with a view to identifying further methods of improvement of management of the Department. In reviewing these structures, practical attention should be paid to the issues of: role and responsibilities of the various Departmental Committees; internal communications systems (including meetings); centralisation of Departmental administration and budgetary reporting.** The review panel

recognises that the Department was only formed in 1998 and is still a young Department. The review panel commends the Department on its integration progress to date and endorses this recommendation and strongly encourages the Department to continue integration at all levels whilst recognising the diversity of skills and expertise within the Department. This recommendation was considered one of the most urgent and is essential for harmonisation of the integration of the Department and the development of a working management and committee structure.

**The Department should further improve communication with its students..** The review panel endorses this recommendation. The integration of the Department still has a number of deficiencies. In particular, a centre point for student contact is lacking. The review panel recommends that a central office for all student contact should be established.

**The Department should undertake regular formal evaluations of workloads of all staff.** The review panel endorses this recommendation. Administrative, technical and support staff would benefit from more clearly identified job descriptions. Devolution of more responsibility to all support staff should be considered. Comparison of workloads across academic staff should be carried out and comparators should be developed to enable equitable distribution of workloads with respect to time and priority across teaching, research, administration and other activities. Workloads of junior staff in particular should be reviewed carefully to ensure that they are fully in line with career development.

The Departmental costs are viewed by the College Officers as relatively high. This will have important implications for future resourcing of the Department. **Therefore, this issue needs to be addressed by the Department by strategic planning of (i) student recruitment and enrolment into existing Programmes and any newly proposed educational initiatives (e.g., taught MSc programmes) and (ii) any future staffing decisions within the Department.** The review panel endorses this recommendation. The review panel recommends that research income generation should be taken into account when reviewing Departmental costs. The review panel recommends that UCC develop an appropriate mechanism to credit research income generation to departments. This is an essential item to enable strategic planning by the Department

**The Department should also identify opportunities to provide additional sources of income such as increased numbers of economic-fee paying undergraduate and postgraduate students, increased research income and associated overheads to the Department, and donations from alumni, foundations and the commercial sector.** The review panel endorses this recommendation.

**The Department needs to explore the learning side of its education remit.** The review panel found that students are somewhat over taught and that insufficient time is left for student learning. The panel recommends that learning outcomes should be established for each module and course curriculum and measured as to achievement. .

Based on feedback from students, many of them appear to be unhappy with assessment methods, often on an end-of-year examination basis only. **Therefore, the Department should review its approach to Student Assessment, and in particular, explore the possibility of re-introducing Continuous Assessment methods, where appropriate.** The review panel endorses this recommendation.

**The Department should continuously review and evaluate the curricula of its BSc Programmes, with a view to maintaining and improving their high quality.**

The review panel endorses this recommendation and recommends that the Department should give priority to a review of the second year of its new programme and the review of the Nutritional Sciences degree. The panel recommends that all members of Department should be involved in both reviews. The final year project should also be reviewed. The amount of work put into the project seems to be significantly in excess of the project weighting. This imbalance should be addressed. The final year project should have a specific start date and a specific end date.

New initiatives have been implemented recently by the Faculty and Department in terms of undergraduate student recruitment. **However, to maintain and improve student enrolment into the BSc Programmes, such initiatives, including active liaison with secondary schools, need to be maintained, and, if possible, expanded.** The review panel endorses this recommendation.

**The Department should explore possible teaching and learning links with national (in particular, CIT) and international partners.** The review panel endorses this recommendation and panel members were encouraged by planned new programmes.

The growth in research activity with the recruitment of new academic staff, the development of new research programmes and the increase in postgraduate research students and research staff has increased the need for research laboratory space. **The Department should prepare a strategic plan for its space needs to ensure that adequate space is available to take account of the changing profile of Departmental research, the expansion of research in new areas and the development of extension/innovation services.**

The review panel endorses this recommendation and recognises the importance of the involvement of the Department in the new BioSciences Institute. There is a continuing need to upgrade research laboratories and to expand research equipment and facilities in order to remain competitive in its research areas. The funding of this requires a strategic approach to funding agencies. The review panel endorses this recommendation and recommends that UCC supports this recommendation by continued acknowledgement of the Department as one of its premier Departments and by continued acknowledgement of research in the agri-food sector as one of its key priority areas.

**In order to maintain and further improve research quality the Department should support the research strengths of individual staff by assisting, where appropriate, the development of critical mass through interdisciplinary research and internal and external collaboration.** The review panel endorses this recommendation.

The Department has a large research grant income. A very high proportion of research grant income has been obtained from the Department of Food and Rural Development (DAFRD) and EU. This high dependence on a few sources of funding to maintain research programmes is undesirable. **The Department should seek to diversify sources of funding for research.** The review panel endorses this recommendation and encourages the Department to maximise interdisciplinary collaboration as a means to develop strands of research that can potentially be funded from other sources.

There is a considerable ongoing need to generate external grant income in order to maintain and develop further key research areas. This requires that researchers be provided with adequate information and support at Department, Faculty and University levels in developing research proposals as well as in adopting a strategic approach to proposals for large scale funding e.g. Higher Education Authority (HEA), Science Foundation of Ireland (SFI), DAFRD, Enterprise Ireland, and the EU. There is also a need for seed funding for new appointees. **The Department should work with other Departments in the Faculty, the National Food Biotechnology Centre, the Biosciences Institute, and the Research Support Office in adopting a strategic approach to seeking funding of research undertaken by individual researchers as well as for research programmes that require large scale funding.** The review panel endorses this recommendation.

**The Department should continue to increase its output of high quality research postgraduates.** The Department has a very large number of postgraduates in relation to staff numbers. The Department should review the balance between its undergraduate commitment and resource allocation, its postgraduate commitment and resource allocation and the mission of the Department to ensure that increases in output and the overall quality of the Department's output are maintained.

**The Department should closely monitor completion times for postgraduate students.** There is a high standard of supervision of research postgraduates and thesis committees have been established. The Department, with the assistance of its Graduate Studies Committee, has a developing programme of improvement in the quality of research training for postgraduate students. The review panel recommends that the Department develop a more structured approach to the area of postgraduate training and include additional skills training to that already being carried out including experimental design, good laboratory practice, intellectual property, research ethics and innovation in research methods and approaches.

**The Department should focus on improving recruitment procedures in order to attract high quality Postgraduates from a wider range of institutions and backgrounds.** The review panel endorses this recommendation.

The Department has a strong track record of technology transfer and interaction with industry, working in association with other Departments in the Faculty, the National Food

Biotechnology Centre, the UCC Food Industry Training Unit, the UCC Food Industry Partnership Board and state agencies such as FAS, Enterprise Ireland, Teagasc and DAFRD. **The Department should continue to work closely with individual companies and consortia, with other Departments in the Faculty, the National Food Biotechnology Centre, the UCC Food Industry Training Unit, the UCC Food Industry Partnership Board and state agencies such as FAS, Enterprise Ireland, Teagasc and DAFRD to further develop its food extension/innovation service to the Food Sector.** The review panel endorses this recommendation.

The Department has established strong links with other Irish Institutions (e.g. Teagasc Food Research Centres, and Trinity College Dublin and the University of Ulster through the Irish Universities Nutrition Alliance). Further development of such strategic linkages is desirable. In addition a strong effort should be made to ensure that the strong collaboration established with a number of leading European Universities and Research Institutes through EU research programmes is continued and enhanced within the forthcoming EU Sixth Framework Programme. **The Department should further develop its strategic linkages and research collaboration with other research institutions in Ireland, the EU and globally.** The review panel endorses this recommendation.

**The Department should place increased emphasis on staff development needs, including active mentoring, development of teaching, learning and assessment skills (for new academic staff), a greater use of sabbatical leave (all academic staff), performance evaluation (all staff) and ongoing training for technical and administrative staff.** The review panel endorses this recommendation.

*The panel also pointed out that given the critical role that the Head of Department plays in developing and implementing the Department's strategy, it is important that filling of this post is clarified as a matter of urgency.*

*The review panel wishes to acknowledge that the report submitted to it by the Department was extensive, thorough, detailed and comprehensive. The extensive amount of work that went into the preparation of the report was highly appreciated by the review panel.*