

UNIVERSITY COLLEGE DUBLIN

QUALITY IMPROVEMENT PLAN



UCD School of Biosystems and Food Engineering

**Scoil na hInnealtóireachta Bithchórais agus na
hInnealtóireachta Bia, UCD**

March 2019

INTRODUCTION

This Quality Improvement Plan (QIP) was developed in response to the recommendations of the Quality Review of the UCD School of Biosystems and Food Engineering School carried out by a Review Group over the time period 24 – 27 April 2017. Subsequent to this a report was issued which was accepted for publication by the UCD Governing Authority at its meeting in April 2018. This QIP details each of the recommendations of the Review Group and the School's response under the categories and options set out in the Quality Improvement Template document.

This QIP was developed by members of the Self Assessment Coordinating Committee in consultation with all staff in the School.

The members of the Self Assessment Co-ordinating Committee were:

- Chair and Head of School: Prof. Colm O'Donnell
- Head of Teaching and Learning: Prof. Nick Holden
- Head of Research: Associate Prof. Enda Cummins
- Head of Laboratory Committee: Associate Prof. Aoife Gowen
- Chair Staff – Student Committee: Dr Fionnuala Murphy
- Senior Technical Officer: Mr Tony Fitzpatrick/Dr Anna Lesniak
- School Administrator: Annette Patchett
- Postgraduate Student Member: Ronan Dorrepaal PhD Student
- Research Staff member : Dr Ming Zhao

In what follows the Review Group recommendations are listed, with the paragraph reference from their report. A category number (1, 2 or 3) listed indicates the following:

1. Recommendations entirely under the control of the School
2. Recommendations outside the control of the School
3. Recommendations requiring recurrent or capital funding

Finally, there is an indication of implementation timescale envisaged, as follows

- A. Recommendations already implemented
- B. Recommendations to be implemented within one year
- C. Recommendations to be implemented within five years
- D. Recommendations which will not be implemented

Report Ref.	RG Recommendation	Category	School Response	Timescale
ORGANISATION AND MANAGEMENT				
2.12	After a number of organisational changes over the past 12 years, the RG strongly recommend that SBFE remain in the current structure, allowing time and space to maximise its educational and research impact within the College of Engineering and Architecture, but with strong interdisciplinary linkages across the University, (for example with the School of Computer Science, School of Agriculture and Food Science, Health Sciences).	2	This recommendation is in line with the SBFE strategic plan.	A/B/C
2.13	Formalised procedures for induction and mentoring of staff should be introduced as soon as possible. The RG recognises that within a small School, these often happen informally. However, a more rigorous and consistent approach, ensuring all staff have an equivalent experience, is recommended.	1	Agreed. In addition to the mentoring of new staff already in place, the School will assign a senior member of staff to act as a peer mentor for the first three years of the career of new staff members. Postdoctoral staff are generally recruited and supervised by a faculty member who will act as a mentor. Mentoring will be supported by assistance and advice from our HR Partner.	A/B
2.14	SBFE should formalise its workload management model.	1	The school fully accepts this recommendation on the formalisation of a workload model. Implementation of the School's new work load model will commence at start of the next academic year.	A/B
2.15	Student induction and orientation, as well as workload allocation, should also be undertaken in a systematic way.	1	The School has introduced an induction day for all new incoming students each September. In addition our College hosts an induction event for all research students. A number of SBFE events are organised for students each year to meet our faculty, staff, students and College Student Advisor. A new School newsletter has also been introduced to	A

			improve communications between all members of the School community. Workload allocation: see 2.14 above.	
2.16	All staff should be made aware of, and the HOS monitor, the need to ensure that the opinions, views and contributions of more recently appointed faculty are equally valued.	1	Agreed. Monthly School staff meetings provide a forum where the inputs of all staff to School decisions are facilitated.	A
2.17	The Institutional Athena Swan Bronze Award presents an opportunity for SBFE to emphasise its commitment to advancing the careers of women in science, technology and engineering. SBFE should consider developing an application for a school-level Award.	1	Two SBFE staff are actively engaged in preparing the current College Level Athena Swan application. Female faculty in the School have completed or are currently completing the Aurora Leadership Development Programme.	D
2.18	SBFE is encouraged to strengthen its links with undergraduate students, for example through organising events in collaboration with the UCD Engineering Society, and also by offering summer research placements to undergraduate students from engineering, agriculture, and science disciplines.	1	Agreed. SBFE has introduced a range of measures to increase links with undergraduate students through summer placements/internships and through new undergraduate modules.	A
2.19	The RG recommends that SBFE business should be carried out according to formalised protocols, to ensure continuity and consistency over time.	1	Agreed. SBFE has reviewed and updated its committee management structure, terms of reference and memberships with a view to better meeting the requirements of the School.	A/B
2.20	Responsibility for Health and Safety across the School should be formally delegated by the HOS to a specific individual staff member.	1	Agreed. A School staff member has been appointed to this role.	A
2.21	The SBFE strategic plan should be revised and further mapped to University strategic planning activity. Sections on risk analysis and management, and succession planning should be added to the plan.	1	Agreed. The School is currently updating its strategic plan in-line with the annual planning cycle and will implement this recommendation.	A/B

Report Ref.	RG Recommendation	Category	School Response	Timescale
STAFF AND FACILITIES				
3.13	It is highly desirable to replace current temporary faculty appointments with permanent positions, whenever possible.	1 / 2	Agreed. Since the quality review, the recruitment process for 3 new permanent positions (faculty and staff) in the School has been successfully completed. The recruitment process for 2 additional faculty positions is close to completion.	A
3.14	The numbers of support staff available to assist with practical teaching and research are inadequate. Support staffing should reflect the module offerings and enrolment.	1/2	The School has appointed a new Technical Officer qualified to PhD level to provide a high level of support to School teaching & research activities. In addition the School has introduced new funded Research Demonstrator positions to assist with the delivery of taught programmes.	A/B
3.15	We recommend SBFE place an emphasis on formalising staff development, consistent with the new UCD HR system "Performance for Growth," as it is rolled out.	1	Agreed. This is being done with assistance and advice from our HR Partner.	A/B
3.16	SBFE needs to prioritise career development plans for its post-doctoral staff, having regard to the discipline, consistent with university-wide initiatives.	1/2	Agreed. The School will promote the existing UCD Research Skills & Career Development Initiative which provides post-doctoral researchers with access to training and development opportunities across Research & Research Management/ Personal & Professional Excellence/Teaching Learning & Mentoring and Innovation & Transferable Skills. School faculty will also mentor post-doctoral staff in their group.	A/B
3.17	SBFE needs to improve communications among and between faculty, staff, and students.	1	The School has introduced an induction day for all new incoming students each September. In addition our College hosts an induction event for all research students. In	A

			addition a number of events are organised each year for students in the School to meet fellow students, faculty, staff and College Student Advisor. A new School newsletter, web site and Twitter account have also been introduced to facilitate improved internal and external communications.	
3.18	In the long term, SBFE should develop a staffing plan to backfill open positions as a result of retirements as alluded to in the SAR. The scope of the staffing plan should be seven years.	1	Agreed. The School is currently recruiting two permanent faculty ahead of the planned retirements listed in the SAR.	A
3.19	SBFE should continue to fully utilise staff at College level to enhance marketing and student recruitment.	1	Agreed. Valuable assistance continues to be received from our College marketing and recruitment colleagues. SBFE will also work closely with UCD Global to increase student recruitment.	A/B
3.20	SBFE should continue its efforts to enhance diversity (gender and other aspects).	1	Agreed. Two SBFE staff are actively engaged in the College Level Athena Swan application. SBFE Equality, Diversity and Inclusion representative appointed. School faculty currently completing the 2018/19 Aurora Leadership Development Programme.	A/B/C
3.21	Research and common areas within the Agriculture and Food Science Centre should be renovated to support an expanding research base.	1/2/3	The School has been successful in securing internal Minor Capital Works (2017 and 2018) and UCDEquip (2018/19) grants to improve our research infrastructure and facilities. These grants address our most immediate requirements. In addition the School has an annual research spend of ca. €3m which facilitates the purchase of new research equipment. The proposed increase in research overhead return and existing school reserves will be used to support longer term strategic investment in SBFE research infrastructure.	A/B/C

Report Ref.	RG Recommendation	Category	School Response	Timescale
TEACHING, LEARNING AND ASSESSMENT				
4.12	SBFE should consider implementing a Graduate Seminar to enhance the exchange of ideas between and among SBFE faculty and graduate students.	1	All graduate students present an annual research presentation to School staff and students. All SBFE postgraduate students also submit a short paper to the SBFE Research Review which is published annually.	A
4.13	SBFE should formalise the on-boarding process for all graduate students. Historically, on-boarding has been handled by the academic staff and support staff, and given the relatively small size of the academic unit, this informal approach was acceptable. However, as student numbers grow it will be increasingly important to formalise the on-boarding process so that students understand degree requirements and timelines, laboratory hygiene and safety practices, support staff resources, computer and software access, building access, etc..	1	The School has introduced an induction day for all new incoming students each September. In addition our College hosts an induction event for all research students. All graduate taught students complete a module which addresses health and safety/lab practice/access to library resources etc. Consideration will be given to offering this module to all research students by the SBFE Teaching & Learning Committee when new faculty are recruited later this year. A School handbook for SBFE research students has also been introduced in response to this recommendation. Programme directors organise additional introduction/information sessions for their degree students.	A/B
4.14	It is recommended that the planned Industry Advisory Group be routinely consulted on curricular content and desired learning outcomes for all SBFE degree programmes.	1	Agreed. This group has provided valuable feedback on our teaching and research programmes.	A
4.15	The overall efforts by the School to track SBFE graduates were not obvious, apart from the LinkedIn group. Information regarding post-graduate employment rates was presented.	1/2	The School database of both research and taught programmes' graduates has been expanded to include additional fields to implement this recommendation. The School	A/B

	However, starting salaries and a listing of employers were not available to the RG. If the latter items are not routinely tracked, it is important for SBFE to begin collecting this data.		will continue to work closely with UCD Alumni Relations and UCD Career Development Centre to update and maintain database of SBFE graduates. All graduates are invited to join the SBFE Alumni LinkedIn group	
--	--	--	---	--

Report Ref.	RG Recommendation	Category	School Response	Timescale
CURRICULUM DEVELOPMENT AND REVIEW				
5.7	Enhanced visibility of SBFE's taught ME programme will be essential to ensure a supply of domestic students. SBFE should consider developing Stage 1, 2 or 3 modules of interest to existing College of Engineering and Architecture students. (SBFE's Design Challenge is an excellent example of such a module with broad appeal). A few well-placed modules could serve as a bridge between existing BE programmes in the College, and the SBFE ME programme. Potential new modules identified by industry partners include data science, project management and innovation/entrepreneurship. SBFE should consider developing additional Discovery modules and/or structured electives for greater exposure to undergraduates across UCD.	1/2	Agreed. The School has developed a new Discovery module and introduced an additional level 2 module to complement the module BSEN10010 Biosystems Engineering Design Challenge. Development of additional modules within our subject areas will be prioritised when new faculty are recruited.	A/B/C
5.8	Summer Research Studentships for undergraduate students of Engineering, Science and Agriculture would also be a useful recruitment tool.	1	Agreed. Summer research studentships will be offered to students this summer funded by SEAI and SBFE.	B
5.9	A journal club and/or seminar programme should be developed to accommodate the required taught credits for graduate research and taught graduate students, and also to help communications between prospective undergraduates, graduate students and faculty.	1	Our graduate taught students currently complete a module which addresses this recommendation. This module will now also be offered to our research students. Development of additional module(s) to address this recommendation will be prioritised when new faculty are recruited.	A/B
5.10	Students enrolled in the MSc programmes (Sustainable Energy & Green Technologies and Environmental Technology) were complimentary of SBFE for offering these options, and in general were positive about their educational	1	The revised Sustainable Energy & Green Technologies and Environmental Technology programmes do not include any modules in food processing.	A

	experiences. The same students expressed concern about module content indicating the desire for modules with more depth in the respective programme areas and less content in areas such as food processing.			
5.11	SBFE should redouble their efforts to ensure that BAgrSc students are more fully integrated into the School, as per suggestions below.	1	Agreed. Our BAgrSc students are included in all School activities and events e.g. networking events each semester to meet fellow students, faculty, staff and College Student Advisor. The Programme Director for the BAgrSc programme has been tasked with addressing this recommendation.	A/B
5.12	SBFE should work to close the loop on student advising and support by ensuring staff tasked with these responsibilities are sensitive to student needs, and that the students are aware of the support staff who are available to enhance their educational experience.	1	Agreed. SBFE programme directors and other staff complement our College Student Advisor in supporting and advising our students.	A
5.13	Questions concerning BAgrSc graduates' eligibility for Qualified Farmer (Green Cert) status should be resolved as soon as possible.	1	This issue has been finally resolved. Our degree programme is now included in the revised Revenue approved listing of courses which meet the criteria for Qualified Farmer Status.	A
5.14	SBFE should stay the course with the current educational programme restructuring to allow adequate time to develop recruitment strategies to fill the degree programme pipelines and to establish baseline enrolment numbers. After three years SFBE should commit to a critical review of the degree programmes to ensure these programmes are meeting student needs and are attracting sufficient student numbers to warrant their continuation. Of concern to the RG was the proliferation of taught Masters programmes and discontinuation of the undergraduate engineering programme.	1	Agreed.	A/B/C

5.15	SBFE should consider creative and novel options to attract increased numbers of Engineering students interested in the broad biological applications of engineering (courses with broad appeal in Stages 1, 2 and 3 of the BE, partnering with others in Biomedical Engineering etc.).	1	The School has developed a new Discovery module and introduced an additional level 2 module to complement the module BSEN10010 Biosystems Engineering Design Challenge. Development of additional modules within our subject areas including the Bioeconomy will be prioritised when new faculty are recruited.	A/B/C
------	--	---	---	-------

Report Ref.	RG Recommendation	Category	School Response	Timescale
RESEARCH ACTIVITY				
6.14	The RG encourages appropriate recognition of all research active areas within SFBE.	1	In general School faculty choose research areas in our discipline area taking into account their expertise, interests and funding opportunities. The School has three priority research areas which align with our taught programmes. The three priority areas are led by experienced faculty ensuring all research areas are equally promoted.	A
6.15	The School should consider providing for additional research support in its staffing plan.	1/2/3	The School has appointed a new Technical Officer qualified to PhD level and School Manager to provide a high level of support to School research activities. In addition School faculty access support for research proposal preparation through SFI Centres, Research Institutes and UCD Research.	D
6.16	Establish a regular seminar series in the School, which needs to be well-advertised in the University to attract student participation from different colleges.	1	In addition to annual research presentations from all SBFE research students, additional seminars are organised with invited experts in our discipline.	A
6.17	There is a need to leverage marketing and communications expertise across both Engineering and Agriculture in recruiting masters' students.	1/2	The School is well supported by our College Marketing team including the development of marketing materials. Targeting of B.Agr.Sc students is facilitated by the Agriculture programme office. The Agriculture Programme office marketing team also helps promote our Agricultural Systems Technology programme.	A
6.18	The communication channels between incoming students and faculty/staff need to be improved.	1	The School has introduced an induction day for all new incoming students each September. In addition our College hosts an induction event for all research students. A number of events are organised for students	A

			in the School each year to meet fellow students, faculty, staff and College Student Advisor. A new School newsletter has also been introduced to improve communications between all members of the School community.	
6.19	A plan for short, medium and long-term strategic investment in research laboratory space needs to be put in place and communicated to the College, University and Alumni/Industry.	1/2/3	<p>The School has been successful in securing internal Minor Capital Works (2017 and 2018) and UCDEquip (2018/19) grants to improve our research infrastructure and facilities. These grants address our most immediate requirements.</p> <p>In addition the School has an annual research spend of ca. €3m which facilitates the purchase of new research equipment.</p> <p>The proposed increase in research overhead return and existing school reserves will be used to support longer term strategic investment in SBFE research infrastructure.</p> <p>Plans for medium and long-term strategic investment in research laboratory space needs are being considered by our School research committee.</p>	A/B/C

Report Ref.	RG Recommendation	Category	School Response	Timescale
MANAGEMENT OF QUALITY AND ENHANCEMENT				
7.8	It would be useful for the School to engage with its students and other stakeholders to communicate how it closes the feedback loop.	1	SBFE faculty have introduced a range of initiatives in recent years in response to feedback from students, external examiners and employers. Programme directors and relevant module co-ordinators have been requested to communicate this information to relevant stakeholders.	A/B
7.9	A method for evaluating the success of the new BAgrSc pathway should be developed to capture its impact on a range of measures including enhancing student numbers, strengthening the quality of the student experience, employer feedback and take-up of SBFE Masters programmes.	1/2	Agreed. The Programme Director has been requested to report to the School on evaluating the success of the new BAgrSc pathway and identify/implement appropriate measures to increase the success of the programme. The inclusion of our programme in the revised Revenue approved listing of courses which meet the criteria for Qualified Farmer Status should help increase enrolment to the programme.	A/B/C
7.10	Ongoing attention to formal curriculum review and refinement needs to be placed across all programmes.	1	Curriculum review and refinement for all taught programmes is reviewed on annual basis.	A

Report Ref.	RG Recommendation	Category	School Response	Timescale
SUPPORT SERVICES				
8.7	The strategic campus development plan envisages that the SBFE be co-located with the other Engineering Schools, and this would significantly enhance SBFE's ability to collaborate with colleagues in the other Engineering Schools. However, in the interim the School should be supported in its plans to remodel the space it occupies on the 3rd floor of the Agriculture and Food Science Centre.	1/2	Agreed. The School has been successful in securing internal Minor Capital Works (2017 and 2018) and UCDEquip (2018/19) grants to improve our research infrastructure and facilities. These grants address our most immediate requirements. In addition the School has an annual research spend of ca. €3m which facilitates the purchase of new research equipment. The proposed increase in research overhead return and existing school reserves will be used to support longer term strategic investment in SBFE research infrastructure.	A/B
8.8	SBFE should work with UCD Estate Services to ensure that a swipe card system for out-of-hours access to the building is available for all graduate research students and staff.	1/2	Agreed. Discussions ongoing with UCD Estate Services to implement this recommendation through the Minor Capital Works programme.	A/B
8.9	SBFE has considerable software and hardware needs, not all of which are currently being met by UCD IT Services provision. Given the considerable research strengths in data science and new Agriculture Systems and Technology pathway in the BAgrSc programme, it is recommended that SBFE should carry out a needs assessment of their requirements, in conjunction with UCD IT Services, to identify whether any additional supports, for example campus-wide availability of relevant software licenses, could be made available and/or to identify items for SBFE's budget planning over the coming years.	1/2/3	Following discussions between our College and UCD IT services, additional support for campus wide availability of relevant software has been provided e.g. MATLAB. Funds have also been allocated at School level for specialist software to support teaching and research software requirements in our discipline.	A/B

8.10	SBFE should work with UCD Research and Innovation in its review of post-award services. In such a research active School this is an essential support, particularly for faculty winning larger grants.	1/2	SBFE works closely with UCD Research & Innovation/ Grant Registration Team in registering funding awards. A high level of support and assistance is provided to School faculty in a timely manner.	A
------	--	-----	--	---

Report Ref.	RG Recommendation	Category	School Response	Timescale
EXTERNAL RELATIONS				
9.8	Modules on innovation and entrepreneurship would be useful additions to the taught programmes, introducing students to fundamentals of concept and market. The RG recommends that modules offered by the UCD Innovation Academy be reviewed by the Teaching and Learning Committee with particular attention to explicit project management skills.	1/2	Currently some of our taught Masters students complete a module on Entrepreneurship. Consideration will be given to offering all taught Masters students a module on Innovation /Entrepreneurship by the SBFE Teaching and Learning Committee when new faculty are recruited this year. It should be noted that opportunities exist for all SBFE research students to participate in modules offered by the UCD Innovation Academy.	A/B
9.10	Outreach activities did not come across as a priority. Additional student outreach activities could be a useful way of enhancing UG enrolments.	1	The School has increased its involvement in student outreach activities. School outreach activities are now formally recorded at School level. In addition, many School faculty are PIs in large H2020/SFI/SEAI projects which have formal outreach activities ongoing/planned.	A
9.11	It appeared the strong relationship with industry was not being fully leveraged to assist with challenges experienced with student enrolment. Representatives from industry were eager to do more and become more involved in the taught programmes in a range of different ways. It is recommended that these are explored via the planned Industry Advisory Group.	1	SBFE engagement with national and international industry partners has increased through recent joint research funding awards (e.g. EI & SFI Centres, H2020) and the introduction of internships modules and research placements. SBFE leverages the Industry Advisory Group to increase industry collaboration on our teaching and research programmes.	A/B/C
9.12	SBFE should carefully review its approach to social media and refine as necessary to more fully engage with prospective students and to enhance the publicity and interest surrounding the educational and research programmes.	1	The appointment of a School Manager with expertise in social media platforms has increased publicity and interest surrounding SBFE teaching and research programmes.	A/B

