Quality Assurance / Quality Improvement

Internal Quality Review Programme

2014-2015

Quality Improvement Plan

School of Physical Sciences

11 June 2015

Contents

1. INTRODUCTION

The School of Physical Sciences Quality Review was carried out during 2014 and culminated in the Peer Review Group (PRG) visit which took place during December 2014. Overall, the response of the PRG was very positive, acknowledging the substantial contributions made by the School to all the principal goals of the DCU Strategic Plan "Transforming Lives and Societies 2012-2017". In particular, the School was seen to perform exceptionally well in research in line with similar sized members of the Russell group of research-intensive UK universities. Overall, the School demonstrated substantial activity in Enterprise Engagement and Translation and other key areas of the Strategic Plan.

In total, the PRG has 30 recommendations, ranging from P1 (priority 1) to P3 (priority 3). The School welcomes this thorough analysis and resultant set of recommendations, noting that some issues arising had already been identified in the course of the self-assessment and furthermore, that actions in respect of quite a few have already been initiated. The detailed and extensive nature of the recommendations, along with the very positive feedback received from the PRG, which is summarised above, have provided us with much food for thought in the construction of both the 1 year and 3 year plans, as detailed below. The School will endeavour to implement these recommendations under the two schedules detailed below, subject to appropriate support and, in some cases, resources being provided by the Faculty/University. For coherence, where relevant, we have combined some of the recommendations.

2. SUMMARY OF THE ONE-YEAR PLAN

No.	Action	Completion date	Lead
Strategy			
1/P1/A	School Strategy brochure	Dec. 2015	Enda McGlynn Greg Hughes
Organisation & Management			
3/P1/U/A	Leadership development & succession planning	June 2016	Head of School
Staffing			
8/P1/A	Future Staffing Strategy	Dec. 2015	Colette McDonagh
Research			
11/P1/A	Consolidate research groups	June 2016	Miles Turner
12/P2/A	Improved communication to graduate students	Completed	Colette McDonagh Eilish McLoughlin
15/P1/A	Project CASTeL as leading National research institute	A	Eilish McLoughlin
Teaching & Learning			
1/P1/A	Evaluate sustainability of M.Sc. Plasma & Vacuum	June 2016	Paul Swift, Head of School, Teaching Convenor
20/P1/A	Review of undergraduate programmes	September 2017	Teaching Convenor and Chairs of Physics programme boards.
21/P1/A	External Advisory Panel	Dec. 2015	Colette McDonagh

22/P1/A 23/P2/A 24/P2/A	**Combined actions** • Benchmark lab teaching against competitors • Address professional development issues • reorganise existing professional development module	22 – 1 year 23 – 2 years 24 – 2 years	Colette McDonagh and Chairs of Programme Boards
26/P1/A	Ensure equitable INTRA experience for all students	June 2016	Paul Swift, School Intra Coordinator and Chairs of physics programmes.

3. SUMMARY OF THE THREE-YEAR PLAN

SUMMARY OF THE THREE-YEAR PLAN

No.	Action	Completion date	Lead
Organisation and Management			
2/P2/A	Transparent workload model	July 2016	Head of School
Research			
13/P2/A 14/P2/A 17/P3/U/A	• Leveraging INTRA • EU funding for Ph.D.s • IRC-Ph.D. funding	June 2018	Researcher Convenor Postgrad Coordinator INTRA coordinator
Translation, Enterprise, Engagement			
18/P2/A	Develop Marketing material for research with help from Hubs	September 2016	Research Convenor Head of School
25/P2/A	Alumni links as a resource	Sept. 2018	Eilish McLoughlin Paul Swift Teaching Convenor
28/P2/A	Emphasise role of CASTeL in marketing of physics programmes	Sept 2018	Paul van Kampen
29/P3/A	Continue to develop external engagement e.g. NUIM, DIAS	Sept. 2018	Teaching convenor Masha Chernyakova Head of School
30/P3/A	Track engagement with second level schools/TY students	Sept. 2018	Eilish McLoughlin Henry Barry
26/P1/A	Ensure equitable INTRA experience for all students	June 2016	Paul Swift, School Intra Coordinator and Chairs of physics programmes.

4. Response to the Recommendations for School of Physical Sciences

The following notation is used in the recommendations for improvement.

P1: A recommendation that is important *and* requires urgent action.
P2: A recommendation that is important, but can (or perhaps must) be addressed on a more extended time scale.
P3: A recommendation which merits serious consideration but which is not considered to be critical to the quality of the ongoing activities in the Area.

Additionally, the PRG indicate the level(s) of the University where action is required:

A: Area under review U: University Senior Management

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
			Strategy		
1	A	1	Develop a School level strategy/PR brochure which highlights the significant way in which the School contributes to the Faculty and University and clearly publicises the School's outstanding contribution to the DCU Strategic plan internally and externally.	The School welcomes this recommendation. This brochure will be prepared over the next 6 months subject to the appropriate financial resources being provided by the QPC. A proposal will be submitted in conjunction with this Improvement Plan. **Timeline**: 6 months, completed by December 2015 **Leads:** Enda McGlynn and Greg Hughes	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
			Organisation and Management		
2	A	2	Develop a transparent semi-quantitative workload model.	The School has an existing fair and transparent workload model which has been agreed by all Academic Staff and which is based on the University's principles for academic workload allocation. Prior to the beginning of the academic year, the Head of School meets with each academic individually to discuss and agree on any new teaching duties or other responsibilities. Following on from this, a document is circulated to all staff which details all lecturing and laboratory allocations, project supervision duties and administrative responsibilities for each staff member, both academic and technical. After discussion with representatives of the PRG, we consider that no further action is required for this recommendation. **Timeline:** Completed **Lead:** Head of School	**University note**: The University welcomes the School's plans and its contribution to further development of the workload allocation models and processes, building on University's principles for academic workload allocation and the Faculty's stance. The current Government's strategy for reform of Higher Education in Ireland speaks to the need for transparency on this issue.
3	U/A	1	Facilitate appropriate leadership development and succession planning.	This recommendation is directed largely to the University. The School, through the Faculty of Science and Health, will propose that the Deputy Head position become a formal University position to assist and support the Head in their role and to facilitate longer term planning and leadership development in the School. Leadership Development will be further addressed by Human Resources and Succession Planning by the Dean and Senior University Management **Timeline:** One year, completed by June 2016. **Lead:** Head of School	A successful Academic Leadership Programme, which takes a blended approach, already exists within the University. In addition, the Training and Development Manager works with Heads, Deans and Directors to design bespoke interventions as appropriate. Also, in the past 2 years the University has implemented a number of significant promotion and retention schemes, mainly for senior staff (*viz.* Extraordinary Promotion Scheme, Retention Policies, Strategic Appointments). In all of these a major focus has been on recognising and developing senior leadership within DCU.

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
4	U	2	Facilitate a structured mentoring system and networking opportunities for heads of School and other School based leaders.		The existing DCU mentoring programme has been extended since it was originally launched. The HR Training and Development Manager will work with the Dean to explore how this recommendation can be integrated with the existing mentoring scheme and the university Heads and Dean meeting.
5	U	1	Re-introduce the Performance Management Development Scheme (PMDS).		While the existing PMDS is under review, PMDS is still operational. HR will advise the Head of School of the potential roll out of PMDS across the university.
6	U	1	Continue efforts to centralise timetabling to facilitate inter-School and inter-faculty activity.		The current work on timetabling within the University is entirely focussed on having a working timetable for the academic year 2015-16 when the DCU Incorporation process commences. In the 3rd quarter of 2015 this work will broaden to address the timetable for 2016-17 and, in this context, the concept of centralised timetabling will be considered along with other options.
7	U	2	Make budgeting more transparent at Faculty and School level.		The University budgeting process (including monthly monitoring and reporting) has been updated this year. The process is transparent at University/Faculty level and thereafter the responsibility for transparency is local.

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
			Staffing and Accommodation		
8	A	1	Prepare and present future staffing strategy to senior management.	An outline 5 year plan has already been drafted in 2013 by the Head of School and discussed with the Dean. This plan will be developed further and presented to the university's Senior Management Group (SMG) by end 2015. **Timeline**: 6 months, completed by December 2015 **Lead:** Colette McDonagh	
9	U	2	Consider how to recognize the contribution of staffing groups appropriately.	**School Note:** The School regularly nominates colleagues for the President's Awards for both Teaching and Research. The School has an excellent record of success in this whereby we have had three awards for Research and two for Teaching for academic staff in recent years. Furthermore, a member of the School technical staff has recently been nominated for, and subsequently awarded the President's Award for Teaching Support for 2015.	DCU acknowledges the excellent contributions that technical, IT and Administrative staff continually make to the University. Such contributions are recognised in a number of ways: personal/professional development opportunities, promotion and through the annual President's Awards for Research, Excellence in Teaching, Innovation and Civic Engagement for all categories of staff including academic, technical, administrative and support. The University will explore further the recognition of staff groupings. It should have more room to manoeuvre if (and when) the Employment Control Framework (ECF) and Haddington Road restrictions are lifted/amended.

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
10	U	1	Ensure the estates maintenance programme is fit for purpose and communicate it effectively to the wider University.		The Estates Office Planned Preventative Maintenance programme is severely constrained by available resources and, therefore, continues to focus on health and safety matters as well as plant and machinery essential for building operations. The Director of Estates recently gave a detailed presentation on the Estates Office and its functions, including maintenance, to the Heads and Deans Group
			Research		
11	A	1	Consider consolidating research groups into a smaller number of research clusters.	This has already been discussed in the School. It is quite feasible for some groupings, particularly in the area of materials / nanomaterials / semiconductors (where it is in fact happening presently) but quite challenging for other areas, e.g Astrophysics, as there is only one academic staff member in this area. The recommendation will be considered and some degree of clustering will be proposed and implemented in line with the university's strategic research plan in particular relation to Hubs and Platforms. **Timeline:** One year, completed by June 2016 **Lead**: Miles Turner	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
12	A	2	Ensure adequate communication to PhD students about the Structured PhD programme.	This issue has already been addressed. A meeting was held in early February 2015 which took the form of a welcome reception for new students but was attended by all Physics postgraduate students. The new Structured Ph.D. programme was presented and discussed and questions answered. The students were circulated in advance with all the documentation. This will now become an annual event. Furthermore, Dr. Eilish McLoughlin has agreed to act as Postgraduate Liaison person in the School and she, in conjunction with the Teaching Convenor, will be the main point of contact for postgraduate students, apart from their supervisor. **Timeline**: Completed **Lead**: Colette McDonagh and Eilish McLoughlin	**University Note:** In March 2015 the Graduate Studies Office (GSO) met with academics in the School and provided data on their research students' engagement over the last three years with the Graduate Training Elements (GTE) on their structured pathway. This data, which provides an indicator of the success of the communication and support put in place, will be available to the Head of School as a matter of course from 2015/16 as a result of a Quality Improvement and Development (QuID) supported initiative in IRIS.

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
				Note: 13, 14 and 17 have been combined	
13	A	2	Leverage the INTRA programme for industrially funded PhD students.	The combination of these 3 recommendations represents a long term (3 year minimum) strategy. Currently, there is a good record of follow on final year projects arising from INTRA placements and the INTRA coordinator and project supervisors will attempt, where appropriate, to try to translate these Industry interactions into Enterprise Ph.D. funding applications. The successful event celebrating *30 Years of Physics in DCU* held on 29th May 2015 will also provide some initial contacts for progressing industry-funded Ph.Ds. This event had ***three core objectives:*** -Showcasing research and innovation in Physics at DCU - past, present and future. -Highlighting how DCU Physics research and innovation is relevant to enterprise -Exploring R&D partnership opportunities between DCU and enterprise. Participants at this event included the academic staff and researchers from across the school, physics alumni (BSc/MSc/PhD) and industry personnel. Opportunities for collaboration that were highlighted to enterprise are: -Employ/Sponsor an Intra student -Sponsor a fourth year project -Sponsor a PhD scholarship - through the IRC Enterprise Partnership Programme / Employment	
14	A	2 3	Explore participation in /leadership of COST/ ITN programmes as a means of PhD funding and of evening the distribution of PGR students in the School.		
17	A/U		Develop a coordinated approach to Irish Research Council / graduate funding with Vice-President for research and Dean of Graduate Studies		The GSO will work with the School to optimise sections of Irish Research Council applications which leverage the Physics structured pathway and university research student support in particular and, in conjunction with RIS, will support aspects of ITN applications.

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
				Based Programme -Sponsor a Postdoc fellowship - through the IRC Enterprise Partnership Programme -Partner collaboration on a national/international project proposal. The school is collaborating with the Research Hubs, Invent and RIS in organising and identifying enterprise partners to be invited. **Timeline**: Promotion material and website to be updated in next 6 months (see also response to recommendation 1) **Lead:** Research Convenor (currently Lampros Nikolopoulos Intra Coordinator (currently Paul Swift currently), postgrad coordinator (currently Eilish McLoughlin) Production of a video to market opportunities for university-enterprise partnerships. Participation in COST actions and ITN networks is ongoing with at least one application currently in progress, as well as leadership/membership in a number of others (an activity also recently promoted at Faculty level). We will work with the Dean of Graduate Studies to develop a coordinated approach to IRC Ph.D. funding as recommended. **Timeline:** 3 years, completed by 2018 **Lead:** Research Convenor, Postgraduate Coordinator, INTRA Coordinator	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
15	A	1	Project CASTeL as a nationally leading research institute.	CASTeL is currently revising its strategic plan and will extend its membership and expand its vision to advance STEM education research, practice and policy, through the collaborative and targeted efforts of teams of subject specialists, researchers and practitioners from across DCU. CASTeL and STEM education will be strongly represented in the newly established Institute of Education structure, e.g. through the establishment of dedicated physical infrastructure. Currently funding is being sought to establish a Chair in STEM education to provide higher visibility and leadership to this growing research centre of excellence for research in STEM Education. Through these actions, CASTeL has as its mission to undertake research to: Impact and enhance STEM education practices, early childhood to postgraduate level; Influence institutional and national STEM education policies; Lead and enrich national and international STEM education initiatives **Timeline**: CASTeL strategic plan to be launched in the next 6 months. The job specification for a Professor in STEM Education has been prepared. Discussions regarding funding are taking place with a potential donor. It is expected that the funding will be obtained and the post will be advertised before the end of 2015. CASTeL physical spaces and online presence to be revised and launched in next 12 months. **Lead**: Eilish McLoughlin (Director CASTeL)	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
16	U	2	Examine the feasibility of a University/Faculty funded Graduate Teaching Assistants programme.	**School Note:** As part of the DCU Research Career Framework, postdoctoral researchers in the School engage in teaching activities e.g. lecture modules, either in full or in part, laboratory coordination / supervision and special tutoring e.g. in electromagnetic theory and mathematics, as well as 4th year project supervision and mentoring and INTRA placement supervision. In addition, a small number of senior postgraduate students (in their final year) are paid by the School to deliver specialist laboratory programmes and specialist Year 3 laboratory demonstrator training, as well as occasional small activities (e.g. a short introduction to Latex word processing for PHA students from a senior postgraduate well-versed in this package).	Currently there is no central funding availability for this recommendation. The University's Researcher Career Framework may be of assistance in achieving the intended aims, however.
			Translation and Enterprise		
18	A	2	Develop marketing material for research strengths using support from the Hubs.	This recommendation was already part of the School's Research Strategy and will be implemented using as a baseline the documentation developed for the *30 Years of Physics in DCU* event, funded by the Research and Innovation Enhancing Performance scheme. The brochure to be prepared for recommendation 1 will also contribute to this. **Timeline**: 18 months, completed by September 2016. **Lead**: Research Convenor, Head of School.	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
			Teaching and Learning		
19	A	1	Evaluate the sustainability of the MSc in Plasma and Vacuum Technology.	This is already under discussion both within the School and with the Dean of the Faculty. The School is committed to delivering all modules until all students currently registered on the programme have completed. A decision will be made in the next 12 months on the future viability of the programme. **Timeline**: One year, completed by June 2016 **Lead**: Programme Chair, Paul Swift, Head of School, Teaching Convenor	
20	A	1	Review the three main undergraduate programme offerings to consider whether they deliver the desired learning outcomes in the present form or where a single programme with built-in options is more appropriate.	This process will begin in the next 12 months but the completion date will depend on the timescale of processes within the University, as recommended by the IUA Task Group on Reform of Undergraduate Selection and Entry (IUA TGRUSE) and other relevant groups, to modify and reduce CAO entries. In the context of this, the School will look at module content and learning outcomes and make appropriate modifications as well as designing any new modules that are deemed necessary to improving the quality and relevance of the programmes. **Timeline:** 1 -2 years **Lead**: Teaching Convenor and Chairs of Physics programme boards.	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
21	A	1	Establish a School external advisory forum to advise on structure and content of programmes as well as strategy, enterprise and engagement.	This will be implemented by end December 2015. A forum of advisors will be created to assist and advise the School and membership of the forum will most likely comprise representatives from industry and academia and will include two DCU physics graduates who hold senior positions in the industry/enterprise sector. The School will also liaise with the Faculty and the DCU Alumni Office. **Timeline:** 6 months, completed by December 2015. **Lead:** Colette McDonagh	**University note:** The School is recommended to liaise with the Faculty on this recommendation, as the Faculty committed to establishing an Industrial Advisory Forum following its 2012/2013 Quality Review.
				Note: 22-24 are merged as they are related.	
22	A	1	Benchmark the amount of lab teaching against competitors and explore whether the desired learning outcomes can be delivered within a less laboratory-intensive component.	The process mentioned under recommendation 22 has already started. Information has been requested from other Department/Schools of Physics in the Republic of Ireland on the proportion of laboratory/project credits in their physics programmes. The School has begun the process of modifying the Laboratory and project module learning outcomes to reflect a broader range of activities during laboratory time-tabled hours for example scientific writing, CV and interview training, science communication etc. which will address recommendations 23 and 24. **Timeline:** 22 – one year; 23 – 2 years; 24 – 2 years **Lead:** Colette McDonagh and Chairs of Programme Boards	
23	A	2	Address the transformation objective in the DCU strategic plan by developing learning outcomes related to university objectives including science communication, entrepreneurship team working, adaptability, lateral thinking and aptitude.		
24	A	2	Consider moving aspects of professional development into earlier years (year 2), e.g. interview skills, CV writing, presentation skills, project management, rudiments of business, preparation for INTRA.		

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
25	A	2	Develop alumni links as a resource for career development advice, INTRA placements and other areas.	The School already involves alumni in school/programme career and professional development events. The database will be expanded in conjunction with the DCU Alumni Office and school social media channels will be set up, i.e. linked In and Facebook. **Timeline:** 3 years, completed by 2018 **Lead:** Eilish McLoughlin (Alumni Officer), Paul Swift (INTRA coordinator), Teaching Convenor.	
26	A	1	Ensure an adequate and equitable INTRA project experience for all students.	This recommendation has been discussed and solutions currently being considered and debated within the School include moving the Astronomy field trip to allow Physics with Astronomy students to avail of both the field trip and a (slightly shorter) industrial Intra and ensuring that students who do not get placed in industry be provided with a valuable and equitable internal Intra experience. The preferred solutions will then be discussed with other relevant colleagues including the Intra Office. For example, one option being considered is to collaborate with the Schools of Chemistry and Biotechnology in an existing project where a series of workshops and industry-based case history assignments are made available to students not placed on conventional INTRA as a valuable alternative for internal INTRA placement. **Timeline**: One year, completed by June 2016 **Lead**: Paul Swift, School Intra Coordinator and Chairs of physics programmes.	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
27	U	1	Maintain excellence in the student experience in Physics by injecting resources into the teaching laboratories.	**School Note:** We welcome this recommendation from the PRG. The deteriorating state of our undergraduate laboratories was highlighted throughout the review process both by the undergraduates in the course of the surveys, by the postgraduate student demonstrators and by the academic and technical staff. We now regard this as a crisis situation both for the School and the University. We hope that the University will acknowledge that this situation has major implications for the quality of the learning experience of the students and also has the potential for reputational damage for the University. Notwithstanding the budgetary restrictions, we request that adequate and ongoing funding be provided by the University.	The University acknowledges the pressing need to replace ageing laboratory equipment but, currently, there is no capital funding available for the recommended investment and DCU does not foresee any government funding for capital projects in the near future. In the medium—long term, the new Campus Development Plan may provide some of the necessary funding across the faculties/schools. The availability of such funding is dependent on the University's ability to obtain and repay loan capital for such purposes, which is challenging in the current economic environment. The School/Faculty is also encouraged to explore alternative sources of funds via, for example, non-exchequer income or donations (with the assistance of the DCU Educational Trust and/or the DCU Alumni Office).
			Engagement		
28	A	2	In the marketing of Physics programmes, emphasise excellence in teaching innovation and pedagogy through CASTeL.	In the marketing of Physics programmes, the excellence in teaching innovation and pedagogy through CASTeL will be emphasized. This will focus on specific examples of how research has informed the development and implementation of laboratories and modules with demonstrably improved student learning as a result for example in Electromagnetism and Introductory Mechanics. **Timeline:** September 2018. **Lead:** Paul van Kampen	

Rec	Level	P	PRG Recommendation (Provided in PRG Report)	School Response	University Response
29	A	3	Develop external engagements further, particularly with Maynooth University and DIAS to help deliver specialist programmes.	This process is ongoing whereby the School currently shares 2 final year modules with Maynooth University (MU) Physics Department via video conferencing. We also have links with MU at Year 3 and 4 levels for Astronomy Laboratories, 4th year projects, and other astronomy-related interactions. At postgraduate level, we currently share 2 graduate students with DIAS co-supervised by colleagues in DCU and DIAS. It is anticipated that these interactions will be developed further over the next 3 years, though further developments of formal sharing of modules will require support from the University in terms of suitable facilities for video conferencing etc. **Timeline:** ongoing, completed by 2018 **Lead:** Teaching Convenor, Head of School, Dr. Masha Chernyakova, Chair Astronomy Programme.	
30	A	3	Track engagement with secondary school students via a School database and record Transition Year / CTYI student links and follow-up with such students in terms of programme recruitment.	This process has already begun through Dr. Eilish McLoughlin's role as School Liaison officer. In this, she will have assistance from Mr. Henry Barry, Technical Officer, who coordinates the School Transition Year and related programmes. **Timeline**: ongoing, completed by 2018 subject to any data protection issues. **Lead**: Dr. Eilish McLoughlin, Mr. Henry Barry.	

APPENDICES

1. **Area Quality Committee (for the Self-Assessment Report)**

Name	Role in School	Contribution to process
Prof. Colette McDonagh (CMD)	Head of School	Chair of committee and coordinator of process. Contribution to management section of SAR
Dr. Eamonn Cunningham (EC)	School Teaching Convenor	Contribution to SAR on Teaching & Learning
Dr. Lampros Nikolopoulos (LN)	School Research Convenor	Contribution to SAR on Research & Scholarship
Ms. Lisa Peyton (LP)	School secretary	Contribution to SAR e.g. printing, binding, other administrative roles in relation to Panel visit
Mr. Alan Hughes (AH)	Chief technician	Contribution to SAR in relation to space, safety, etc.
Dr. Justin Bogan (JB)	Postdoctoral Researcher	Encouraging participation by Researchers in Staff Survey, assistance with analysis and contribution to improvement plan
Mr. Ben Delaney (BD)	Postgraduate student	Encouraging postgrads to participate in the postgraduate survey; assistance with data analysis and contribution to the QuIP.

2. **Peer Review Group members**

Prof. Ronan McGrath Head, School of Physical Sciences, The University of Liverpool
Professor Andy Shearer Head , School of Physics, NUI Galway
Dr Sheila Gilheany Policy Advisor, Institute of Physics in Ireland
Dr Caitríona Lally School of Mechanical and Manufacturing Engineering, Dublin City University
Dr Stephen Daniels School of Electronic Engineering, Dublin City University

3. **Area Quality Committee (for the Quality Improvement Plan)**
   Prof. Colette McDonagh Head of School
   Prof. Enda McGlynn, Deputy Head of School

4. **Prioritised Resource Requirements**

Project 1: Quality Improvement of Physics Undergraduate Laboratory Experience.

Priority		Approx cost incl Vat
1 Academic year 2015-16	Repair, refurbishment & new experiments Years 1-4 Physics laboratories	**€58,185**
2 Academic year 2016-17	Repair, refurbishment & new experiments Years 1-4 Physics laboratories	**€40,599**
	Total Requested See Appendix 5 below for itemised equipment list	**€98,784**

Project 2: Development and production of School strategic vision and PR brochure
Total Requested: €1000