



University College Dublin

Quality Improvement Plan

School of Chemistry

November 2022

1. Introduction

Give a very brief introduction to the approach taken in the development of the Quality Improvement Plan, including the dates of the original review and the names of the Quality Improvement Committee.

The final Report of the Review Group was received on June 17th 2022. Because this was during the holiday period, there was a hiatus. The HoS met a Senior Quality Officer from the UCD Quality Office on July 27th and made a report to the School Executive Committee on July 29th. The Executive decided that the School should aim to complete the QIP by Sep 9th and that the members of the Executive were best placed to take responsibility for preparation of the QIP.

The QIC, many of whom had also been on the Self-Assessment Report Coordinating Team, included the HoS, the DHoS, (who became HoS from Sep 1st) and the chairs of the School's safety, teaching and learning, research, global outreach, research, graduate school and EDI committees, the School's CTO and the School manager.

The QIP was completed on Sept 16th and circulated for comments to the School on Sept 19th. It was then forwarded to a representative of the UCD Quality Office on Sept 23rd.

Categories

1. Recommendations concerning academic, organisational and other matters which are entirely under the control of the unit
2. Recommendations concerning shortcomings in services, procedures and facilities which are outside the control of the unit
3. Recommendations concerning inadequate staffing, and/or facilities which require recurrent or capital funding

Timescale

- A. Recommendation 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	RG Recommendation	Category (see list above)	Action Taken/Action Planned/Reason for Not Implementing	Timescale (see list above)
ORGANISATION AND MANAGEMENT				
2.10	<p><u>Internal Communications:</u> There is a challenge with cohesion between staff within the School: the pandemic has negatively impacted further on communication and removed opportunities for informal day-to-day interactions. The Review Panel recommends (i) a review of formal communication channels, with the development of a communication plan for the School to ensure that information is disseminated among all members of the school community; and (ii) establishment of an action plan to re-establish social events and other informal interactions between colleagues.</p>	1	<p>Action: Regarding (i) There are email distribution lists in use for academic staff, technical staff, PDRA, and Postgraduate students (research and taught). This has been reviewed by the exec committee and a set of guidelines for communications prepared and circulated. Exec will discuss whether occasional newsletters from HoS are appropriate (two of these have been sent to date). The school should generate an organogram showing the relevant people dealing with different roles in the school. Meeting minutes will be available on the School's google drive. New staff are introduced to these during their orientation.</p> <p>Regarding (ii), in the past there was a regular informal meeting of academic staff each day 11 -11.30. The space for this was lost during the renovation of Science South. There are plans (and agreement at College level) to re-establish the School's common room but it is likely this will be a longer intermediate term solution dependent on the overall Science West and North renovations. As an intermediate action, coffee will be scheduled in the School kitchens, while acknowledging that this space is not ideal (this has commenced).</p> <p>In terms of other informal interactions, the School reinstated the post-exams dinner and will have pre-Christmas gatherings. Seminars with coffee have returned, Social lectures,</p>	A/B

			e.g. promotion celebrations, major UG gatherings, Wheeler lectures will be held. School Away days will become more regular events (2 per year).	
2.11	<u>Continued Organisation Review</u> : The Review Group recommends that the School continues the current organisational review, standardising terms of reference and meeting schedules of various School standing committees. The School should also ensure that representation in committee memberships is considered, in accordance with the Gender Equality Action Plan, but also to include research staff/postdoctoral researchers/early career researchers where appropriate.	1	Action: School committees to draw up or review Terms of Reference. Committees will set out meeting schedules/dates. Committees will meet at least once per trimester and ad hoc as required. UCD policies are that there is a balance of M/F committee members – but in cases where this leads to female colleagues being over-burdened this will be reviewed. If appropriate, committees will expand membership (to include PDRA / graduate students)	B
2.12	<u>Post-Doctoral Staff Support</u> : The Review Group recommends that the School establishes a community of practice/peer forum for post-doctoral researchers, including social aspects, mentoring, personal / professional skills development, pastoral care.	1	Action: A first meeting of the post-doctoral forum has taken place (July 22) and actions from this include a reminder to PIs that 1-on-1 career meetings are mandatory, a template for PDRA access to teaching experience, a rolling PDRA research presentations day, a PDRA google folder containing information on professional skills and career development training provided by UCD. A second meeting – along with the PDRA seminar took place in Nov 22.	A
2.13	<u>Student Engagement</u> : The School should re-establish the Undergraduate and Postgraduate Fora as standard, to engage with students, facilitating an important mechanism for student input to their programmes and the School (see also Recommendation 5.6).	1	Action: UG and PG staff student committees will be (re)established in the coming year. Meetings will be held once per trimester beginning in 22-23. Terms of reference and meeting schedules will be agreed and established.	A
2.14	<u>Workload</u> : The School should continue to implement and refine the academic workload model and workload allocation as a matter of priority (in tandem with rationalisation of teaching workloads through curriculum and assessment review) to ensure equitable allocation of workloads taking into account where staff are in their career paths.	1	Action: The existing principles will be reviewed, an up-to-date version of the Work Allocation Model (WAM) spreadsheet will be generated. This will be available to all academic staff and will be reviewed to highlight inequities. We will attempt to assign some weightings to different (School, College and University) administrative tasks to better enable coarse-grained comparisons with teaching workloads, and indications of research activity (in April 2023).	B
STAFF AND FACILITIES				
3.12	<u>Academic Workloads</u> : One of the main findings of the Review Group is that the academic staff are struggling with high administrative and teaching workloads. The high (and rising) student:staff ratio creates not only high teaching loads, but also a	1/3	The School acknowledges this as a serious issue and will take a number of actions, including Action: (i) to utilise its strong budget position and UCD/HEA supports to increase the number of	A/B

	<p>high administrative workload associated with teaching management. These issues are particularly associated with large cohorts of non-chemistry specialists in the earlier stages of their degrees who require 'service' teaching, with management of such large cohorts resulting in a particularly high administrative overhead which is in addition to the substantial admin jobs already given to relatively junior academic staff. Fortunately, the solution to this is clear: the high amount of service teaching is generating a financial surplus, some of which needs to be used to (i) expand the academic staff complement, and (ii) increase administrative provision which would be a cost-effective way of saving staff time. An increase of the academic staff complement will have the knock-on benefit of increasing the School's critical mass in research terms too. Review and consolidation of the large number of modules with small student enrolments (29/87 modules with <10 students in 2020-21) should also be undertaken to keep teaching workloads under control.</p>		<p>academic staff (the number should increase by at least three during the next academic year).</p> <p>(ii) In consultation with the technical officers, discuss and review processes to streamline administration to reduce the overall burden. This will involve an undertaking by academic staff to work to harmonise and rationalise stage 1 provision. This review will identify needs which the school will attempt to meet.</p> <p>(iii) to conduct a review of its modules and majors to identify offerings that are not sustainable.</p> <p>Action: Detailed analysis of budget situation to see if reserve is likely to grow sufficiently to sustain further academic, Admin, or TO hires (Nov 22).</p> <p>Action: If budget permits, make the case for one additional faculty member (or, if the school decides a Teaching Fellow) to support service teaching. (Nov 22)</p> <p>Action: Review small cohort modules, some are MSc and co-taught, some are Dublin Chemistry and TCD students are not recorded in UCD systems, and one GT programme has been discontinued, but a full review is needed. (Nov 22)</p> <p>Action: Review service teaching to identify possible efficiencies and/or standardisations. (April 23)</p>	
3.13	<p><u>Use of Teaching Specialists:</u> The Review Group observed that the University seems to have a very negative attitude towards academic teaching specialists, giving them only fixed-term positions with no career development, thus making this a very unattractive type of position. Yet, in a school where teaching loads are very high (and student recruitment is set to increase), and there are some outstanding research specialists who do little or no teaching, some teaching specialists would be obviously valuable.</p>	1/3	<p>The School does agree that targeted roles to support teaching would make a significant impact to current staff workloads, particularly in undergraduate laboratory provision. At the School's recent Away Day on undergraduate laboratory teaching, the potential of online tools to prepare our students for the lab and assess their understanding upon completion, was identified as a way to reduce the time taken by academics and enhance student engagement.</p> <p>Action: Consider budgeting for the appointment of Teaching Fellow (on a project-based appointment) to support the development of online elements to support the practical elements of the School's undergraduate programmes, in particular our large (ca 200-450) Stage 1 and Stage 2 Chemistry modules. This appointment would also develop standardised processes for coordination of demonstrators, laboratory rotas for students, laboratory report submission and grading and contribute to a (horizontal and vertical) review of our laboratory syllabi (see 4.15).</p>	A/B
3.14	<p><u>Deployment of Teaching Specialists:</u> The Review Group believes that there are several areas where the School would strongly benefit from being allowed to make teaching-focussed appointments. Firstly: some of the relatively routine, high-volume</p>	1/3	<p>A Teaching Fellow role and potential appointment is discussed above (3.13). The appointment of a Teaching Fellow would not substantially lessen the requirement for PhD demonstrators.</p>	B/C

	<p>service teaching could be devolved to teaching specialists. Secondly: the large amount of laboratory teaching would benefit from oversight by a dedicated teaching laboratory specialist with a remit to look horizontally across the various modules to ensure proper integration of lab skills within a year group (Note: a coherent programme of lab-based skills development is a key part of the curriculum in its own right and need not be subservient to the classroom content of a particular module). Thirdly: the School is heavily over-reliant on PhD students to do a lot of teaching-lab demonstrating, which is neither desirable nor sustainable, and indeed unreasonable if PhD students are also supervising undergraduate project students in the research labs. Employment of dedicated laboratory-based teaching staff would ease strains elsewhere. The Review Group notes that judicious use of such teaching specialists is quite common internationally across the HE sector for example in the UK and the US.</p>		<p>Action: The School will look at the requirement for increased numbers of PhD fellowships that will act as TAs given current and projects increases in UG numbers as relying on the current cohort's number would result in increased hours (negatively affecting PhD projects). We will discuss this with appropriate leaders in the College and University.</p>	
3.15	<p><u>Administrative Staff Complement:</u> The complement of administrative staff (three) is small for a school of this size and complexity. Some administrative functions that departments in other universities might manage themselves are, in the UCD structure, met at College level (e.g. provision of internships, student support); but it remains clear that a significant amount of routine administration and management of teaching, associated in particular with large student cohorts, is devolved to academic staff (see also Recommendation 3.12). This is a poor use of resources.</p>	1/3	<p>We will review the number of administrators, and if student and faculty numbers continue to rise an increase will be considered. It would be hoped that processes developed by the Teaching Fellow (see above) would minimise the routine administration associated with larger laboratory cohorts. (Nov 22 for discussions on a new TF, Nov 23 for Admin)</p> <p>Action: There will be consultations with assessment regarding processes for exams (and removing some admin functions from module coordinators), the science programme office regarding extenuating circumstances, and we appreciate that the TF hire will lessen the burden in larger modules.</p>	C
3.16	<p><u>Mentorship / Career Development:</u> Mentorship (long-term, beyond initial induction) was raised as an issue by academic staff, administrative staff, and members of the post-doctoral community. Members of the technical staff mentioned that they found it difficult to access information about development opportunities which is particularly</p>	1	<p>Regarding academic staff, a mentorship programme currently operated in the School of Computer Science will be modified for use in the School of Chemistry and will be implemented for incoming (Autumn 22) Assistant Professors.</p> <p>Information about the training and development opportunities provided within UCD will be made available on the School's google drive and all staff will be reminded about this periodically.</p>	B

	important for them as they can only get promotion by moving to a new role or substantially expanding their skill sets. The Review Group recommends that the School uses the Performance for Growth (P4G) mechanism as an opportunity for identifying and determining staff training needs.		Action: More systematic approach to mentoring during probationary periods and training needs for incoming staff. This will involve full implementation of currently existing UCD policies.	
3.17	Facilities – Instrumentation: The Review Group heard that a clear source of frustration is that some of the School's excellent equipment has been in a state of disrepair for extended periods which is hampering the progress of many research projects. It is not cost-effective to leave valuable instrumentation inoperable when so many people need it: instruments that are either broken or not currently supported include X-ray diffraction, SQUID magnetometry, EPR and Raman spectrometers. The budget appears to exist and so the Review Group recommends that these facilities should be fixed as a matter of urgency: it was commented many times that facilities for organic chemistry are first class but it is the rest that are suffering. Furthermore, the Review Group endorses the School's view, as stated in Chapter 7 of the SAR, that "Due to the increased complexity of laboratory repair/service, it is recommended that a building representative be assigned within the School of Chemistry to liaise/communicate and, importantly, track and ensure that repair cases are dealt with accordingly".	1	Action: A member of the RII committee, will oversee both space and equipment in the School. A list of equipment in need of repair is currently being compiled. Staff in the School will then meet to discuss what equipment should be retired and what should be brought back into service (April 23). The SQUID, is currently being repaired and should be back in use mid-2023, with a cost of ca. 15K. A new technical officer will be responsible for the X-ray and the SQUID service. Action: Assist the member of staff with compiling the list of broken equipment within the School and then meet with all academic and technical staff to decide what should be repaired and what should be decommissioned (April 23). Action: An internal infrastructure funding call to allow repair of smaller key equipment (April 23).	A/ B
3.18	Facilities – Lab Space: Whilst the infrastructure and facilities attracted praise there emerged a clear need for a transparent, fair and responsive process to allocate laboratory space which needs to be seen as not 'belonging' to a particular 'owner' but instead needs to be allocated dynamically in response to the changing needs of research groups. An early career researcher in the School pointed out a delay of two years in getting research lab space sorted out; another complained about the fact that their PhD students have no desk space when there is an empty office	1/2	Faculty members have been appointed to oversee laboratory space monitoring in the School. A Space Policy, which focuses on assignment of space based on numbers of researchers / volume of equipment, rather than historical occupancy, is being developed. The RII committee will review the draft shortly. We note space in the building is not solely for use of the School of Chemistry, and further note the effects of future renovation of Science West and North on these discussions. Action: Review and finalise a School Space Policy and assemble a team to (re)allocate laboratory and write up space. (June 23) Action: Discuss any inappropriate use of space by non-school members with the College of Science and the University. (Oct 22)	A/B

	nearby used by someone whose group has shrunk and thus the space is not efficiently used. An annual space audit / allocation process is required to ensure both equity and efficiency in the utilization of space.		Action: Select an annual date to carry out a space audit to ensure equity and efficiency in the utilisation of research space. (June 23)	
3.19	<u>Facilities – Other Schools and Colleges:</u> Access to workshops or instrumental facilities in other schools was reported as being slow, difficult, expensive and time-consuming. This is something for management to consider at (probably) college level: internal financial barriers need to be removed, so that someone from the School of Chemistry who needs access to, for example, facilities in another school can do so without undue problems. This would ensure best use of university resources. The SAR does suggest that a charging model is being developed which would help with this issue but it is clearly not yet fully functional.	1	The School acknowledges that access to equipment in other Schools and Colleges can be very challenging. An IT manager in UCD, has been working on a ‘core technology’ portal and booking system. This system aims to make core equipment more accessible to colleagues across the University. However, it’s likely that we can do more at the College of Science level to ensure that access to equipment is maximised and that we can reach out to other Colleges to discuss equipment that can be made available to other Colleges. Action: The issue of communally accessible equipment will be raised at both College (CRIIB) and University level (CVPRI meeting) and ask the VPRIs in each College to suggest an approach for compiling an equipment/technology list and communicating to colleagues (Jan 23).	A
3.20	<u>Cohesion / ‘Community Spirit’:</u> It came across to the panel very clearly that staff are concerned about a loss of social cohesion and a feeling of community in recent years. Of course much of this has come from the isolation of working from home during the pandemic. The lack of day-to-day interactions between colleagues – and in particular the loss of the staff common room which provided an obvious focus – is keenly felt and has consequences in tangible things such as fewer research collaborations and jointly-managed PhD students, and more intangible things such as loss of ‘community spirit’. Addressing this will require a concerted, proactive effort to fix in terms of community / team-building / social activities. Post-doctoral researchers who have come from outside the School have been particularly isolated and significant effort needs to be made to ensure that they are well integrated into the community.	1	A number of actions (see 2.10) are being taken to address the deterioration in ‘community spirit’, including (i) social gatherings have been resumed, e.g. with the reinstatement of the traditional end-of-year dinner for the academic staff with the external examiners, post-seminar coffee, welcome lectures, promotion celebration lectures (for all staff), Christmas events (for all staff) will recommence this year. Chem Soc will also continue with their annual events (for all staff and students). (ii) School Away Days (for academic staff) to look at specific topics will help here. (Sept 22 and bi-annually) (iii) Postgraduate & Postdoctoral ‘fora’ will be (or have been) instituted and there will be greater representation of PG and PDRA on School committees. (July ’22 and once per trimester). (iv) mechanisms to encourage research collaboration will be formulated, including new kinds of events (e.g. away days, with strong support from the HoS to promote attendance), support for collaborative projects in allocation of research fellowships etc. (see 3.20 (ii))	A
3.21	<u>School Staff Space:</u> The Review Group recommends that the School explores, with UCD College of Science and UCD Estates, the potential	1/2	Plans (and College support) for the restoration of a School ‘common room’ / seminar room are included in the proposals for refurbishment of the Science Centre (see 2.10).	A/B

	for a dedicated social space where school staff can congregate to enhance communication and collaboration.			
TEACHING, LEARNING AND ASSESSMENT				
4.13	<u>Resourcing of Teaching</u> : Given that undergraduate student numbers are expected to grow, increasing further the teaching and administration responsibilities of senior demonstrators is not a reasonable option. This kind of large-enrolment teaching environment requires specialized staff who are able to devote themselves full time to the development, assessment and organization of the modules. The Review Group therefore recommends that the School considers its approach to the use of teaching specialists (see also Recommendations 3.13 and 3.14).	1/3	See response to 3.13 and 3.14 above. The School agrees that the role of chief demonstrator is not sustainable and that administration of the laboratories requires additional input at staff level. Action: The School will move to cease the appointment of PhD students as chief demonstrators and will act to (1) revise/rationalise the procedures for administering all logistical aspects within the modules and (2) Identify appropriate staff to support these aspects (see 3.13 and 3.14). (Sept 22)	B/C
4.14	<u>Module Review</u> : The Review Group recommends that the School reviews the module content, lecture and laboratory schedules across the School, to ensure effectiveness, efficiency and consistency of module workload for students and staff.	1	The School recognises that the evolution of some module content and the development of new modules has resulted in (1) some overlap/duplication and (2) a disconnect between some content. Action: The School will commit to undertaking a curriculum review that will consider module content, lecture and laboratory schedules across the School, to ensure effectiveness, efficiency and consistency of module workload for students and staff. (June 23)	B/C
4.15	<u>Laboratory Teaching Review</u> : The Review Group recommends that the School reviews the evidence from the research literature about the most effective use of laboratory time (for example, see https://pubs.acs.org/doi/10.1021/acs.jchemed.8b00874). Currently, each module also contains a laboratory component, which may or may not be necessary. There is little evidence that traditional laboratories improve student learning of disciplinary content, yet there are a number of important skills and scientific practices that are difficult to teach any other way. The School will probably come under increased pressure to justify the use of laboratory time. Having evidence to support the productive ways that laboratory work helps students learn will be needed. As part of this	1	See response to 3.13 and 3.14 above. The School has discussed the nature of the lab provision. This could include changes to student's pre- and post- laboratory tasks to decrease actual in-lab time. Action: In response to potentially increased numbers, the School will undertake a review of actual in-lab time in line with the overall curriculum (and laboratory curriculum) review.	B/C

	review, the School should also consider whether the current three-hour lab model is optimal given the demands on lab space and difficulties arising from timetabling which are likely to increase as student numbers rise. This links to part of Recommendation 3.13 about having a laboratory teaching specialist to ensure integration of material and to make best use of lab experiments across a year group.			
4.16	<u>Assessment</u> : The Review Group recommends that the School maps assessment strategies across modules within stages and programmes to equitably spread, diversify and, where necessary, reduce the burden of assessment for students and staff.	1	Action: As part of the curriculum review the School will consider this and review the nature, frequency, and suitability of assessment methods mapped across the programme. This will also focus on ensuring that students receive sufficient training in the elements in which they are being assessed. (June 23)	B/C
4.17	<u>Staff Engagement in Teaching and Learning</u> : The School should develop mechanisms to support and encourage staff to engage in teaching and learning enrichment activities: for example, to promote staff to enrol in the UCD Teaching and Learning certificates and diplomas that will help energise Teaching and Learning pedagogy and embed universal design and innovation in module/programme delivery. The School should begin a programme of in-School discussions and collaborations on Teaching and Learning matters (brown-bag lunches, seminars on Teaching and Learning, scheduled meetings to discuss cross module alignment). The School should also develop and support a mentoring system for new faculty as they engage in Teaching and Learning.	1	Action. The school will encourage people to both apply for T&L awards where relevant and will require all incoming assistant and associate professors to complete the UCD T&L certificates (unless an equivalent has been completed before coming to UCD). We commit to hosting at least 1 educational seminar per year (this is written in the ToR of the seminar committee).	A
4.18	<u>Teaching Evaluation</u> : The School should develop an equitable approach to the evaluation of teaching that involves more than student feedback: possibly including peer review, peer discussions, and – perhaps most importantly – annual reflections on teaching. While evaluation of one's teaching by others can be helpful, improvements in teaching are more likely to come from a reflective process in which we consider what worked, and what changes could be made to improve outcomes.	1	The school currently undertakes a number of consultation and review processes to review its delivery of teaching. In 2021-22 this involved a meeting with Tutors, and with the Technical Officers from each floor, which provided important feedback related to delivery of labs and tutorials (two key teaching/assessment modes). Action: The School will hold an annual teaching reflection day (Away Day). This will also provide an excellent opportunity for new staff to contribute and to become more familiar with practices across the school.	B

4.19	<p><u>Teaching and Learning Innovation</u>: The Review Group believes that some of the innovations adopted during COVID have the potential to improve teaching and learning in the post-COVID years and recommends that now is the time for the School to explore use of e-learning and asynchronous learning, building on these innovations to more efficiently use available laboratory and classroom hours, and to improve student learning. It will be essential to identify and follow evidence-based practices as some in-person instruction is migrated to online (synchronous and asynchronous) teaching. The Review Group notes that there is only one Educational Technology support person for the College, but there are other resources available. The Review Group also notes that this process will be personnel- and time- intensive, which has implications for staff workload (i.e. moving instruction online should be adequately addressed in workload models).</p>	1	<p>Action. We will review and maintain these good practices</p>	A/B
4.20	<p><u>Education Research</u>: The School should consider how a core staff member who is engaged in discipline-based education research (DBER) might be integrated into the School. There were several discussions about the “traditional” approach to teaching in the School, and it may be time to consider how evidence-based pedagogies can be integrated across all aspects of instruction. For example, see the recommendations of the US National Academies report on DBER (see https://www.nap.edu/catalog/13362/discipline-based-education-research-understanding-and-improving-learning-in-undergraduate).</p>	1/3	<p>Action: Budget permitting, the School will explore the possibility of hiring a colleague whose research is in the area of chemistry education. This colleague would be able to collaborate on evidence-based initiatives across our degree programmes, and service teaching.</p>	B
<p>CURRICULUM DEVELOPMENT AND REVIEW</p>				
5.5	<p><u>Curriculum Review and Quality Assurance</u>: The Review Group recommends that the School undertakes a review of its curriculum. This could include standardising procedures for annual</p>	1	<p>Action: The School will undertake a curriculum review of undergraduate teaching in the next academic year. This will generate a comprehensive map of learning objectives across Stages with clear module alignment and integration. The review will take account of input from recent external examiner reports, undergraduate ‘forums’ and staff review days and</p>	A/B

	<p>programme quality review including integration of student feedback from module ratings, the annual student surveys for undergraduate, graduate taught and research students, external examiner reports and staff student Undergraduate / Postgraduate Fora into programme plans for forthcoming academic year. A from-first-principles look at both the curriculum content and its organisation and teaching delivery methods would be timely, especially coming out of the pandemic with fresh knowledge about how on-line methods can be judiciously used. The School should develop a mechanism to support in-school discussions and collaborations on Teaching and Learning (e.g. brown-bag lunches, seminars on Teaching and Learning, scheduled meetings to discuss cross module alignment).</p>		<p>“think” sessions. Aspects of assessment and online tools as well as lab development will be reviewed to ensure that module learning outcomes are achieved.</p> <p>Action: Education themed seminars will be included in the seminar programme (see 4.17) and avenues for teaching collaboration such as availing of funding to develop new teaching tools.</p>	
5.6	<p><u>Student Feedback:</u> The Review Group observed that the ‘Student voice’ opportunities and consultations have got lost during the pandemic and need active management to restart them. The Review Group recommends that the Undergraduate and Postgraduate Fora should be re-established as a priority and clear lines of communication between undergraduate or taught graduate students and their programme or stage directors set out. The results of the Student Survey should be considered in the periodic scheduled curriculum reviews of the programmes. Students highlighted the drop-in support (e.g. tutorials) from Y1/Y2 to Y3: they feel inhibited from ‘pestering’ staff too much. In contrast, examples of ‘active learning’ in the form of workshops/problem-solving integrated into thermodynamics lectures were praised.</p>	1	<p>Action: The UG staff student committee will be reinstated and a PG/ staff student committee instated (see 2.13).</p>	A
5.7	<p><u>Rationalisation of Modules and Small Programmes:</u> There are many (29/87) small modules with <10 people (ref School Profile Report March 2021). Running these may not be cost effective, especially given the obvious high workload concerns, and these need a critical re-evaluation / cost-benefit analysis. The same</p>	1	<p>Action: the school will review the sustainability of all modules with attendance of <10 students (see 3.12).</p> <p>The vast bulk of these modules are taught MSc & Dublin Chemistry modules. The former are co-located with stage 4 lectures and the latter also accommodate TCD students (numbers do not appear in the UCD system).</p> <p>Many of the others are core to smaller cohort degree offerings - whose sustainability we</p>	A/B

	applies to taught masters programmes with small enrolments and it is important that the planned review of the School's undergraduate offerings is progressed as a priority.		will analyse (see above). We will also look at newer modules delivered in other schools to see if redundancy can be eliminated.	
5.8	<u>Growth in the Medicinal Chemistry / Chemical Biology Major</u> : There was considerable concern about the increase in the numbers of students choosing the degree programme that includes medicinal and biological chemistry. If this growth continues the School will need to determine how students' capstone experience will be handled, since there will not be enough laboratory space for them all and it will place a large burden on academic staff working in those areas. Is there a possibility to substitute an internship experience? Or can students work in the research laboratories in another school? Is this an area where new academic appointments can be prioritised? The School should address these important questions.	1	The School is of the opinion that this is a temporary effect relating to interest in medicinal chemistry generated by the pandemic. Action: If the imbalance continues, we will consider the approaches suggested, although the potential of delivering projects through other schools is not expected to be feasible (as this issue is College-wide). We will also consider implementing 'dry' research projects for some students - an approach that is used in other schools.	B/C
5.9	<u>Loss of Identity for Medicinal Chemistry / Chemical Biology Students</u> : Several students mentioned that they take a significant number of their upper-level modules from other schools. This may lead to assumptions by staff that all students have taken a previous module (when they have not), and that all students in that module belong to that major. The Review Group recommends that the School reaches out to other schools to help them understand that there are a large number of Chemistry students on those modules who may have had different backgrounds from their own students.	1	Action: We will meet representatives from SBES / SBBS (the schools that provide these external modules) and raise this issue there.	A
RESEARCH ACTIVITY				
6.7	<u>Research Culture</u> : Whilst there are some well-established and successful groups, the landscape in the School is very asymmetric with some small / struggling groups and an increase in low impact publications (a sign of pressure to 'publish or perish'). This is partly a consequence of workloads and the staffing changes suggested elsewhere in	1	The School acknowledges the challenges facing some smaller research groups within the School and we also recognise the importance of supporting all staff to continue their research. Publication of high-impact, high-quality outputs should be prioritised over more routine outputs and such impactful publications typically involve internal, national and international collaborations. To help support small research groups with excellent research ideas and the potential to	B

	<p>this report should help here. However, the School does not have a clear research strategy with research groups generally operating in isolation, and the panel particularly noted a feeling that research efforts are isolated in individual groups with little culture of collaboration and very few jointly-supervised PhD students on genuinely collaborative projects compared to the disciplinary norm. The biggest grants these days go to large teams rather than individual researchers. The Review Group recommends that the School should do some active planning around identifying and promoting collaborative opportunities between academic staff. Regular conversations about how the School can support people in reaching their goals and objectives in relation to research output should also take place. Other possibilities include:</p> <p>21● Explicit efforts to establish more collaborations (research ‘away day’ / speed-dating sessions; support and advice from central research office about what possibilities are / horizon scanning; some PhD studentships reserved for collaborative two-supervisor projects; a recruitment strategy that brings in colleagues who are keen to collaborate with existing staff).</p> <ul style="list-style-type: none"> ● Re-balance workload allocations by mutual agreement to limit expectations for research outputs from those with high teaching / admin loads. ● Consider provision of sabbaticals, based on the standard UCD scheme which appears not to be in operation in the School. ● Reduce the reliance on PhD students for high-volume lab teaching; this is linked to the earlier recommendation regarding appointment of dedicated teaching staff (see Recommendation 3.13) and is also highlighted as a problem in the SAR. 		<p>compete for external funding, the School makes funding available (annually, where possible) for PhD studentships. In 2022, these studentships were renamed the Sir Walter Hartley Scholarships and four were allocated in 2022, after a competitive call. Applications where there was a clear focus on collaborative research and where there was a defined pathway to external funding were prioritised. It is expected that these scholarships/projects will lead to external funding (e.g. IRC, SFI, EU). However, the School also acknowledges that we could do significantly more to encourage collaborative research and support struggling groups.</p> <p>Action: A School Research Away Day will be organised for 2023, with support from the UCD Research Office. The day will focus on funding calls and discussing ways to collaborate within the School.</p> <p>Action: A STEM Research day is being planned for Spring 2023, which will bring together researchers from at least three Colleges. There will be funding associated with this research day and all Chemistry academic staff will be encouraged to participate and look for collaborators in various Schools.</p> <p>Action: HoS and Section Heads to arrange to review the teaching allocation for all staff to ensure that there is an even spread of teaching; taking into account the research and administration responsibilities of staff, as well as their career stage.</p> <p>Action: HoS to arrange annual email reminding staff of the option to apply for sabbatical.</p> <p>Action: The issue of high laboratory teaching loads for PhD students to be added as an item for discussion at an upcoming all staff meeting. The load for the Sir Walter Hartley Scholars will be a key topic for discussion, as will uneven distribution of hours among postgraduate students.</p>	
6.8	<p>Research Students: The School should review implementation of the University Graduate School</p>	1	<p>Research/Doctoral Studies Panels (RSP/DPS) are an extremely effective way of ensuring that postgraduate students are progressing satisfactorily and ensuring that they are getting</p>	B

	<p>requirements, with standardisation of Research Studies Panel procedures and meetings. Students seem to have limited interaction with their panel members, relying on their principal supervisor for oversight of their progress. The ratings on the Graduate Research Survey also suggest a gap in career development opportunities for PhD students. Suggestions for enhancement include: allocation of specific roles for panel members to support the holistic development of the student, more explicit consideration of student career development in the Research Studies Panel, more diverse Research Studies Panel membership to support students, perhaps consider external collaborators on Research Studies Panels and industry placements to increase student exposure to external networks. The Review Group also recommends a review and consultation with research students on their needs in respect of orientation, information and communication with their peers and the staff.</p>		<p>the right support with any challenges. However, the School acknowledges that not all students are benefiting equally from these panels. There have been some discussions in the School recently around how to better support the research, career development and networking opportunities for our research students. The School accepts that more consultation with the postgraduate students is necessary to gauge their needs and get a clearer picture of which students are not receiving appropriate mentorship and support for the RSP/DPSs.</p> <p>Action: The Chair of Postgraduate Studies to arrange a meeting with all postgraduates to discuss concerns with the RSP/DSP panels.</p> <p>Action: The Chair of Postgraduate Studies to compile a list of postgraduate students who have not had a year 1, 2 or 3 panel meeting and establish the reasons for this lack of engagement.</p> <p>Action: The Chair of Postgraduate Studies to consider how best to monitor RSP/DSP uptake going forward and engage with students and panels where the meetings are not taking place.</p>	
<p>MANAGEMENT OF QUALITY AND ENHANCEMENT</p>				
7.7	<p>Safety: The School should ensure that there is a more consistent approach to safety between research groups, with the School Safety Committee empowered to enforce University safety rules and procedures.</p>	1	<p>Action: The Safety committee already oversees training of UG and PG students and PDRA researchers on safety aspects of the teaching and research laboratories. New documents from SIRC will be disseminated through the safety committee and clearly communicate the role of SIRC, the safety committee and the PI in regards to laboratory safety. The safety committee will outline and document a greater range of procedures and requirements including biologically related safety materials (handling of genetically modified organisms). The Safety Committee will add a member with such experience.</p> <p>Action: A mechanism by which non-compliance with aspects raised during safety audits will be developed.</p>	A
<p>SUPPORT SERVICES</p>				
8.7	<p><u>Share Internal Knowledge of Standard Procedures:</u> The School should identify where there are communication difficulties in relation to research</p>	1	<p>Action: The School will compile 'Guides' containing overviews of common interactions with central admin, with links to online resources & to contacts (not detailed guides to procedures - these are responsibility of central admin units); these will be posted to the</p>	B

	and HR support units, particularly in relation to the recruitment of postdoctoral research staff. The Review Group recommends that the School develops a central repository of common administrative information about administrative procedures to enable staff members to work through the various processes more effectively. This could be compiled into a number of handbooks which would be made available to everyone in the School.		shared drive. Action: Regularly remind staff about this repository of guides Action: Where issues are commonly encountered, the School Manager, and HoS where appropriate, will consult with relevant units to discuss how they can be addressed, e.g. by inviting reps from units to make presentations to staff and the identification of specific contacts to deal with issues Action: We will develop a protocol repository for keeping instructions on how to perform important and common recruitment actions.	
8.8	<u>Enhance Liaison with HR:</u> The Review Group recommends that there is enhanced liaison with the College of Science's HR Partner. This should assist the School in planning its recruitment strategy.	1	The School's liaison and relationship with the College HR partner is excellent. Many issues are with 'HR resourcing' and most of these arise because staff are unfamiliar with processes. The guides , and visit by a HR resourcing staff member discussed above will help here(see 8.7) Action: Work with HR resourcing to develop improved links with central HR and resolve issues	A
8.9	<u>Administration:</u> The Review Group recommends that the School ensures it has sufficient administrative capacity to ensure that routine administrative interactions with support units are efficiently processed.	1	Action: The HoS and School Manager will engage with support units to determine what the issues are and explore options for improved efficiency, e.g. by delegating responsibility for some routine admin functions.	B
8.10	<u>Enhance Liaison with UCD Services:</u> The Review Group recommends that the School should consider the appointment of a member of staff to liaise with external University services in relation to equipment replacement and repairs (see Recommendation 3.17) to ensure that there are minimal delays (see also Recommendations 3.18 and 3.19 with respect to instrumentation, workshops and laboratories).	1	We understand this comment related to general lab support services rather than to specific pieces of equipment (which are covered in 3.17-3.19). Action: Clear communication guidelines to report infrastructural problems are to be put in place.	A
COLLABORATIVE EDUCATIONAL PROVISION				
9.7	The Review Group recommends that the School ensures that the workload associated with these collaborative educational initiatives is considered in the workload allocation model to support the activities with appropriate staffing.	1	We take this point to refer to the summer schools rather than to traditional autumn / spring trimester teaching. Action: Workload associated with Summer schools and other collaborative educational initiatives will be incorporated into WAM. However, these contributions are voluntary, not assigned, and are rewarded by additional funding of research activities, which is not the case for allocated teaching duties.	A

9.8	The School should ensure that resources are adequately deployed to be able to meet the curricular needs of the other undergraduate majors, as well as the Chemistry majors.	1	We do not believe that any of our UG majors or our service delivery are under-resourced. Action: The school will review the specific resources needed to meet the curriculum needs of the 'Chemistry with' and MCCB programmes to determine if such under-resourcing exists.	B
9.9	The School should develop the identity of students on the School's Medicinal Chemistry and Chemical Biology major, in collaboration with the other schools from which their core modules are delivered.	1	We understand there are different cohorts in stages 3 and 4 (with MCCB currently being the largest). We take this point to mean the cohorts do not feel parts of their "major" communities. See 5.9 for dealing with other schools Action: Programme directors will host specific welcome meeting sessions at stages 3 and 4 for each major to act as community building events.	B
9.10	The School should review the range of modules at postgraduate level provided by the School within the context of the collaborative programmes. The offerings are clearly broad, but the enrolment numbers to individual modules are small. While the choice provided to students is commendable, this must be balanced with efficient deployment of staff resources (see Recommendation 5.7).	1	The School regularly reviews the list of postgraduate modules. The attendance of modules of a collaborative program with TCD was affected recently by the COVID restrictions and may not be representative. Action: The School Postgraduate Committee will undergo a review of existing postgraduate modules, including the enrolment numbers, and provide recommendations on the efficient deployment of staff resources.	B
9.11	The School should progress plans to actively engage with UCD Global in relation to international student recruitment.	1	A new Global Engagement committee will be created before September 1st to develop plans towards intensifying our efforts to facilitate exchange at UG and PG level for outgoing and incoming students. Two undergraduate summer schools are currently run with universities in China (ZJNU, remote) and the US (in person, Hawaii, California and PennState). At postgraduate level, the taught MSc programme attracts many students from outside Ireland and PhD level students with funding from CSC, IRC, SFI, industry etc. contribute to our international student recruitment activities. Action: The chair will continue to liaise at College level to feedback information to the School on new opportunities within Europe and globally.	A
EXTERNAL RELATIONS				
10.8	<u>External Engagement:</u> The Review Group heard that communication with outside units (e.g. industry, potential employers) is not as strong as it could be. The School should therefore explore possible engagement with industry, including in relation to co-supervision of research students, and the imminent curriculum review: an external	1	Action The School Postgraduate Committee will undergo a review of the School policies in relation to co-supervision, and participation in Transfer Assessment and Research Studies panels, with the view to involving industry representatives. Action: The School will set up an external advisory board and discuss potential members at	B

	advisory board might be productive.		a School meeting.	
10.9	<u>Recognition of External Contributions</u> : The School should take account of external commitments in the workload allocation model.	1	Action : The school will continue to collect this information in the WAM spreadsheet. We encourage faculty to engage in bodies related to the discipline, external examining etc. as it both raises the profile of the school and ensures we are being exposed to practices elsewhere. These will form a minor part of the School's WAM.	A
10.10	<u>Website</u> : The School's website needs to be updated as a priority. Currently, news headline items date from 2019. The research day information is from 2018. Information to attract applicants on to undergraduate / postgraduate courses is basically a wall of text. The Review Group recommends that a makeover from a digital marketing expert, and some fresh content (particularly graphics, videos) are needed.	1	Action . We will clarify goals and strategy for the website (which will vary by section) and will nominate faculty to take responsibility for particular sections and an administrator to carry out updates. Action . Safety to add more sections including SOP and create a better layout where emergency documentation can be accessed. SiRC requested that documents be protected and available to UCD staff/students only. Action . The RII committee will look at the Research section of the website, and will consult with all staff in the coming weeks to improve and update the content.	A

3. Prioritised Resource Requirements

This section should only contain a list, prioritised by the Quality Improvement Committee, of recommendations outlined in the Review Group Report, which require additional resources. The planned action to address each recommendation with an estimate of the cost involved should also be included:

1. Following recommendation 2.10 - Funding to renovate and prepare the proposed common room and office suite which are to be transferred to the school. We have no feel for what this will cost, and whether it should come from the Science renovation budget?

Action – The School will liaise with the Science Centre renovations leadership to ensure that appropriate space becomes available.

2. Following several recommendations including 3.12-3.14 - The recruitment of a Teacher Fellow position to develop approaches for coordinating, streamlining and aligning the delivery and assessment of the laboratory components of large modules. An equivalent position in SBES is set at €37,000-€41,000)

Action – The School will liaise with College leadership and HR partner to recruit a TF (after generation of a Job Description).

3. Following recommendation 6.7 Extra PhD studentships to allow the same level of demonstrating to increasing levels of UG numbers (which are rising, and projected to rise further, while PhD numbers are static). Individual PhD stipends are currently €17,000 p.a. and fees are currently set by UCD.

Action – The School will initially fund 3 extra RD positions from Sept '23.

Note: The Quality Improvement Plan should be used to inform Unit and College level academic, support service and resource planning activities.