Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Quality Review of the School of Genetics and Microbiology

21-25 March 2022

Review Team:

1. Professor Margaret Harnett, University of Glasgow, UK
2. Professor Elizabeth Smythe, University of Sheffield, UK
3. Professor Simon Sprecher, University of Fribourg, Switzerland
4. Professor Stefan Niemann, Research Center Borstel (FZB), Germany.

Internal Facilitator:

Professor John Parnell, Fellow Emeritus, TCD

Table of Contents

School of Genetics and Microbiology

Introduction: The panel wish to extend their thanks to all those who participated in the review of the School which took place between March 21-25, 2022. Meetings with Officers of the College, academic staff, postdoctoral researchers, postgraduate and undergraduate students, and professional staff were very productive, with all groups displaying high levels of engagement with the review process. We appreciated the extensive information that was provided to us and the open conversations with those we met, which allowed us to gain a good understanding of the work of the School. During the meetings, it was also possible to gain insights into the performance and problems in different areas of activity. The panel appreciated the excellent organisation of the review process by the Quality Office and the assistance of the internal Facilitator.

The panel addressed the following Terms of reference for the School:

(i) The effectiveness of the School's governance, management and administration structures, and resources in delivering and supporting the achievement of its strategy and mission.

(ii) The Strategy of the School in terms of its fitness-for-purpose to respond to the College strategies, with specific reference to:

- **a. the postgraduate taught and research programmes;**
- **b. postdoctoral development;**
- **c. the School's research strategy, participation in College Research Themes, and engagement with Trinity Research Institutes;**
- **d. emergent risks and opportunities in the relevant discipline, nationally and internationally.**

(iii) Opportunities for increased synergy and collaboration within the School of Genetics and Microbiology and between it and the School of Biochemistry and Immunology and with cognate units within the University, in education, research and the provision of infrastructure.

Preamble

The School has an impressive record in research and teaching, as evidenced by high quality publications, substantial research income, as exemplified by high levels of ERC funding, and the quality of the undergraduate teaching and postgraduate training. Clear leadership is provided by the new Head of School, Professor Jane Farrar, who with her Executive is aiming to optimize integration between the disciplines of Genetics and Microbiology. Interactions with the Trinity Research Institutes has also had a beneficial effect in exploiting synergies, as will new plans to foster interactions with other Schools, particularly Biochemistry and Immunology, across College. Of note the School instituted a new PGT course in Genomic Medicine which was one of the recommendations of the previous review. In addition, the recent appointments of School Manager, Executive Officer and Chief Technical officer will alleviate some of the administrative burdens which have had significant impacts on staff workload and thus research and teaching activities.

In addressing the Terms of Reference, the panel recognised there are some major problems inherent to the relationship between the School and College that are impacting seriously on the School which need to be addressed:

- Although Schools are the main driver of activity in the College, the Heads of School have limited direct influence on decision-making at College level. We feel this undermines the leadership role and reduces the incentive of Schools to innovate.
- Reform of the Baseline Budgeting Model (BBM) is essential. Schools have very little flexibility in terms of non-pay monies: ~90% of the budget is committed to salary costs, and these rise each year with normal incremental salary increases and promotions. Any flexibility is being further eroded as the cuts made to public sector salaries arising from the 2008-10 financial crash are being reversed, resulting in further increases to these costs, as does the accrual of

1

Contracts of Indefinite Duration. Moreover, technical support provided for teaching practical courses outside the School is not adequately funded through the BBM. Currently, therefore, the BBM does not provide meaningful reward for additional activity. Successful Schools such as Genetics & Microbiology are being asked to do more and more with no additional funds for future development, investment in basic equipment, support for junior staff setting up their labs or indeed contingency planning. Thus, it is difficult for the School to react quickly or change course simply because most funding is dedicated to salary commitments. A related issue is the lack of College funding for competitive start-up packages which interferes with the quality of recruitment of more senior Principal Investigators.

- We are concerned that there is a lack of transparency in the College in several key areas:
  -*College income and budget distribution*: Schools receive 42.5% of additional income generated but it is unclear how the remainder is spent by the College and how that supports the School.
  -*Staff appointments*: The strategy underpinning release of posts is opaque and the final decisions on staff appointments during the pandemic were taken by committees that were quite removed from the School. We welcome the future plan to release posts in direct consultation with the HoS.
  - *Promotion*: Staff feel that promotion occurs very slowly. While the numbers of staff who can be promoted are inevitably constrained by the financial position of the College, staff felt that feedback received did not reflect this and in some instances was not especially helpful or actionable.
  - *Undergraduate student numbers* across the College increase by a relatively small number but it is unclear how equitably these additional students are distributed to Schools, with concerns regarding disproportionate increases in workload and lowering of academic standards. Of particular concern is that currently students have the option to retake courses multiple times. Apart from academic concerns, this additionally significantly adds to academic workload.
- The panel were surprised at the apparent absence of College-wide Governance with respect to:
  -formalised/centralised personal development plans for staff. HR informed us of planned courses for postdoc development. These would reduce workload burden on staff within the School who would otherwise need to provide this support. These courses should not however incur a cost for the School. Importantly, their roll-out would contribute to greater transparency with respect to College funding streams.
  -lack of centralised online portals for assessment /feedback of UG/PG training, which again would substantially reduce the administrative burden on academic staff, optimising their focus on teaching and research.
- The lack of consistency in waiving the fee difference for non-EU students applying through international programmes will inevitably impact on drives for greater internationalisation, inclusion and diversity. Furthermore, the need to "top-up" the (differential) PhD fees provided by various funding bodies to meet the high Trinity fees, is causing stress and hardship for students and staff.

Referring to the specific Terms of Reference:

The effectiveness of the School's governance, management and administration structures, and resources in delivering and supporting the achievement of its strategy and mission.

The previous review of the School identified a significant imbalance between the two disciplines of Microbiology and Genetics in terms of academic staff representation and lack of interaction, which was still evident at this review. There has been recent good progress however towards closer integration within the School. The recently appointed Head of School and Executive/School structure which is prescribed by College, showed a strong commitment to integration of the two disciplines. However, we were concerned that there was quite a disconnect between the integration of the two disciplines perceived by the Executive, as compared with all other groups we spoke to. Reflecting this, we were surprised to find that PhD training, teaching and technical support were managed separately between the two disciplines. Additionally, we noted that two seminar series appeared to run in parallel and even with clashing timetables.

The School has suffered from the absence of a School manager for the past 2 years and previously shared one with the School of Biochemistry and Immunology. This post has now been filled and should facilitate streamlining of processes and help alleviate the considerable administrative burdens on academic staff. The School has 2.5 Executive Officers who are fully committed to running UG courses, particularly since the introduction of the Trinity Education Project which has increased load and complexity of administrative work, especially the Trinity elective module for non-science students. While elective modules are timetabled centrally, the timetabling of 'open' modules can cause problems for the School EO staff in terms of clashes of staff and/or space.

The School research strategy, participation in College Research Themes, and engagement with Trinity Research Institutes;

The reviewers feel that the combination of the two disciplines within the School is a research strength rather than a weakness. Chronic illness of senior staff has led to a strong imbalance between research activity and income in the two disciplines. However, the reviewers noted great potential to combine complementary expertise across the two disciplines to address highly relevant and fundable research topics. These cross-cutting topics (microbiome, bacterial genomics, host genetics) should be defined by the School to develop a synergistic research agenda. In this context strong leadership in Microbiology will be important for the future exploitation of the cumulative expertise and synergies between the disciplines. Recruitment of a new Chair provides an opportunity to embark on such future strategic planning in the recruitment of excellent, but more junior researchers, with expertise in such cross-cutting topics. Additionally the panel was pleased to note that the School was actively applying for a SALI senior female position which would provide additional research capacity for Microbiology. There have been some new junior appointments in Microbiology and it will be important that these new PIs are fully supported to ensure they achieve their full potential.

Underpinning infrastructure was generally appropriate, and we noted that Bioinformatics provision worked very effectively to support research within the School and beyond. This probably needs an increase in capacity, perhaps partially funded by recoup of moderately costed training courses for wet-lab researchers, both within the School and across College. There is a fundamental problem across the College of equipment replacement, especially of workhorse instruments. We recommend that this should be considered in the context of a revised BBM discussed above. The use of pooled communal equipment is also to be encouraged.

Technical support: We were surprised that the management and support of technical support is entirely separate between the Moyne and the Genetics Building. It appears that time and workload are obstacles to establishing structured opportunities to get to know each other or collaborate. We recommend that technical support be integrated across the School allowing for better cover for holidays and sickness.

Undergraduate, postgraduate taught and research programmes:

We were encouraged that integration in teaching did not appear to be an issue for staff and had previously been in place at UG level and is now working in PGT taught courses. Of note, before the reviewers had completed their visit, discussions of a new joint UG course had already begun. This bodes well for future integration of teaching.

Likewise the School has a clear and strong focus on internationalisation at undergraduate and postgraduate teaching levels with a well-established record in recruiting international students. This is not reflected in academic staff mobility due to pressure of workloads.

Undergraduate education: The School runs three successful undergraduate degree programmes in Microbiology, Genetics and Human Genetics with a Student: Staff ratio of 18:1. However, the following concerns represent threats to the continuing success of these courses:

- The School is rightly proud of the calibre of its Capstone projects. At present, funding of the Capstone projects is not supported by within the College funding model, requiring their subsidy by Principal Investigators. This is a huge burden for PIs as well as their postdocs and PhD students and directly impacts on research activity. Having to take more SS students for

Capstone projects, as well as M.Sc. students is thus a threat to research excellence and needs to be considered in the context of discussions around the BBM described above. In other words, more resource or a different model (lower credit rating, different 'flavours' of projects) is required as the impact of increased numbers of Capstone projects is likely to be significant.

- Mechanisms for student feedback on modules appeared patchy and this could be alleviated by centralisation of processes throughout the College.
- A major concern is that the COVID-introduced option to retake courses/exams multiple times may be retained. Apart from concerns about academic standards, this significantly adds to staff workload through setting additional course work and exams etc.

PG education has been an important focus within the School and this success is reflected by the ability to attract high quality students. Notably the discipline of Microbiology has more than doubled its PhD numbers in recent years. Following the previous review, the School also instituted a new PGT course in Genome Medicine.

- We identified considerable variations in PhD training in relation to transferable skills and organisation of thesis committee meetings across the School. We recommend more frequent thesis committee meetings (ideally every 6 months) with tasks related to the stage of PhD studies to aid the development of the students and their acquisition of both transferable and professional skills. This would benefit from centralisation of postgraduate training and UG and postgraduate evaluation at Faculty or College level, which should relieve some of the administrative burden on the academic staff while ensuring excellence in training.
- There was considerable concern about the working conditions for PhD students. A College wide issue is shortfall in PG student fees, which are higher in Trinity than in other Irish universities. The ability to support students in this is very dependent on the finances of individual PIs and is likely to be a source of considerable stress and potential discord in this cohort within the School. Other issues raised included long working hours, no paid maternity leave and discrepancies in stipends which generally provide insufficient funding in Dublin, where accommodation is very expensive and the resulting financial stress is exacerbated by lack of state support for medication and dental work.
- We identified that communication amongst labs, particularly between those of Genetics and Microbiology, could be improved and also recommend that all students have the opportunities to attend regular lab meetings, with combined lab meetings for smaller groups, to promote their development and foster cross-disciplinary collaborations that would promote integration of novel technologies/approaches into research projects. Students in Genetics organise their own seminar programme and we recommend that this is extended to include all students within the School.
- Students need better communication about the procedures around supervision and having more regular contact with supervisors. Most were not aware of the School PG Handbook, requirements, key dates, or modules available. We recommend a more complete induction for research students which will also help identify any potential issues at an early stage, because students can feel 'at sea' in the beginning and often it can be some time before problems become evident.
- The College has an established system for ethics training for PhD students but there seemed to be little awareness of the issue of dual use, routes to commercialisation or intellectual property issues from the students' perspective. Additionally because students are paid by stipend rather than being salaried staff members, this could mean that ownership of work may not be well-defined.
- Another potential problem is the non-existence of a regular framework to get information from PIs if projects have a risk of Dual Use Research of Concern (DURC). As regular documentation by either by the School or the College has become mandatory e.g., for application for EU funding, the College should establish procedures for DURC screening and a committee dealing with DURC requests.

Postdoctoral development

The School has 43 postdocs in total, although there is a pronounced skewed distribution between Genetics (39) and Microbiology (4). We were surprised by the absence of any formal staff

development reviews for staff but understand that Human Resources is currently rolling out a University wide programme. We recommend that this process is distinct from promotion and performance and is based on self-reflection of what has been successful, as well as what has not gone so well over the preceding year, to allow postdocs to set achievable and meaningful goals for their development and progress of high quality research. Appropriate training for reviewers and reviewees may be required to ensure the success of the scheme and we encourage staff to actively engage in this not only for the benefit of individuals and but also because there is a requirement for such procedures for EU funding and Athena Swan awards. To reduce workload burden on academic staff and ensure equitable compliance, this process should be administered centrally on a College-wide basis, at no cost to the School.

Emergent risks and opportunities in the relevant discipline, nationally and internationally

The panel considered that the lack of integration of the two disciplines poses a significant risk to the School in the perception of research excellence in the College, especially in the context of the difficult funding landscape. Failure to exploit research synergies potentially undermines fruitful collaborations and funding success.

There is a general issue with science research funding in Ireland for individual labs as well as for essential infrastructure. Moreover, there is decreasing government funding across the University sector. For example, during the Covid pandemic new examination arrangements for secondary schools led to higher numbers of students being admitted to universities. Although additional funding was provided by the HEA, this is likely to be withdrawn whilst the government will probably seek to retain flexibility over increasing student intake without again providing additional funding. This coupled with other effects of the pandemic and very high living costs in Dublin present considerable challenges for the School.

Opportunities for increased synergy and collaboration between the School of Genetics and Microbiology and the School of Biochemistry and Immunology and with cognate units within the University, in education, research and the provision of infrastructure.

The panel considered that both Schools were ideal as stand-alone entities with international reputations for excellence in their distinct disciplines. They are both of a size that is appropriate to allow staff and students to feel part of a shared endeavour. Nevertheless, there was clear potential and commitment from staff and students to identify further interdisciplinary synergies to produce excellent teaching and research across the four disciplines. The panel was particularly pleased to note that the Heads of both Schools were very open to increased synergies between the Schools and indeed presented clear ideas for how these synergies could be realised.

Specific suggestions included:

- Joint appointments: Appointment of a virologist would fill an existing gap between the Schools. The panel noted that there are already several joint appointments between the School of Biochemistry and Immunology and the School of Medicine so there is an effective working precedent for this.

- Joint awayday for PIs, in the first instance, to explore areas of novel cross-disciplinary collaboration.

- The possibility of joint PhD studentships would further facilitate cross-School research.

- Substantial underpinning research facilities exist which are of benefit to both Schools. For example Bioinformatics capability is providing excellent support and we recommend that further investment be considered to extend that capability. In that context establishing courses for training at all levels in Bioinformatics, as well as in other approaches such as imaging and flow cytometry, would be of enormous benefit to staff and students alike.

- A webpage providing a list of relevant facilities available to be assembled. This would not only benefit staff but increase visibility for recruitment by highlighting excellent underpinning infrastructure.

-Both Schools have a Postdoc Society which could be combined to increase critical mass and cross-fertilisation of ideas.

Recommendations

- We recommend that the Head of School has more direct input into decision-making processes beyond the current Heads of School forum. This could be through, for example, formalised meetings of the Heads of School with the Dean and the College Officers to discuss, approve and ratify School budgets, strategy and recruitment.
- We recommend that the School continues to focus on integration between the two disciplines. We recommend some relatively straightforward measures that could foster School spirit and drive interdisciplinary collaborations. These include:
  -An annual research retreat so that all PIs, postdocs and students are fully aware of research within the School and can exploit and benefit from synergies. This should also be coupled with a social event which should be as inclusive as possible.
  -A common seminar series, the location of which could alternate between the Moyne and the Genetics Building.
  -Streamlining processes within the School including, for example PhD training and advisory committees, that are common across the School. In that context we would recommend instituting thesis committees with staff from each of the two disciplines within the School. Supporting this, we recommend centralisation of student/postdoc training, assessment and personal development via a College online portal system to alleviate administrative burden on School. More use should be made of the transferable skills development courses currently being rolled out by HR for PhD students (some minimal specific course credits requirements over tenure of study)/postdocs but none of these College services should incur charges on the School's budget but rather be funded centrally.
  -Internal master classes/courses operated within the School in technologies, e.g. Bioinformatics to promote knowledge transfer and synergy – these could also be offered at a recoupable cost to other Schools across College.
  -Technical support to be integrated across the School allowing for better cover for holidays and sickness.
  -Improved informal mentoring of junior staff, in particular exploiting the outstanding success in winning ERC grants to support PIs at an earlier career stage.
  - Approaches to use of overheads to be agreed at School level following consultations with staff by the School executive.
- We recommend reform of the BBM to allow strategic planning for replacement posts and synergies that are essential to maintain the international profile of the School. Reform of the BMM would also allow the School to maintain and develop its infrastructure which underpins research across the Faculty.
- Increasing the cohort of JS and SS students and Masters students is a threat to academic standards and research excellence and needs to be considered in the context of discussions around the BBM described above. We suggest either a reconsideration of the credit weight of the capstone projects or the provision of alternative 'dry' projects.
- We were surprised by the absence of any formal staff development reviews for staff and understand that Human Resources is currently rolling out a University-wide programme. We would encourage staff to actively engage in this not only for the benefit of individual staff but also because there is a requirement for such procedures for EU funding.
- We identified variations in PhD training and thus the panel recommends centralisation of postgraduate training and UG and postgrad evaluation, which should relieve some of the burden on the academic staff while ensuring excellence in training.
- Overall workloads appeared to be very high and continually increasing and we are concerned about staff burnout. We strongly support staff having more freedom to focus on their excellent research outputs to exploit synergies. Greater transparency within the School through some form of workload model would be desirable.

School of Genetics and Microbiology, TCD - Response to School Review Report

Firstly, we would like to thank the four External Reviewers (Panel: Professor Margaret Harnett, Professor Stefan Niemann, Professor Liz Smythe and Professor Simon Sprecher) for their time and commitment in reviewing the School of Genetics and Microbiology and for considering the future optimisation of the School's activities, ambitions and outputs. We do very much appreciate the enormous level of work that is invested in any such School Review and are most thankful for the generosity that the Reviewers have shown us in terms of their time and the excellent strategic advice they have provided us with.

Overview from Reviewers

Overall, the School Report was extremely positive and acknowledges the large body of work undertaken in the School with respect to both teaching and research and the level of excellence achieved in both areas. Indeed, it was very reassuring to hear that the Reviewers were impressed by the research and teaching in the School.

As noted by the Reviewers, a keen focus of the current School Executive team is optimal integration of the two disciplines. We are delighted to have recently recruited a new School Manager, Executive Officer (Genetics) and Chief Technical Officer (Microbiology) to support all of the activities of the School, and agree with the Reviewers that these recent appointments will enable smooth running of the School and will facilitate optimal integration, evolution and growth of the School in the future.

We would like to thank the Reviewers for their validation of what we have been doing as a School, while at the same time acknowledging that as per the Report there are areas that require further development and optimisation. In this response to the External Reviewers School Report, we have considered the issues raised carefully and provide brief comments and actions (which will expanded further in our implementation plan).

Integration of the Disciplines in the School

We agree with the valuable comments from the Panel in relation to integration of the two disciplines in the School and would like to highlight that there has been a renewed focus on integration of Genetics and Microbiology. This integration process was initiated a few months prior to the School Review, and has continued with additional vigour subsequent to the School Review.

Briefly, aspects in relation to this integration strategy are provided herein. We are focused on generating UG modules jointly taught by staff from both disciplines and taken by students in the two disciplines. There is active engagement from the lecturing staff in Genetics and Microbiology to optimise the pedagogical outcomes from such modules for both Genetics and Microbiology students. Additionally, we are promoting interactions and cross-training of PhD students between the two disciplines in the School. Furthermore, another integration activity, spearheaded by our post-doctoral representative, Dr Natalie Hudson and the Director of EDI, Prof Sinéad Corr, is establishment of a joint seminar series for all PhD students and post-doctoral scientists.

The School acknowledges and agrees with the Reviewers that there is potential for complementary research programmes / outputs between the two disciplines. The increased integration of the disciplines in the School as per above, in principle should facilitate cross-talk between Genetics and Microbiology, and should expedite combining synergistic complimentary skills in grant applications and associated research programmes.

We agree with the Panel regarding the importance and value of core facilities for the two disciplines in the School and indeed other Schools. For example, the Reviewers highlighted the value of the Bioinformatics core and the need to expand this core. Obtaining funding to underpin this expansion will be the challenge.

Finance

We agree with the Panel regarding the need to reform of the financial model in TCD. The budget provided to the School underpins many of its key activities, and the associated budgetary constraints impact on the ability of the School to operate optimally and to plan for evolution and growth. School budgets are driven by College-wide policy issues, and the financial model (BBM) determining the allocation to the School has recently been reformed. There is considerable concern as to whether the proposed new Budget Planning and Allocation (BPA) model, which will be implemented for the academic year 2022/2023, will be beneficial or indeed may impact negatively on some Schools and associated budgets – the baseline budget for each School will now be the 2021-2022 academic year and the extra earnings provided to the School for extra students (over the student number in 2021-2022) will be 60% of the fee income. The Dean of STEM has highlighted various concerns relating to the BPA at Faculty level and to relevant TCD Finance and Management teams.

Critically, it would seem very uncertain that the new BPA finance model will in any way enable Schools to maintain and develop infrastructure which typically takes significant financial investment. There are no or minimal contingency funds to maintain and replace vital laboratory space and equipment. Where we can, we will make the School voice heard with respect to the significant risks of the TCD finance model for the School's core budget and its ability to maintain excellence in teaching and research. The inadequacy of the current financial system (including the new BPA model) to sustain the School infrastructure will be highlighted as a key risk for the School and more widely for the College.

Undergraduate, postgraduate taught and research programmes

The Panel was impressed with the excellence in teaching and research achieved in the School despite enormous time pressures and budgetary constraints.

Some issues were identified by the Reviewers in relation to increasing student numbers. To ensure we can still provide Capstone projects to final year students, which we believe represents an important aspect of UG education for our Genetics, Human Genetics and Microbiology degree course students, where possible, we will try to limit further increases in UG student numbers. However, there is significant pressure from the HEA, and therefore TCD, to increase UG student numbers. If UG numbers increase despite push back, we will have to review the nature of the Capstone projects and consider if alternative formats, e.g., online / virtual components may be possible as suggested by the Panel, while retaining key learning objectives.

The Panel highlighted the issue of reassessments / retaking examinations multiple times – this is being reviewed at a College level by DUTLs. We, via Pablo Labrador, will feed into this process and indeed will bring the External Reviewers' commentary to the Undergraduate Studies Committee for consideration.

The Panel highlighted aspects of PG training that should be considered. Implementation of greater consistency in PhD training in relation to transferable skills and organisation of Thesis Committee meetings across the School was suggested. More active involvement of both disciplines in Thesis Committees should help somewhat regarding consistency across the School. A greater central administrative support for PG processes to ease time pressures was also suggested in the Report. We agree with all of the key findings of the Reviewers.

Postdoctoral development

We agree with the Panel's viewpoint that a greater focus on postdoctoral career development at School level and College-wide level is extremely important, and currently is significantly under supported. Frequently the post-doctoral scientists are the engine of the research output in science but are often under-represented on College committees and forums. Indeed, we have 43 post-doctoral scientists in the School, a significant staff cohort. The recent grant funding initiatives directed towards early career researchers are very welcome, but however only start to address what has been a significant deficit in supports for some time.

As suggested by the Reviewers, the School will explore how far TCD Human Resources (HR) has progressed in terms of the rollout of the University wide programme for staff development. We will explore if HR has focused on postdoctoral scientists within this staff development process, and how specifically the needs of this important staff cohort will be addressed as part of this initiative. We will encourage all staff including postdoctoral scientists to engage with the process, as per the advice of the Panel. Furthermore, the School Executive team we will review the career advice offerings and staff training opportunities provided by TCD and consider whether additional staff development programmes geared towards postdoctoral scientists are required and should be provided by HR.

Risks for the School

We agree with the that there are many risks for the School as highlighted by the Reviewers. The Panel found evidence of high and potentially increasing teaching and associated administrative workloads for School staff, that ultimately will cause a reduction in the quality of teaching and research in the School. The School clearly has to try to mitigate such risks where possible, pushing back against intake of additional student numbers which will dilute teaching excellence and time available for research, and therefore, the quantity and quality of research activities in the School. We have and will continue to highlight this on multiple TCD and government committees.

The underfunding of the sector, both teaching and research, was identified by the Reviewers and needs to be highlighted at every possible opportunity. There is little or no planning and financial support to maintain or upgrade the infrastructure. While this is a College-wide issue, it is particularly pertinent for STEM Schools given the requirement for well-equipped laboratories. Clearly, as a School, the onus is on us to engage at all levels within TCD and outside TCD to highlight the deficits and provide potential solutions to these urgent needs as highlighted by the Panel.

Opportunities for increased synergy and collaboration between the School of Genetics and Microbiology and the School of Biochemistry and Immunology and with cognate units within the University, in education, research and the provision of infrastructure.

The Reviewers suggested that interactions between the School of Genetics and Microbiology and the School of Biochemistry and Immunology should be encouraged and proposed a number of avenues. We agree with the Panel, and indeed we can be more directive in such interactions between Schools as per the specific suggestions in the Report, while recognising the 'organic' nature of some of these interactions.

Additional commentary/responses/summary:

In conclusion, we would again like to thank the four Reviewers for their time, expertise, and valuable commentary with respect to our School. We will focus on implementing many of their recommendations as per above, and in so doing, we hope that the School can maintain excellence in teaching and research as its primary mission, and importantly, provide a positive and inclusive working environment for students and staff.

Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

MEABHRÁN / MEMO

Chuig / To: **Quality Office**

Ó / From: **Professor Sylvia Draper; Dean of Faculty of Science, Technology, Engineering and Mathematics**

Dáta / Date: **Tuesday 9th September 2022**

Tagairt / Reference: **Dean's Response to Quality Review: School of Biochemisty and Immunology and School of Genetics and Microbiology**

First and foremost, I take this opportunity to extend my sincere thanks on behalf of the Faculty, to the members of the expert review panel: Professor Margaret Harnett, Professor Stefan Niemann, Professor Liz Smythe and Professor Simon Sprecher and internal facilitator Professor John Parnell. In particular, I valued my face-to-face meetings with the review team (in-person and virtual) which book-ended the review process.

The panel undertook a comprehensive review of the Schools of Biochemistry and Immunology and Genetics and Immunology, meeting all the relevant stakeholders (21st-25th March 2022 inc.) and provided considered and timely reports. These contain a set of frank and well-justified recommendations and propose a clear path for prioritising strategic and future directions.

Both reports recognise the collegiality, dedication and commitment of the staff in their respective schools and their tireless efforts during COVID-19 to ensure that they delivered a quality learning experience for their students, while retaining an international research profile that the reviewers describe as 'impressive'.

The review, undertaken jointly, of the two schools had a particular remit, namely to assess the effectiveness of:

(i) the governance, management and administration of the School in terms of delivery of its academic mission;
(ii) School responses to College strategies with reference to teaching and research plus engagement with Trinity Research Institutes;
(iii) consideration of opportunities for increased synergy between the two Schools.

Professor Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Dean of Science, Technology, Engineering and Mathematics
Trinity College Dublin
Dublin 2, Ireland

An tOllamh Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Déan Dhámh na hInnealtóireachta, na Matamaitice agus na hEolaíochta
Coláiste na Tríonóide
Baile Átha Cliath 2, Éire

T +353 (0)1 896 2596

Le haghaidh coinní dialainne, déan teagmháil le: Deanstem@tcd.ie

https://www.tcd.ie/stem/

Many aspects of the two reports are identical and, in this respect I look forward to working with the Schools to implement the reviewers' recommendations in relation to:

(i) Seeking greater alignment and commonality in the organisation and progression of their students at both undergraduate an postgraduate level.
(ii) Progressing the filling of senior academic positions as part of consolidated strategic staffing plans that include inter-school considerations and their synergic roles in cognate Research Institutes.
(iii) Consolidating opportunities for joint or interdisciplinary appointments.
(iv) The design and implementation of a workload model that captures the diverse contributions of staff in terms of research, teaching and service.
(v) Understanding fully the outcomes and the consequences arising from the implementation of the new Budgetary Planning and Allocation (BPA) model.
(vi) Challenging perceptions around the 'ownership' of space so as to support the College's space allocation policy and create alternative flexible opportunities for using space effectively.
(vii) Working with the Dean of Research in terms of identifying fundings streams for the maintenance and upgrade of equipment.

Some of the recommendations proposed by the reviewers refer to areas that have been identified internally at college level as a priority. Some of these are, therefore, being addressed via on-going or completed actions around:

(i) the provision of academic and administrative supports to the directors of new courses e.g. within the Human Capital Initiative.
(ii) the capping of student numbers e.g. within the Biomedical and Biosciences stream (TR060). These have been communicated via the faculty-wide responses to CAO increases.
(iii) the HR review of staff development and career progression/opportunities for promotion e.g. changes to the decision-making and feedback processes in relation to Senior Academic Promotions are being led by the VP/CAO and Provost.

Actions that are being taken at Faculty level, which are relevant to the recommendations proposed, are the enactment of an agreement (STEM Strategic Day) to update and then share the College's space atlas across all the schools in the faculty, raising the need to resource the final capstone research projects in the context of the BPA model (highlighted in the Dean's consolidated Annual Faculty Quality Report) and ensuring that, where appropriate, STEM Heads of School are actively represented on decision-making committees e.g. University Council and principal committees.

The external reviewers have voiced some individual and School-specific areas of concern. Two significant examples are (i) disciplinary imbalances within the School of Genetics and Microbiology that need to be tackled e.g. by advancing research and teaching in areas such as Microbiome, Bacterial Genomics and Host Genetics and (ii) an obligation to repay the capital cost overrun on the Trinity Biosciences Institute by the School of Biochemistry and Immunology. The reviewers describe the latter as 'a constraint to innovation', although no payments on this loan have been made for

Professor Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Dean of Science, Technology, Engineering and Mathematics
Trinity College Dublin
Dublin 2, Ireland

An tOllamh Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Déan Dhámh na hInnealtóireachta, na Matamaitice agus na hEolaíochta
Coláiste na Tríonóide
Baile Átha Cliath 2, Éire

T +353 (0)1 896 2596

Le haghaidh coinní dialainne, déan teagmháil le: Deanstem@tcd.ie

https://www.tcd.ie/stem/

several years. Following consultation with the Chief Finance Officer, a proposal to address this capital overrun will be brought for consideration at Planning Group in the next academic year.

In conclusion, I welcome the reviewers' comments and agree with the focus and/or intent of their recommendations. I note that both reports comment on the 'clear leadership' being shown by the two Heads of School and their Executive Committees. I echo this view and believe it is reflected in the Schools' responses which show considerable maturity and self-reflection. I commend the Schools on their impressive record to date in research and teaching, their creation of attractive new course offerings, their high quality publications and funding successes. I look forward to supporting them as they take the steps necessary to ensure that, in the period between now and the next review, we see both Schools grow from strength-to-strength.

Professor Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Dean of Science, Technology, Engineering and Mathematics
Trinity College Dublin
Dublin 2, Ireland

An tOllamh Sylvia Draper *BSc (Exon), PhD (Camb), FRSC, FTCD*
Déan Dhámh na hInnealtóireachta, na Matamaitice agus na hEolaíochta
Coláiste na Tríonóide
Baile Átha Cliath 2, Éire

T +353 (0)1 896 2596

Le haghaidh coinní dialainne, déan teagmháil le: Deanstem@tcd.ie

https://www.tcd.ie/stem/