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This document reports on the working of the Interdisciplinary Research Advisory Panel (IDAP) in developing their guidance for inclusion of interdisciplinary research (IDR) in REF 2021. It is published alongside a summary of the guidance and criteria for IDR from the 'Guidance on submissions' (REF 2019/01) and the 'Panel criteria and working methods' (REF 2019/02).

REF 2021 Interdisciplinary Research Advisory Panel: Review of the criteria-setting phase

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Executive Summary

Key points

The independent review of REF 2014 chaired by Lord Stern noted concerns within the research community regarding interdisciplinary research (IDR): it was perceived to have been disadvantaged at assessment. Analysis of the assessment demonstrated that this had not been the case. However the lower proportion of IDR submitted relative to what might have been expected suggested low confidence within the community of fair treatment for IDR. The report recommended that structures should be implemented to support submission and assessment of IDR in REF 2021.

IDAP was appointed to provide expert advice and recommendations to ensure equitable treatment of IDR in REF 2021. The chair of the panel is Professor Dame Athene Donald, and panel members were appointed on the basis of relevant expertise. An underpinning principle for the panel's work was that IDR should be neither advantaged nor disadvantaged for assessment in the REF.

IDAP members noted that analysis of REF 2014 impact case studies submitted had demonstrated significant underpinning IDR. The panel concluded that this was therefore an area for which further specific guidance would not be required, and that their advice should focus on assessment of IDR outputs. Additionally IDAP supported the inclusion of IDR for consideration in unit-level and institutional environment submissions. While the timing of the panel's appointment meant that their input into development of the institutional environment submission was limited, IDAP provided advice on possible metrics for unit-level and institutional environment submission. The panel considered that institutions should identify indicators relevant for their own context rather than supporting a "standard" set, however noting full support for the principles developed by the Forum for Responsible Research Metrics for environment indicators.

IDAP considered relevant evidence and made a number of recommendations regarding outputs for inclusion of IDR in REF 2021:

- For the purposes of REF 2021 the panel developed broad-based and inclusive definitions of IDR encompassing multi, inter and trans disciplinary research, and research arising outside clear disciplinary foundations.
- To ensure that IDR is not to be seen to be outside of mainstream research, IDR outputs will be assessed within the existing sub-panel structures, rather than by a separate IDR panel.
- To support the work of the sub-panels each will appoint at least two IDR Advisers.
- The panel recommended retaining the IDR identifier "flag" from 2014, which will bring research within the purview of the IDR Advisers. Use of this flag will not be made mandatory.
- IDR Advisers will not be solely responsible for undertaking all IDR assessments, but will work with their panel's executive group to determine the most appropriate assessment route, based on requirements of research submitted.

- The IDR Advisers will advise and support all sub-panel members for IDR assessment, and will undertake assessments as relevant to their knowledge, skills and expertise.
- IDR assessment should be undertaken using relevant skills and expertise. IDAP recognise that sub-panels may be constituted of members with a diverse range of knowledge, skills and expertise. Therefore:
 - IDR may be assessed within a single sub-panel if relevant skills, experience and knowledge are identified,
 - IDR can be subject to joint assessment with other panel(s) within or across main panel groupings as appropriate to the research submitted,
 - IDR assessment is distinct from existing cross-referral arrangements, however where appropriate, cross referral may be an option for assessment,
 - Decisions on final scores remain with the panel to which the research is submitted.
- IDR remains subject to the same generic criteria of significance, originality and rigour as other research. IDAP provided guidance on application of the existing criteria to IDR rather than recommend additional or alternative criteria.
- The panel may identify either at allocation or during assessment:
 - if an output has been flagged as IDR but does not meet the agreed definition, or
 - if an output does meet the definition but is not flagged,
 - Where this is the case the panel may amend an output's status accordingly to ensure the most appropriate assessment route. There will be no disadvantage resulting and no penalties to the submitting institution.
- The IDR work of sub-panels will be overseen by main panel IDR members. These IDR members will be members of IDAP.
- IDAP will provide oversight, monitoring and advice on application of IDR guidance, however IDAP will not be directly involved with assessments. IDAP will lead on evaluation of IDR following the conclusion of REF 2021 assessment.
- IDAP recommended formation of a cross panel IDR Network to share best practice, provide support and facilitate inter-panel working – this will include IDAP, main panel IDR members and sub-panel IDR advisers.
- The IDR Network will produce a briefing and induction for new IDR Advisers and other main and sub-panel members in advance of panels reconvening prior to the assessment phase of REF 2021.

Summary of recommendations

IDAP will produce a final report following the end of the assessment phase, having undertaken evaluation of IDR assessment in REF 2021, and making final recommendations for future IDR research assessment. In reflecting on its work throughout the criteria development phase, the panel identified the following areas for which it made interim recommendations for the future:

- Earlier appointment of IDR advisory panel, for input into consultation and initial decisions

- Earlier engagement with main panel chairs following appointment. This will allow a period for building a common agreement of goals before the main and sub-panels start work on criteria development
- Briefing/induction process for IDR advisers and main panel members, to inform background, expectations and opportunities for input and involvement
- Direct engagement with sub-panel members at an early stage in criteria development, to enable an open dialogue with panel representatives to test and inform assessment principles
- Ongoing engagement with panel members throughout criteria development, including meetings of the IDR network as forum for dialogue and information sharing.

Foreword by the panel chair

Being a researcher who has worked for years at the interface between established disciplines, facing up to all the problems that such work faces to be judged 'equally', when I was asked if I was willing to chair REF2021's Interdisciplinary Advisory Panel, I did not feel it was an invitation I could refuse. Nevertheless I recognized the magnitude of the task. To ensure that the panel's recommendations addressed the anxieties that individual researchers and their institutions felt during REF2014 and, by extension, would feel again as REF2021 loomed if nothing were done, we knew we had to think radically. Of course the Stern Review had given us some pointers and the response to the consultation on the Review gave us some more.

So, we set to work and, over the past 18 months, have striven to come up with some recommendations that will reassure the community at large that interdisciplinarity will be treated equitably, alongside all other kinds of research, when it comes to evaluation in REF 2021. Inevitably, not all our recommendations were accepted by the Main Panel Chairs and the REF Steering Group. Nevertheless I believe that the end point we have reached should give confidence to all researchers that interdisciplinarity will be neither favoured nor disfavoured as the sub-panels do their work. Such fundamental confidence I regard as vital if our work is to be regarded as a success.

The main issues obviously arise around outputs. Interdisciplinarity underpinning impact case studies everyone seemed to feel had provoked no issues last time around and there seemed no concern that anything would be different this time. The environment statement offers scope for interdisciplinarity to be discussed but there is no metric associated with it to raise concerns. We set out to come up with a clear definition of what interdisciplinary (ID) research was – and wasn't – and how it might be distinguished from the established route of cross-referral. To define ID research so that it satisfies all possible manifestations is no mean feat, but I hope we have come to a conclusion with which people will be content.

The second strand of our work related to how the actual assessment should be carried out. Stern recommended 'champions' but we felt that conveyed the wrong message: ID work should not need championing by individuals so much as judged fairly. We have therefore recommended that each Main Panel should have at least one member with ID experience, and each sub-panel two people identified as ID Advisors. To support these people in their work a network of all of them, with whom IDAP will interact as their work unfolds, has been created. As issues arise, as uncertainty about procedures and normalisation may occur, this group will provide a forum for discussion and support.

It is probably not possible to anticipate all of the wrinkles that interdisciplinary research may introduce into the REF process. However I hope the major uncertainties that were clearly present in REF2014 have been addressed. I would like to take this opportunity to thank all the IDAP members who have worked with me to reach this point. When I set out I felt this was a daunting task for a group of strangers to pull together. I was delighted by the collegiality with which we all worked and the good humour manifest as we strove to find a unified set of recommendations, work which was also aided by considerable input and support from the wider academic community.

Introduction

1. This report summarises the work undertaken by the Interdisciplinary Research Advisory Panel (IDAP) in the lead up to and throughout the criteria development phase of REF 2021 which took place between January and December 2018. The panel itself was active through the period May 2017 to December 2018. This report sets out our reflections on the process of providing advice and guidance on interdisciplinary research (IDR) for the panels and the four UK higher education funding bodies on:

- a. the representation of IDR expertise on the expert panels
- b. measures to support the submission and assessment of IDR
- c. the processes needed to support these measures during the assessment phase.

2. A key context for the work of IDAP, and the assessment of IDR within REF 2021, comes from the findings and recommendations of the independent review of the previous REF led by Lord Stern in 2016¹. A number of these recommendations directly address IDR within future REF exercises. The review noted that while there was little evidence of discrimination against IDR by the REF 2014 panels, HEIs may have been risk averse in submitting or identifying IDR outputs due to perceptions that it may be disadvantaged in the assessment. As a result, the review identified a number of actions aimed at improving confidence in IDR assessment in the REF.

3. A central theme of these recommendations is that such confidence could best be achieved through the development of a clear and consistent approach to the assessment of IDR outputs, underpinned by supporting structures within and across panels. The review also recommended the inclusion of institutional-level information on impact and environment relevant to IDR to provide wider context for submissions into units of assessment (UOAs).

Purpose of IDAP

4. IDAP was constituted to address the recommendations from the Stern review, working to agreed Terms of Reference at Annex A, which set out the panel's role in providing advice to embed equitable treatment for IDR in REF 2021.

5. Our work evolved throughout the criteria phase, and we have provided advice and guidance on:

- a. developing an agreed definition of IDR for REF 2021 to support consistent use of an IDR flag for outputs
- b. including IDR expertise in appointments to the main and sub-panels
- c. developing guidance to support the assessment of interdisciplinary outputs in the application of the assessment criteria of originality, significance and rigour
- d. developing the role of the IDR adviser and the wider panel structures to support IDR assessment

¹ Available at: <https://www.gov.uk/government/publications/research-excellence-framework-review>.

- e. including a section in the environment template for submitting units to describe the structures supporting IDR (where appropriate)
- f. IDAP's future role throughout the submission phase and in supporting the work of the panels throughout the assessment stage.

Constitution of IDAP

6. IDAP is chaired by Professor Dame Athene Donald, and includes members from across the UK. Members were appointed following a nominations process², and include experienced researchers collectively with extensive interdisciplinary and research assessment experience across all main panels. The membership of IDAP in the criteria phase, including observers, is included at Annex B.

7. The panel is supported by the REF team within Research England (formerly HEFCE), who provide the panel secretariat function. The funding bodies are represented by the chair of the REF steering group.

IDAP's working methods

8. We took an evidence-based approach to developing our advice, drawing on consultation feedback, relevant policy analysis, academic literature and feedback from the main and sub-panels.

9. We met four times during the criteria development phase:

- a. In May 2017, following the analysis of the consultation on the REF, the panel met to consider consultation responses, to input into the initial decisions on the REF and to advise on the appointment of panel members.
- b. In September 2017, the panel began development of its advice on the detailed guidance and criteria.
- c. In February 2018, the panel met to review and agree its advice to panels on the guidance and criteria, and to consider the future role of IDAP.
- d. In November 2018, the panel held its final meeting of the criteria phase to review responses to the consultation on the guidance and criteria, and to advise on assessment phase processes for supporting IDR.

10. Throughout this time panel members, in particular the chair, attended a range of additional meetings to liaise with colleagues and the wider community, both to represent the work of the panel and to engage with others regarding IDR in the REF. This included representing IDAP at meetings of the main panel chairs, attending the Forum for Responsible Research Metrics (FFRRM), attending REF sub-panel meetings to provide an overview of IDAP's considerations, and convening a first

² Details of the nominations process can be found at: <https://re.ukri.org/documents/hefce-documents/idr-ap-recruitment/>

meeting of the IDR network, consisting of IDAP, sub-panel IDR advisers and main panel IDR members.

Part 1: Background

11. This section provides a brief examination of the background to our work, including evidence regarding the assessment of IDR within REF 2014, and perceptions of the research community.

12. Analysis carried out by HEFCE's Analytical Services Group of submissions to REF 2014 identified that there was parity of assessment by the panels and no indication of more or less favourable treatment for outputs identified as IDR³. Additionally, a significant proportion of the impact case studies submitted (nearly two thirds) were underpinned by some level of interdisciplinary work⁴. The significant impact of IDR case studies was highlighted in the report of the independent review of metrics in research assessment undertaken in 2015⁵.

13. However, a citation-based analysis of REF 2014 submissions suggested a proportional underrepresentation of IDR outputs in REF submissions⁶, indicating a confidence issue with submitting IDR outputs in REF. This was supported by the responses to the call for evidence as part of the Stern review, which identified the disciplinary UOA structure of the REF as a potential barrier to submission of IDR.

14. The Stern review took into account a range of evidence⁷ and recognised that IDR has a significant role to play in addressing 'grand challenges' for the future, and that it enhances both academic and socio-economic creativity. In consequence, the review set out a number of actions to build community confidence in submitting IDR outputs and to further embed IDR within the REF, including the appointment of interdisciplinary 'champions' on the expert panels, and explicit encouragement for the submission and identification of IDR in the REF⁸.

³ See <https://www.ref.ac.uk/2014/results/analysis/outputprofilesanddiversity/>.

⁴ The nature, scale and beneficiaries of research impact: An initial analysis of Research Excellence Framework (REF) 2014 impact case studies (King's College London and Digital Science 2015). Available at: <https://www.kcl.ac.uk/sspp/policy-institute/publications/Analysis-of-REF-impact.pdf>

⁵ The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management This is available at: <https://re.ukri.org/news-events-publications/publications/metric-tide/>

⁶ A review of the UK's interdisciplinary research using a citation-based approach (Elsevier 2015). Available at: <http://www.hefce.ac.uk/pubs/rereports/year/2015/interdisc/>.

⁷ Key documents included:

- A review of the UK's interdisciplinary research using a citation-based approach (Elsevier 2015)
- Report on the Landscape of IDR in the UK (Technopolis 2016)
- The interdisciplinarity survey report for the Global Research Council (DJS Research 2016)
- Crossing Paths: Interdisciplinary institutions, careers, education and applications. (British Academy for the Humanities and Social Sciences 2016)
- Evaluating Interdisciplinary Research: a practical guide. (Strang and McLeish 2015)
- Call for Evidence Independent review of the Research Excellence Framework (REF): Synthesis of responses (Technopolis 2016)

⁸ See page 28. Available at: <https://www.gov.uk/government/publications/research-excellence-framework-review>.

15. Proposals for implementing these recommendations were included by the funding bodies in the 2016 Consultation on the Second Research Excellence Framework, namely that: there should be a role providing expertise and oversight for assessment of IDR within each sub-panel; the IDR identifier 'flag', first used in REF 2014, should be mandatory; and information on each submitting unit's approach to, and support for IDR, should be required through their unit-level environment submission.

16. Further proposals were made to introduce submissions at institutional level that would assess the strategic approach and activities to support interdisciplinary working through an institutional environment submission, and highlight the impact of IDR through institution-level impact case studies.

17. We commenced our work following the funding bodies' consultation. On reflection, we believe that beginning this work earlier would have been of value to the development of the early proposals and their earlier feed in to the work of the main panels

Part 2: IDAP's advice

18. This section sets out our approach and processes in developing our advice for the funding bodies and the panels.

19. Across our first three meetings, we assessed and considered a wide range of evidence in order to inform our developing guidance and advice. Throughout this process we were mindful of consultation feedback and evidence emerging through other mechanisms, such as engagement and consultative events undertaken by the REF team and IDAP members, and feedback from advisory panels, such as the Environment working group of the Forum for Responsible Research Metrics, and professional organisations.

20. Following our February 2018 meeting, our initial advice was provided to the main and sub-panels, for comment, as part of the development of the panel criteria. The IDR advisers within each main panel also met for the first time during this period to consider and feedback on the arrangements for the IDR network, its working methods and supporting structures.

Initial decisions

21. At our first meeting in May 2017 we were asked to review feedback from the REF consultation around IDR, in order to provide advice on the funding bodies' initial decisions on the exercise. As noted above, we believe it would have been beneficial to the process had we met earlier and been able to input into the proposals and questions put forward for consultation.

Responses showed general support for the majority of the IDR measures proposed⁹. There was, however, a call for a clear definition of IDR to inform the use of the IDR identifier and for clarity on the role of the IDR advisers. Consequently, we were invited to provide advice to the REF Steering Group, made up of representatives from the four UK higher education funding bodies, to inform the development of the 'Initial decisions on the REF 2021' (REF 2017/01)¹⁰ with regard to the IDR identifier and definition and appointment of IDR focussed panel members.

IDR identifier and definition:

IDR identifier:

22. The panel was asked to advise on the proposal to make mandatory the identifier for submission of IDR outputs, initially used in REF 2014. While this had received support in the consultation, we were concerned that making the flag mandatory could increase burden for institutions, which would be disproportionate to the intended benefits.

23. On this basis we advised continuing the use of an optional IDR flag. However, in order to support the use of the flag, we consider that further guidance should be provided on its use. We felt it would be very important for there to be a clearly understood distinction between use of the IDR flag and the use of the flag requesting cross-referral.

24. Use of the IDR flag is intended to bring an output within the purview of a sub-panel's IDR adviser who will advise the chair on assessment and ensure that relevant expertise is sought either within or outside the sub-panel. The cross-referral flag should be used to request that an output – that could be mono- or interdisciplinary – submitted in one UOA should be cross-referred to another sub-panel for advice.

25. We wanted to encourage HEIs to use the flag to identify IDR and were clear that there should be no negative consequence for HEIs in doing so. We recommended that sub-panels should assess whether outputs are correctly identified as IDR, for the purposes of REF assessment. Where an output is incorrectly identified we advised that these should be assessed within the normal practice of the sub-panel. However we also felt it was important to stress that where an output was 'unflagged' by the panel there would be no detriment.

Definition:

26. Further to the consultation feedback we were asked to consider a definition of IDR for the purposes of the REF. Developing and refining the definition was undertaken iteratively throughout the meetings to February 2018, and through correspondence during the criteria-setting phase in order to respond to feedback from the panels.

⁹ See paragraphs 60-63. Available at: <http://www.ref.ac.uk/publications/2017/consultationonthesecondresearchexcellenceframeworksummaryofresponses.html>.

¹⁰ <http://www.ref.ac.uk/publications/2017/initialdecisionsontheresearchexcellenceframework2021.html>

27. We were clear that the REF required a definition that would ensure sufficient clarity to support HEIs in their identification of IDR and give them confidence to use the flag. This decision took into account the consultation feedback that, without a clear definition, it would be challenging for institutions to accurately identify their IDR outputs. We also recognised that the framing of any definition might influence HEIs' submission decisions, and that there was a need to consider any unintended consequences arising from this.

28. It was important for us to recognise and consider the variety of related concepts, terms and definitions for research undertaken using theories and methodologies associated with two or more differing disciplines. In developing our advice on a definition we considered wider literature on defining inter, multi, cross and trans-disciplinary research (see Annex C), and recognised the need to incorporate research outside of established disciplinary approaches within our considerations.

29. We noted that practice within disciplines develops over time, including the adoption and use of approaches originating in or associated with other disciplines, and that these may become established research practice. Research may then fall within the scope of a single REF UoA and could be assessed by the sub-panel within their normal practice. We therefore identified that there should be an innovative aspect to the research in order to differentiate it from established disciplinary practice.

30. Our considerations therefore sought to emphasise recognition of research which draws on the theories, methods and/or traditions of differing disciplines innovatively. Such research should be able to demonstrate clear interaction and integration of the component elements, and should move beyond established disciplinary practice, achieving outcomes which would not have otherwise have been possible.

31. Based on these considerations, we developed our initial advice for a working definition of IDR. This advice was taken to main and sub-panel meetings, including meetings of the IDR advisers within each main panel, for feedback during the first round of criteria development.

32. Feedback from panels sought further development of the definition for clarity. It was noted that a significant amount of research across all UOAs could be seen to go beyond core disciplinary methodologies, and there were concerns that this definition could lead to significant volumes of submissions with approaches which may already be well-established practice within the UOA. It was suggested that a stronger focus could be achieved through a definition that emphasised integration of disciplinary approaches, and made clear that IDR involves working beyond established disciplinary norms, and also includes research with no clear disciplinary origin.

33. Sub-panels also highlighted that their membership incorporates individuals with a range of knowledge, skills and experience within, across and beyond their disciplinary areas. Feedback noted that some sub-panels are significantly broad in their scope, representing a wide range of knowledge and skills. This being the case, much of the IDR submitted may fall within scope of the receiving UOA to assess, rather than necessarily requiring cross-panel working.

34. The feedback allowed us to refine our definition, to identify more clearly key features of IDR within the definition. Our conclusion was that, for the purposes of the REF, there should be a broad and inclusive definition, providing an emphasis that there should be clear interaction between the differing disciplinary elements of research (including approaches outside of established disciplinary traditions or practices), but without narrowly confining what this should be or how it should be achieved.

35. The definition of IDR recommended by IDAP is:

“For the purposes of the REF, interdisciplinary research is understood to achieve outcomes (including new approaches) that could not be achieved by established disciplinary approaches alone. Interdisciplinary research features significant interaction between two or more disciplines and / or moves beyond established disciplinary foundations in applying or integrating research approaches from other disciplines.”

Appointment of IDR panel members

36. IDAP was invited to provide advice on the assessment of IDR in the REF. The consultation had identified two possible approaches: retain assessment of IDR outputs within the work of the sub-panel to which they are submitted; or that all IDR submitted should be assessed by a single, specialist IDR panel. A guiding principle throughout our work, was that IDR should not be seen as a ‘special case’ or, conversely, marginalised for assessment. In considering our guidance on this issue we concluded that our recommendation should be an approach to ensure that IDR sat firmly within the mainstream of assessment and would be undertaken within the work of the sub-panels rather than by a separate, specialist panel. In this task, the sub-panels would be supported by the IDR-specific panel appointments.

37. We felt that the creation of dedicated IDR roles on the expert panels was essential to provide reassurance to the sector that IDR outputs would be treated equitably. In developing our advice for the ‘Roles and recruitment of the expert panels’ (REF 2017/03)¹¹, we considered how these roles could contribute to the oversight of IDR assessment; how these roles would be defined and what skills and knowledge would be required; and how to recruit individuals with the required skills through the panel appointment process. However we felt that the use of the word ‘champion’ as recommended in the Stern Review, might put too much onus on an individual to speak up for IDR *per se* rather than judge it within the terms we were proposing.

38. We considered the proposals and the arguments put forward through consultation, concluding that the proposed role of the IDR ‘adviser’ was one which would work most valuably within the sub-panels in order to embed IDR into their work. We agreed that there should be at least two IDR advisers on each sub-panel, who should have an advisory and oversight role within their sub-panel. Having at least two advisers would mean that issues around conflicts of interest were

¹¹ <http://www.ref.ac.uk/publications/2017/rolesandrecruitmentoftheexpertpanels.html>

reduced and there would be the added benefit of having an identified colleague within the sub-panel with whom to discuss any emerging issues.

39. We additionally recommended that there should be at least one member on each main panel appointed with relevant knowledge and experience, who would have oversight of IDR across the main panel's constituent sub-panels. This would ensure that IDR was embedded throughout the structures involved in delivery of the assessment, and support consistency within and across the main panels.

40. We also recommended that knowledge, understanding or experience of interdisciplinary working should be specifically considered in panel member recruitment more widely. We advised that this be included in the terms of the recruitment process in order to identify and recruit relevant experience for each main and sub-panels.

Role of the IDR adviser

41. We considered that the IDR advisers should provide specialist advice and guidance on incorporating considerations around IDR within the developing criteria and working methods, and play a key role throughout the assessment phase. The role would therefore extend beyond simply championing IDR, and would need to include advising the panel chair on allocation of assessments, advising on any requirement to cross-refer, and maintaining an overview of IDR assessments being undertaken.

42. We considered it important that those undertaking this role should also undertake assessment of outputs relevant to their background and knowledge, and they should not be seen to be exclusively responsible for undertaking the assessment of all IDR outputs. It would be expected that some outputs flagged as IDR could appropriately be assessed by sub-panel members not specifically identified as IDR Advisers. In view of their additional responsibilities, there would have to be an appropriate reduction in the volume of outputs allocated to the IDR advisers for assessment, to ensure a comparable workload with that of other sub-panel members. In addition, as full panel members they would also be fully involved in the assessment of the impact and environment elements of submissions. This reflected a primary principle for our panel that IDR should not be perceived as having a 'special' status, and that its equitable assessment is the responsibility of the whole sub-panel.

43. Our further recommendation was that for the criteria setting phase there should be at least one IDR adviser appointed to each sub-panel, to input in the development of the criteria and the supporting structures and network around IDR assessment. However, during the assessment phase, in order to ensure sufficient capacity and avoid overburdening individual IDR advisers, it was decided that each sub-panel should appoint a minimum of two IDR advisers.

44. We considered that there would be a need for IDR advisers to build linkages across panels in order to share experience, practice, support and advice, and where appropriate to agree shared working arrangements, rather than working in isolation. We therefore also recommended that there

should be a mutually-supporting network of IDR advisers within and across main panels, led by the main panel IDR members, to support exchange of knowledge and experience, and to facilitate cross referrals where required.

45. The IDR advisers met as main panel groupings between April and June. Feedback from these groups highlighted concerns that, without guidance and a coordinated approach to working within and across main panel structures, there was a risk that each main panel could develop differing practice. A lack of agreed process could present a risk of inconsistency in approach and undermine HEI confidence in the overall approach to IDR assessment. The IDR advisers were clear that they would welcome advice on their role, as well as a clearer role for the main panel IDR members in focusing and coordinating the work within each main panel group and in leading cross main panel working. The IDR advisers also called for greater involvement of IDAP in the process in order to promote and support coherence across the main panels.

46. Following on from the IDR advisers' feedback, we further developed our guidance. We recommended that the IDR adviser role should encompass: advice on the processes of IDR assessment within their sub-panel, including advising the chair on allocation of outputs for assessment and whether additional input is required from other sub-panels; contribution to and liaison across the IDR network and engagement with main panel IDR leads; to work with other IDR advisers as needed, to lead on calibration of IDR at sub-panel level, and contribute to calibration across sub-panels; and, to have involvement in the moderation of IDR outputs within and across sub-panels. In order to support IDR advisers appointed for the assessment phase, IDAP, together with the existing IDR network and the REF team, will brief and induct new IDR advisers during the pre-assessment preparations in 2020. It was felt that IDAP's involvement with the IDR network could usefully have started earlier, which might have obviated some of the concerns the IDR advisers expressed initially.

Advice on the assessment criteria

47. IDAP members were clear that interdisciplinary research will be assessed against the same criteria of originality, significance and rigour as all other outputs. The interpretations of these criteria are developed by the main panels and set out within the 'Panel criteria'. During our considerations of how best to support the assessment of IDR, we discussed whether there would be a need for further guidance on interpreting these criteria for IDR outputs.

48. The group felt that there may be potential challenges in interpreting the generic criteria in an IDR context and that, although the process will be supported by IDR advisers, further guidance would help both panel members and IDR advisers. In developing this guidance we considered and drew on work undertaken within the academic community, exploring approaches to the assessment of interdisciplinary research.

49. As previously noted, we recognise that there are a plurality of terms and definitions for research spanning disciplinary boundaries, and that many would fall within our definition of IDR. We concluded that our guidance should emphasise that while there is need to demonstrate originality

and significance in the research, it was necessary to address concerns that IDR might be expected to demonstrate significance and originality in all disciplinary elements, thus creating a higher standard for assessment compared to mono-disciplinary research.

50. We wanted it to be clear to HEIs and the panels that originality and significance can be shown in any of, but should not be required to be demonstrated for all, disciplinary elements. While individual disciplinary elements might be considered standard practice in their own fields, originality and significance could be achieved through the novelty and value of the approach to the research itself, in bringing together differing approaches in an innovative way including by their integration.

51. We developed our initial advice specifically considering the assessment criteria of originality, significance and rigour. This advice was provided to the panels to consider through the criteria-setting process, and is set out below:

- a. *In applying the criteria of originality and significance to assess IDR outputs, the sub-panels will take into account that the criteria do not need to be demonstrated across all of the constituent parts brought together in the work, but may be identified in one or more parts, or in their integration.*
- b. *All elements of the research should demonstrate appropriate academic rigour with a clear rationale for their application to the question posed by the research.*

49. The panels welcomed the principle of having guidance on assessing IDR, but raised some concerns about the potential risk of confusion through the provision of additional interpretations for originality, significance and rigour. There was some uncertainty about whether the interpretations would supersede or supplement the existing generic criteria, and reflection on the extent to which additional interpretations may overly single out IDR. These concerns were underlined by the main panel chairs, who suggested that additional guidance may confuse HEIs and panels.

50. Taking into account the comments of the panels, we concluded that there remained a need for additional support for assessment of IDR but that this should be more clearly presented as supplementary guidance to the main panel criteria.

51. Our guidance on the criteria for assessment are set out in the 'Panel criteria'¹², and included below:

Interdisciplinary outputs will be assessed against the generic criteria of originality, significance and rigour. In assessing interdisciplinary outputs, the sub-panels will make use of guidance provided by the Interdisciplinary Research Advisory Panel (IDAP) that originality and significance can be identified in one, some, or all of the constituent parts brought together in the work, or in their integration; they do not need to be demonstrated across all contributing

¹² 'Panel criteria and working methods' (REF 2019/02).

areas/fields. This guidance will work in parallel with – rather than replace – the generic criteria of originality, significance and rigour.

IDAP members' reflections:

52. The general experience of panel working has been positive, with a common ethos which facilitated progress despite panel members' disparate backgrounds and experience. We have been able collectively to contribute to and work towards agreement of advice and guidance to strengthen the approach to assessment of IDR in REF 2021. A key aim throughout has been to recommend an approach that will give confidence to HEIs, and to the assessment panels themselves, that IDR will be treated equally in assessment.

53. As noted, we believe that IDAP's work should have begun earlier in the policy development process, ahead of the announcement of the 'initial decisions' in September 2017. We are also of the opinion that greater and earlier interaction between IDAP and the panels, in particular the IDR advisers and main panel leads, would have been productive and would have enabled a more integrated approach to developing the guidance, criteria and working methods.

54. The first two IDR adviser meetings were held following the relevant sub-panel meetings. IDAP members did not attend these meetings, nor have other opportunities to engage with the IDR advisers. There is a shared feeling between the IDR advisers and IDAP members that engagement right from this early stage would have been beneficial, and may have helped address some of the issues and concerns arising with both the IDR measures in the guidance and criteria and the panel processes aimed at supporting these measures.

55. We felt that lack of early interaction with the main panel chairs meant that we did not have the opportunity to fully engage them with the detailed considerations we gave to our recommendations and guidance for IDR in REF. At times this meant that we had to lobby robustly for and defend the inclusion of IDAP's guidance. Understandably, this was a source of some frustration to IDAP members.

56. Throughout our work we have been mindful of the need to ensure that there is a clear understanding that there will be equal consideration and parity of esteem for IDR within the assessment, and understanding amongst all panel members that this is a shared responsibility. A key consideration is that IDR advisers and IDR main panel members should feel that they are able to engage with their panels to support assessment, and that they are in turn supported by the IDR network, and are able to seek advice, discuss challenging issues and raise concerns through it. We recognise that each sub-panel will develop its own specific approaches.

57. Having taken feedback from the IDR advisers and main panel IDR leads, we recognised the need to improve the communication around IDR between IDAP, main panel IDR leads and sub-panel IDR advisers. To this end, we held a meeting in advance of the third round of main and sub-panel meetings for these groups to explore guidelines and working practice together.

58. In meeting with the IDR network we were able to explore issues of concern for panels and sub-panels. We were also able to provide clarification on our considerations in developing the guidance for the criteria, and our proposals for the role of the IDR network in supporting assessment. The meeting reviewed the proposed scheduling of meetings for the network within the assessment phase and discussed how the network could provide practical support to the sub-panels in undertaking assessment.

59. Some of the key issues raised by panels concerned consistency in approach across sub-panels, and how HEIs, sub-panels and the funding bodies will each use the IDR indicator. There were also a number of suggestions, including a need to ensure that calibration for IDR is undertaken early in the assessment phase and involves all sub-panel members.

60. IDR network members highlighted that they would welcome additional support for IDR advisers and panel members in the assessment phase. To this end we have agreed to work with the network to develop a briefing in advance of the assessment phase to feed into the induction of new IDR advisers in 2020 and more broadly to support IDR assessment within the sub-panels. It was agreed that a further meeting of the network, including IDAP members, should be held before the sub-panels reconvene in 2020 to develop this briefing.

IDR in environment submissions

61. IDAP was asked to provide advice to the funding bodies on the inclusion of IDR-specific information in the environment submission. This encompassed a range of considerations: requesting IDR information in the unit-level template; providing recommended indicators for interdisciplinarity; and requesting IDR information in the institution-level environment submission and institution-level impact case studies.

Unit-level environment

62. It was noted that there had been wide support through consultation for the inclusion of IDR-relevant information within the environment submission and the panel was invited to comment on the inclusion of an IDR section within the unit-level environment template. In developing our advice we took into account the potential benefits of offering the submitting unit the opportunity to showcase their resources and approaches to support IDR, which may not be captured elsewhere in the submission.

63. On this basis we supported the proposal to include IDR support mechanisms explicitly within the template. However, we also advised that this information should not be considered mandatory and noted that its inclusion would depend on the context of the submitting unit. We further advised that clear guidance would be needed to reassure institutions that units would not be penalised where inclusion of this information would not be appropriate.

IDR indicators for Environment

64. One of the Stern review's broader recommendations was the development of a common approach to the use of metrics within REF 2021. To take this recommendation forward, the funding bodies worked with the Forum for Responsible Research Metrics (FFRRM) to develop advice on the use of quantitative indicators within the environment element, at both submitting unit and institution level.

65. We were invited to consider potential indicators relevant to interdisciplinary research and supporting mechanisms, working with the FFRRM Environment working group. The working group chair highlighted that the purpose of the indicators would be to evidence and support the narrative statement. In its advice to the REF panels the working group set out a number of underpinning principles to which any indicators proposed for use in the environment statement should conform, including the principle that indicators should neither advantage nor disadvantage IDR¹³.

66. We concluded that while there are clear benefits to submissions using data to support and evidence their narrative submission, we had concerns regarding the potential burden for institutions, as many of the suggested indicators would reflect data not already collected or held by institutions. We were also not convinced that the suggested IDR indicators were robust.

67. On this basis, we did not recommend the inclusion of any IDR-specific indicators, and advised that institutions should be able to provide supporting information as relevant to their submission. As a group, we supported the underpinning principles developed for presenting quantitative information on IDR within the FFRRM's guidance.

Interdisciplinary research and institutional-level assessment

68. IDAP was asked to advise the funding bodies on the inclusion of IDR within the proposed institutional-level submissions for environment and impact, as recommended in the Stern review. The consultation proposed the following approach for the assessment of institutional-level submissions:

- a. Environment: assessment of institutional-level environment submissions through an additional environment template. In part the aim of this proposal was to reduce duplication in unit-level submissions; however, it was proposed that this would also capture wider institutional strategy and direction, including approaches to support IDR and cross-institutional working. This would be subject to unscored assessment in REF 2021 through a pilot panel in order to produce recommendations for inclusion in future REF exercises.
- b. Impact: assessment of institution-level impact case studies; this was intended to allow institutions to demonstrate impacts arising through interdisciplinary and collaborative

¹³ FFRRM advice to REF2021 Panels: this can be found at: [FFRRM Advice to REF2021 Panels](#)

approaches at a wider institutional level, and which could not otherwise be submitted through unit-level submissions.

69. The inclusion of IDR information within in an institutional-level assessment of environment was seen by the panel as offering clear opportunities for institutions to present initiatives and structures that support IDR outside of departmental or faculty structures. Examples the panel considered included interdisciplinary institutes that do not sit within departments and seed-corn initiatives to stimulate IDR within institutions. The institutional-level statement would also provide scope for institutions to describe how their infrastructure as a whole supports different types of research, including IDR.

70. With regards to the institutional-level assessment of impact case studies, IDAP members noted the issues highlighted by respondents to the 2016 consultation. There was some concern that the terms 'interdisciplinary' and 'institution' had become conflated in this proposal and a sense that the assessment of impact in REF 2014 had been sufficiently open to incorporate IDR case studies. Noting also the proportion of impact case studies underpinned by interdisciplinary research that were submitted in 2014, we concluded there was insufficient evidence to support the need for this to be incorporated.

71. IDAP also considered the inclusion of interdisciplinary 'bodies of work' for impact case studies and the need to ensure recognition for the wide variety of activities and broader portfolio of work delivering impact. The panel noted that, although highly relevant to the remit of IDAP, and an issue on which IDAP members were able to contribute, the timing of our involvement meant that we were not involved sufficiently closely in the discussions to influence the development of this area of guidance.

Panel members' reflections

72. We were clear throughout our considerations that the research environment is a key issue for IDR, impacting as it does on the opportunities for individual researchers and approach taken both at unit and institution levels. As noted earlier in this report, it is widely recognised that IDR can play a valuable role in addressing complex social and environmental ('real-world issues), and indeed a number of the sub-panels have highlighted that they are inherently interdisciplinary in focus.

73. On this basis we strongly support the inclusion of IDR as an element of the unit level and institutional environment submission. While we are also clear that this has to be contextual and recognise that this may not be relevant for all submissions, we consider that this represents a valuable opportunity to gain greater insight into the structural underpinnings and support for IDR.

74. A particular point of interest for IDAP was the way in which the research environment affects and influences groups such as early career researchers (ECRs) in their opportunities and choices in undertaking IDR, and in the development of their careers. We hope that the work of IDAP will help further to underpin IDR as a recognised and valued aspect of academic endeavor, giving confidence to ECRs that such research is exciting and powerful.

75. Although we did not consider that there was sufficient evidence to support the requirement for institution level impact case-studies, as had been proposed in the Stern Review, we do wish to note IDAP's interest in the interdisciplinary aspects of case studies.

76. While we felt that we were unable to support a standard 'set' of indicators for IDR, we fully support the principles for use of indicators issued by the Forum for Responsible Research Metrics. We strongly encourage the use of appropriate quantitative indicators to support the narrative submissions for both institution and unit level environment submissions.

Assessment phase working methods and implementation

77. Following the work of the panel during the criteria development phase, the role of IDAP going into the assessment phase will change significantly. Our role will move from being developmental and advisory, to one more focused on oversight and assurance of the application of agreed processes for IDR assessment. IDAP will observe process, gather and review evidence, and undertake evaluation.

78. IDAP will undertake an ambassadorial role through the submission phase, in order to inform and provide confidence to HEIs. IDAP will provide advice to and engage regularly with the IDR network and main and sub-panel members on the application of the agreed processes, and to review progress of IDR assessment throughout 2021. IDAP will, however, maintain clear separation from the assessment of the individual outputs themselves.

79. Our role in the post-exercise evaluation will ensure that there is a consistent and continuous body with direct responsibility for, and understanding of, the approaches to IDR assessment, and the underlying rationale for this. IDAP members see this overall role throughout the REF as providing assurance in process, and giving reassurance to the wider community.

80. This approach demonstrates an ongoing commitment to the recognition of the value, and equitable assessment of IDR in the REF, ensuring that there are clear mechanisms to support the assessment and evaluate its effectiveness. This will enable recommendations concerning IDR for future REF exercises to be made on the basis of direct experience, arising from a considered and planned approach.

Support for IDR measures through REF 2021 and IDAP's future role:

81. IDAP was asked to consider what measures should be put in place throughout the submission and assessment phases of the REF. In forming our advice we were asked to consider if, within the structures of the panels and based on our recommendations to date, there would be sufficient support for the assessment of IDR. We were also asked to provide advice as to whether we considered there is a useful ongoing role for a body such as IDAP through the later phases of the exercise.

82. Taken as a whole, we believe that the proposed approach presents a robust foundation for the assessment of IDR, which supports and recognises the need for specific consideration, but which does not segregate IDR from the main business of assessment. It constitutes a consistent and cohesive approach to undertaking assessment across the sub-panels, underpinned by collaborative working across the panels through the adviser network. The work of the sub-panels and the communication between IDR Advisers through the IDR network is itself supported by the main panel IDR members.

83. In order to achieve a cohesive and consistent whole we recommend that IDAP continue as a body with oversight of, but not directly involved in the assessment of IDR and that we work closely with the IDR network. In the assessment phase, this panel will provide high-level oversight of IDR assessment and the application of process, a forum for discussion of issues arising, and an expert advisory body to provide guidance on the application of the process for assessment monitoring consistency across the board. IDAP will also take a lead on analysis of IDR within the REF, reviewing the effectiveness of the overall approach and processes for the assessment of IDR.

84. IDAP members considered that the work of the sub-panels and the IDR network should be supported through representation of main panel IDR members on IDAP. This will ensure a common thread of communication throughout and across the IDR structures as a whole, helping to provide consistency in approach and a common set of expectations and aims.

85. The panel proposed the following role for IDAP throughout the subsequent phases of the REF:

- a. *Submission phase*: an ambassadorial role, communicating and promoting the enhanced measures to support interdisciplinary research within the REF2021 to support sector confidence.
- b. *Assessment phase*: providing advice to the main panels on the consistent application of the process, including advice and support on any issues arising in the implementation of the 2021 IDR measures. The panel will not have a role in directly assessing submissions, however the role may include attendance and observation and input at IDR network and sub-panel meetings, to provide advice and support. During this phase, the panel will also gather evidence to inform their assessment of the effectiveness, and consistency of application of the 2021 interventions.
- c. *Evaluation phase*: Review the assessment of interdisciplinary research in the REF and the success of the application of process and its effectiveness.

86. Informed by IDAP's advice, the REF Steering Group agreed emerging proposals for IDAP's future role at its January 2018 meeting. The steering group agreed with the principles that the panel would add value to the assessment of interdisciplinary outputs, have a clear and distinct role, avoid conflicts in governance and help ensure wider confidence in the assessment process for interdisciplinary research.

87. At the end of the criteria-setting phase, IDAP will reduce in size and reconstitute its membership, with a view to these future activities. The interests of the assessment panels will be represented by the main panel IDR members, and this will provide valuable 'real-world' intelligence for the panel, drawn on the experience and concerns of IDR advisers and others undertaking assessment.

88. Some of IDAP's members in its initial phase were subsequently appointed as sub-panel chairs or members. In holding this dual role during the criteria development these members provided invaluable insight to inform the work of IDAP. These panel members identified at the February 2018 meeting that they would wish to stand down from membership of IDAP as part of this proposed restructure of the panel, and that this would help to avoid perceived or actual conflicts, and ensure that IDAP stands separate from the assessment.

Part 3: Recommendations and further considerations for the future

89. We were pleased to note the general support expressed in the 2018 consultation¹⁴ for the increased focus on IDR within the REF and the work of IDAP. However the consultation also raised issues of concern for the community, key amongst which were a desire for greater clarity on:

- the IDR-focused panel roles and the processes for assessment
- the purpose and use of the IDR identifier
- the role of IDAP in supporting the assessment of IDR during the assessment phase.

90. IDAP, working with the main panel chairs, has sought to address these issues through the revised guidance and criteria for the REF, and through the approach set out in this report. IDAP will also provide opportunities for HEIs to discuss and clarify issues in relation to IDR throughout the submission phase, as part of our 'ambassadorial' role, in providing confidence for HEIs to include and identify interdisciplinary work.

91. In framing the panel criteria for IDR, we have sought to provide clear, concise and comprehensible criteria for the panels, which will help guide HEIs in developing their submissions. To support these criteria, IDAP will work with the IDR network to develop supplementary briefing materials for IDR advisers and main panel members, and for main and sub-panel members more broadly.

Reflections on the process

92. In reflecting on our work, we felt that we were able to work positively and cohesively despite, and maybe even because of the wide ranging backgrounds of the members, which we felt was a key strength for the group. The variety of experience and expertise amongst the membership, and the

¹⁴ In July 2018, the four funding bodies published draft guidance and criteria for consultation. More information can be found at: <http://www.ref.ac.uk/publications/draft-guidance-on-submissions-201801/> and <http://www.ref.ac.uk/publications/consultation-on-the-panel-criteria-and-working-methods-201802/>.

insight provided by members who were subsequently appointed as sub-panel chairs or members, were invaluable.

93. While we feel that the outcome of our work has resulted in a flexible but robust approach which we hope will be seen as such by the wider community, we do note that the process by which this was achieved could have been improved.

94. A key issue for the members was in the timing of appointment of IDAP. The panel was constituted following the consultation in 2017 and amongst our early tasks was to consider the consultation responses relevant to IDR. However, as a group we consider that it would have been more effective to have constituted IDAP at an earlier stage when we could have provided input into the development of the issues for consideration within the consultation itself.

95. The timing of our work also created challenges in feeding our advice into the guidance and criteria. In retrospect it would have been helpful to engage with the main and sub-panels at an earlier stage and more extensively, both to inform and gain their input on the range of issues around IDR in the REF. The approach that was taken meant that IDAP was not always working in close contact with the community its work aims to inform and support. This led to some frustrations.

96. In engaging with the main and sub-panel IDR members it was evident that this lack of early engagement was also a concern for them. However, we note positively that there was a clear commitment from all parties to the work of the IDR network as a means of supporting IDR in the REF and as a source of advice and mutual support throughout the REF process.

Recommendations

97. Following the assessment phase and the evaluation of IDR assessment in REF 2021, IDAP will produce a final report on its work and findings across the REF period as a whole. This will give us the opportunity, based on our own observations and the panels' experiences, to review and build on our findings, and to develop further recommendations for future exercises. On this basis the recommendations below for future REF exercises should be seen to represent the interim findings of our work and experience to-date:

- Earlier appointment of IDR panel, for input into consultation and initial decisions
- Earlier engagement with main panel chairs following appointment. This will allow a period for building a common agreement of goals before the main and sub-panels start work on criteria development
- Briefing/induction process for IDR advisers and main panel members, to inform of background, expectations and opportunities for input and involvement
- Direct engagement with sub-panel members at an early stage in criteria development, to enable an open dialogue with panel representatives to test and inform assessment principles
- Ongoing engagement with panel members throughout criteria development, including meetings of the IDR network as forum for dialogue and information sharing.

Annex A: Terms of Reference

Interdisciplinary Research Advisory Panel (IDAP)

Background

1. The four UK higher education funding bodies are committed to supporting and promoting interdisciplinary research and breaking down perceived barriers to submitting interdisciplinary research to the Research Excellence Framework (REF).
2. Lord Stern's independent review of the REF in 2016 was mindful of the great potential of interdisciplinary research and commented on perceptions that interdisciplinary work was disadvantaged by the 2014 REF and perceived to be regarded less favourably than mono-disciplinary research. An analysis of outputs submitted to the 2014 REF¹⁵ also observed a lower proportion of the most interdisciplinary publications than has been observed for the UK as a whole.
3. HEFCE have significantly enhanced the evidence base around IDR since the outcomes of REF2014 and, combined with work others have commissioned, there is a strong foundation on which to build.

Aims of the panel

4. To ensure that REF 2021 supports the submission and fair assessment of interdisciplinary research, and that this is clearly demonstrated during the development and implementation of the exercise.

Terms of Reference

5. The REF Interdisciplinary research advisory panel (IDAP) has been established to provide advice to the REF team, REF panel chairs and the UK funding bodies on the development and implementation of the approach to interdisciplinary research in the REF and is intended to demonstrate the UK funding bodies' commitment to interdisciplinary research.
6. These terms of reference are intended to cover the criteria phase of the next exercise. IDAP will deliver the following objectives:
 - a. Provide advice to the HE Funding Bodies on the initial decisions for REF2021 following formal sector consultation in 2017.
 - b. Support the development of interdisciplinary aspects of any REF2021 pilot activity.
 - c. Provide advice and oversight on the assessment criteria with respect to IDR during the criteria setting phases of REF2021.

¹⁵http://www.hefce.ac.uk/media/HEFCE_2014/Content/Pubs/Independentresearch/2015/Review_of_the_UKs_interdisciplinary_research/2015_interdisca.pdf

7. IDAP will be invited to advise on the most appropriate arrangements for ensuring oversight, assessment and the provision of advice about IDR in the submission and assessment phases of REF 2021. At the end of the criteria phase, IDAP will be required to provide a report to summarise its work and provide any further advice to the sector

8. The chair (or deputy, where appropriate) of the IDAP will undertake an ambassadorial role to explain and promote the measures taken to support IDR in the REF in order to relieve any perceptions in the sector that interdisciplinary research is treated less favourably.

Working methods

9. The IDAP will include a maximum of 15 academic experts (UK or international) in the process or practice of, or delivery of impact arising from, IDR. The research expertise of the panel will cover the broad spectrum of disciplines

10. The panel will be required to meet as follows during the criteria phase:

- a. Two meetings in 2017; to input into the initial decisions and pilot activity.
- b. Two meetings in 2018; to inform the development of further REF guidance and criteria.

11. The panel will be subject to confidentiality arrangements and will be required to declare any conflicts of interest.

Annex B: Membership of the Interdisciplinary Advisory Panel (IDAP) REF 2021

Chair	Role
Professor Dame Athene Donald	Master of Churchill College Cambridge, University of Cambridge
Members	Role
Professor John Clarkson	Director, Cambridge Engineering Design Centre, University of Cambridge
Professor Bruce Brown	Visiting Professor, Royal College of Art
Professor Mark d'Inverno	Pro-Warden International, Goldsmiths, University of London
Professor Rick Delbridge	Dean of Research, Innovation and Engagement at Cardiff University, academic lead for the Social Science Research Park (SPARK), Cardiff University
Dr Tori Holmes	Lecturer in Brazilian Studies, Queen's University Belfast
Professor Hilary Lappin-Scott	Senior Pro Vice-Chancellor – Research and Innovation and Strategic Development, Swansea University
Professor Ursula Martin	Professor of Computer Science, University of Oxford
Professor Hugh Mckenna	Dean of Medical School Development, Ulster University
Dr Lisa Mooney	Pro Vice-Chancellor Research and Knowledge Exchange, University of East London
Professor Judith Phillips	Deputy Principal (Research), University of Stirling
Professor Barry Smith	Director of the Institute of Philosophy, School of Advanced Study
Professor Veronica Strang	Executive Director of Institute of Advanced Study, Durham University
Dr Sophie von Stumm	Associate Professor in Developmental Psychology, London School of Economics
Professor Joyce Tait	Director of the Innogen Institute, University of Edinburgh
Observers	Role
Professor Andrew Thompson	AHRC/UKRI
Professor Roger Kain	British Academy

Annex C: Published definitions of interdisciplinary research

Below are some examples of the different definitions of types of research which cross disciplinary boundaries. The table below is not exhaustive and is provided to support discussion by the group, it is not intended to be definitive.

Table 1 IDR and adopted definitions of multidisciplinary, interdisciplinary, transdisciplinary, and crossdisciplinary research¹⁶

IDR	Definition
Multidisciplinary	“Theory, methods, and interpretive standards of the different disciplines are employed. Interpretation of the results from different disciplines typically occurs post hoc, often from the perspective of one discipline that may emerge as dominant within the project.” (Rossini & Porter, 1979)
Interdisciplinary	“Approaches integrate separate disciplinary data, methods, tools, concepts, and theories in order to create a holistic view or common understanding of a complex issue, question, or problem” (Wagner et al., 2011, p. 16)
Transdisciplinary	“Trans-sector, problem-oriented research involving a wider range of stakeholders in society” (Klein, 2008, p. S117)
Crossdisciplinary	This term is often used to describe the three research modalities defined above.

¹⁶ <http://www.hefce.ac.uk/pubs/rereports/year/2016/interdis/>