



**EVALUATION OF THE ESRC/MRC
INTERDISCIPLINARY STUDENTSHIP AND
POSTDOCTORAL FELLOWSHIP SCHEME**

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IN CONFIDENCE

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1. EXECUTIVE SUMMARY

1.1 Summary of the investment

The ESRC/MRC Interdisciplinary Research Studentship and Postdoctoral Fellowship Scheme (the 'Scheme') was launched in 2004 with the principal aim of allowing awardholders to develop new research skills whilst tackling projects that are genuinely interdisciplinary in nature between the social and medical sciences. The PhD Studentships are for 4 years (on the 1+3 model). The postdoctoral fellowship is for 2 years, with the intent that fellows will: produce publications toward track record and improve opportunities for long term employment in academia; disseminate to academic and non-academic audiences; further improve research and related skills through specialised training; allow awardholders to carry out further limited research based on their PhD work and related work through developing proposals for further funding.

1.2 Evaluation methodology

The remit of this evaluation was to assess the Scheme against its main objectives and advise ESRC and MRC regarding possible evolution of the Scheme. Specifically, the objectives of the evaluation were to address: Capacity; Operation; Skills, Impacts and Outcomes; and Lessons learned and future development. In order to achieve a robust analysis we adopted both quantitative and qualitative methodologies, drawing on document/grey literature analysis, surveys, interviews and focus groups.

1.3 Capacity

The Scheme is **building capacity** by generating individuals of high calibre who are capable of continuing to undertake interdisciplinary research in areas of potential interest to both the Research Councils.

1.4 Operation

Generally, **operations** of the Scheme were seen as satisfactory, although guidance as to criteria such as genuine interdisciplinarity, increased communication with and between Councils and enhanced flexibility would represent improvements.

1.5 Skills, impacts and outcomes

Awardholders' published **outputs** appear to be – at least – of the same quality as those of their mono-disciplinary peers. Some prestigious fellowships and even academic posts have been secured as additional **outcomes**. Going beyond the touchstone of comparability in academic quality, these awardholders have often worked in innovative ways and have acquired individualised **portfolios of skills**, each drawing from at least two fields. Such attributes can contribute not only to interdisciplinary productivity in academic impacts but also to effective **knowledge exchange**.

1.6 Lessons learned and further development

Participants offered **lessons learned** as advice for future awardholders and supervisors/mentors, along with suggestions for **further development** of Research Councils' promotion of interdisciplinarity.

1.7 Management of the investment

There is potential to encourage still further this sort of interdisciplinary capacity-building and awardholders could benefit from a broader sense of community. Facilitating the growth of such a community could allow the Councils to capitalise on their investment by increasing the likelihood that interdisciplinary communication, work and innovation will continue. Thus the Scheme has definitely made a start at building interdisciplinary capacity; will it go further and help consolidate an interdisciplinary community?

Several other policy-level questions exist for Research Council deliberation, primarily concerned with concentration versus diversity of awards. Is the concentration of nearly a third of the awards in just two institutions the best way of creating long-term change in the academic landscape? Is the high concentration of awards in psychology appropriate and does the frequently identified bridge “across” academic and clinical psychology span a sufficient interdisciplinary “distance”?

1.8 Recommendations

Key recommendations

1. The availability of Research Council funding for those pursuing research excellence in interdisciplinarity is paramount. A central recommendation is thus to **continue the Scheme**, for both postgraduate and postdoctoral fellows. It clearly funds work (and individuals) that would not receive funding from either Council’s conventional streams.
2. If Research Councils genuinely wish to see interdisciplinary research as part of the UK’s academic landscape, a vital recommendation is to continue to **provide and expand funding opportunities and facilitate career paths** for interdisciplinary researchers, **ensuring that they are not disadvantaged by existing funding schemes**. Ability to access funding and recognised kudos such as postdoctoral fellowships are critical stages in the life course of interdisciplinary individuals, yet the general experience remains that interdisciplinary applications to schemes that are not specifically designated ‘interdisciplinary’ tend to suffer unless reviewers and assessment panels are given specific instructions as to the legitimacy of an interdisciplinary approach. This also requires the Research Councils to be more knowledgeable about the suitability of the reviewers they select to assess interdisciplinary proposals.
3. Because interdisciplinary research is inherently challenging, and Early Career Researchers (ECRs) are often somewhat alone in their interdisciplinary pursuits, Councils should **support and facilitate professionalisation processes such as community-building**, with opportunities to learn about and share issues regarding interdisciplinary research and related publication or career strategies, as well as to form life-long networks.

Detailed recommendations

4. Consider deliberately broadening the interpretation of “interdisciplinary” for this Scheme and pro-actively marketing the Scheme to a broader range of disciplines and sub-disciplines.
5. Consider conducting think tanks to identify additional problems, priority areas or challenges that could be served by ESRC/MRC interdisciplinarity and publicise these possibilities to inspire thinking among prospective applicants. (In addition to helping the Research Councils tackle important challenges, this could also help to broaden the range of high-calibre applicants from across institutions and disciplines, if that is a desired goal.)
6. Consider reverting, at least in part, to allowing individual students to drive some proposals and continue to provide mechanisms that allow student quality to be assessed (e.g. consideration of references). This joint package model (student, supervisor, problem, institutional context) would allow reviewers to seek balance across the components – in line with clear guidance given. Most genuinely interdisciplinary early career researchers are evidently self-driven; the Scheme would benefit by including opportunities for the passion and aptitude of such individuals to be considered.

7. Provide clearer guidance (to prospective applicants/supervisors/mentors, reviewers and assessment panellists) as to what is being sought, in terms of genuine interdisciplinarity, postdoctoral balances of writing and new research, etc.
8. Ensure that selection panels are keenly aware of, and behave consistently in accordance with, the particular interdisciplinary goals/requirements of this Scheme.
9. Make greater use of current/past supervisors and mentors who are comfortable with interdisciplinarity in assessment of proposals at various stages.
10. Provide guidance to supervisors and mentors related to the interdisciplinarity of their student/fellow. (This could, for example, consist of a short guidebook drawing on lessons learned captured by this evaluation or indeed the opportunity to attend a workshop for supervisors/mentors who seek additional guidance.) Include in this guidance for external examiners of interdisciplinary PhD theses.
11. Provide contact information on Scheme supervisors and mentors to facilitate interaction, placement of awardholders and selection of examiners.
12. Hold annual community-building Scheme conferences, bringing together postgraduate students and postdoctoral fellows across year-cohorts. Place explicit value on professionalisation processes for interdisciplinary individuals as similar to, but a bit different from, those through which mono-disciplinary individuals mature. In this vein, consider sending awardholders to even broader interdisciplinary events across multiple schemes or areas.
13. Communicate with awardholders so that they feel part of a distinctive community. Provide them with each others' contact details/ topics to facilitate networking.
14. In terms of operations, show flexibility when legitimate requests are made (e.g. field work, multiple conferences, language-learning, no-cost extensions); endeavour not to require Masters degrees that do not fit the individual's personal research goals.
15. Ensure that the Scheme retains both continuity and the opportunity to learn and evolve. Consider some 'out-of-the-box' thinking regarding the administration of cross-council interdisciplinary Schemes in general. For example, administration could be managed in a central way, perhaps by RCUK, with dedicated administrators experienced in the particular requirements of interdisciplinary research and research training. In light of trends toward multi-Council programmes such as Living with Environmental Change (LWEC) and Rural Economy and Land Use (RELU), RCUK might even consider (i) the establishment of an interdisciplinary reviewers' college (consisting of individuals expert in a range of interdisciplinary areas) to address the common challenge of finding reviewers who understand and are sympathetic to interdisciplinary research and (ii) facilitating the development of a wide cadre of interdisciplinary early career researchers by hosting community-building events across different interdisciplinary capacity-building schemes and programmes; there would also be scope for wider network development, including supervisors, mentors and external examiners. A first step might be the development of an Interdisciplinary Portal analogous to the current RCUK Knowledge Transfer Portal.

2. INTRODUCTION

Increasingly, complex challenges facing society are seen to require insights from multiple disciplines. Issues related to health and medical sciences, within the context of society, exemplify this need. The Economic and Social Research Council (ESRC) and the Medical Research Council (MRC) joined forces to tackle these challenges by fostering “next-generation researchers” who could develop distinctive interdisciplinary abilities and orientations. The ESRC/MRC Interdisciplinary Research Studentship and Postdoctoral Fellowship Scheme (the ‘Scheme’) was launched in 2004. Since then, 82 postgraduate studentships and 32 postdoctoral fellowships have been awarded at an annual investment of approximately £2.4M per year¹. The main objective of the Scheme is to allow applicants to develop new research skills whilst tackling projects that are genuinely interdisciplinary in nature. It is hoped that the Scheme will promote greater interaction between the social and medical sciences, and lead to the development of a body of professional social and medical scientists. The PhD Studentships are for up to 4 years (on the 1+3 model); the two-year postdoctoral fellowships are intended to: produce publications toward track record and improve opportunities for long term employment in academia; disseminate to academic and non-academic audiences; further improve research and related skills through specialised training; allow awardholders to carry out further limited research based on their PhD work and related work through developing proposals for further funding².

The goal of this evaluation was to assess the Scheme against its main objectives and advise ESRC and MRC regarding possible evolution of the Scheme. Specifically, the objectives of the Evaluation were to address the four areas of:

- **Capacity** (e.g. numbers, disciplines benefiting, degree of interdisciplinarity fostered)
- **Operation** (e.g. attraction and requirements, timing, genuineness of interdisciplinarity, medical vs. social background of students, presence/nature of institutional support, quality of supervision and capacity of supervisors, distribution of awards across HEIs relative to distribution of expertise)
- **Skills, Impacts and Outcomes** (e.g. development of innovative approaches and methods, utilisation of other training and development opportunities, standard and degree of interdisciplinarity of publications and papers, degree of user engagement during or after award, professional destinations, suitability and type of employment, retention in UK, continuation of interdisciplinary research, comparison of skills/impact/outcomes with studentship competition awardees)
- **Lessons learned and future development** (e.g. identifiable strengths and weaknesses, possible developments and improvements of the Scheme, benefits and problems encountered by researchers in this sort of interdisciplinary research, any generic lessons useful for this or other interdisciplinary studentship schemes).

Our approach to evaluations is that they should be helpful in the future, extending beyond a summative capturing of past outcomes or impacts. In a sense, this evaluation is “formative” as it is an opportunity to capture insights and offer recommendations that can inform the future of this scheme or other cross-council interdisciplinary capacity-building schemes. We have triangulated our analysis across

¹ Figures provided by ESRC Evaluation Brief. See Annex K for list of awardholders.

² Interdisciplinary research is not excluded from other awards supported by the Research Councils such as, for example, the ESRC studentships and postdoctoral fellowships (see www.esrc.ac.uk/ESRCInfoCentre/opportunities) but these schemes do not have a specific emphasis on interdisciplinarity.

diverse perspectives and through diverse methodologies. Previous involvement in fostering and analysing interdisciplinary capacity has given us a well-informed respect for the challenges and potential of interdisciplinarity, so that we feel confident that we have captured the detailed evidence necessary to assess performance and inform future development of the Scheme.

3. SUMMARY OF REVIEW PROCESS

3.1 Framework of core questions and integrative analysis

In order to provide a synthesising intellectual structure for the evaluation we first designed a Framework of Core Questions to cover the full scope of this study, identifying one or more methods to address each Core Question. The invitation to tender offered a comprehensive set of questions which we used as the basis for this Framework. In addition, we added some questions or nuances that allowed us to explore further some of those dimensions that we know to be particularly important, for example we also considered insights from some similar schemes such as the ESRC/NERC Interdisciplinary PhD Scheme which we evaluated in 2005, in our evaluation design. We were also aided in this respect by consultation with ESRC staff during the Inception Interview. The Framework of Core Questions is included in **Annex A**.

Table 1 sets out the evaluation objectives and assessment criteria and identifies the main method of assessment used in each case. Findings derived from each method were analysed individually then integrated across methods to address the key objectives of the evaluation.

Table 1: Integrative analysis

Evaluation objectives	Key assessment criteria	Main methods of assessment
Capacity	<ul style="list-style-type: none"> • numbers • disciplines benefiting • degree of interdisciplinarity fostered 	Document analysis Surveys
Operation	<ul style="list-style-type: none"> • attraction and requirements • timing • genuineness of interdisciplinarity • medical vs. social background of students • presence/nature of institutional support • quality of supervision and capacity of supervisors • distribution of awards across HEIs relative to distribution of expertise 	Document analysis Surveys
Skills, Impacts and Outcomes	<ul style="list-style-type: none"> • development of innovative approaches and methods • utilisation of other training and development opportunities • standard and degree of interdisciplinarity of publications and papers • degree of user engagement during or after award • professional destinations • suitability and type of employment • retention in UK • continuation of interdisciplinary research • comparison of skills/impact/outcomes with studentship competition awardees 	Surveys Interviews
Lessons learned and future development	<ul style="list-style-type: none"> • identifiable strengths and weaknesses • possible developments and improvements of the scheme • benefits and problems encountered by researchers in this sort of ID research • any generic lessons useful for interdisciplinary studentship schemes in other areas 	Surveys Interviews Focus groups

3.2 Document/grey literature analysis

Using documentation provided by the Research Councils³ we constructed an awards database for the Scheme. We used this database to identify survey and interview contacts and to analyse award distribution. We also analysed the documentation to

³ ESRC provided copies of all successful proposals, award letters (for 2004-2008) and papers from 2004, 2005, 2006 Panel meetings.

provide insights into the assessment process and any related issues that this raised. The evaluation design and final analysis were informed by the following documents:

- the Higher Education Academy's Postgraduate Research Experience Survey⁴
- the evaluation of the US Integrated Graduate Education and Research Training (IGERT) scheme as an international comparator⁵
- a study commissioned by ESRC on international, ID capacity-building⁶
- our own evaluation of the ESRC/NERC ID PhD Studentship Scheme⁷
- Meagher's evaluation of the ESRC Postdoctoral Fellowship Scheme⁸

3.3 Surveys

Surveys allow a breadth of input and make it possible to quantify responses. We designed two surveys using Survey Monkey's online system⁹, one for awardholders and the other for supervisors and mentors. Questions were matched where possible across the two surveys and comprised a mix of Lickert scale, pre-coded and free text response modes based on the Framework of Core Questions (see **Annexes B and C** for survey instruments).

The database yielded 128 awardholder contact emails¹⁰ and 258 supervisor/mentor contact emails. Surveys were distributed electronically on 12 May 2009, two reminders were sent and the data collection was closed on 17 June.

Of the **awardholder** surveys sent, 118 reached 'live' addresses¹¹ and we received 90 completed replies giving us a **response rate of 76%**.

Of the **supervisor/mentor** surveys sent, 218 reached 'live' addresses and we received 142 completed replies giving us a **response rate of 65%**.

Of the 90 awardholders who responded, 63 (70%) had been awarded a PhD studentship and 26 (29%) had been awarded a postdoctoral fellowship. One respondent had been awarded both a studentship and a fellowship. Of these respondents, one third had completed their award and two-thirds were still in post.

We received 142 completed surveys from people who had acted as supervisors and mentors on this Scheme. Of these:

- 99 (72%) had supervised one or more ESRC-MRC funded PhD students
- 31 (22%) had mentored one or more ESRC-MRC funded postdoctoral fellows
- 8 (6%) had acted in both roles¹²

⁴ Higher Education Academy. 2007. *Final Report Postgraduate Research Experience Survey*.

⁵ Abt Associates Inc. 2006. *Evaluation of the Initial Impacts of the National Science Foundation's Integrative Graduate Education and Research Traineeship Program*. Final Report. Prepared for NSF.

⁶ Technopolis group. 2008. *Approaches to interdisciplinary capacity-building – a scoping study*. Internal document, in confidence.

⁷ Meagher L.R. & Lyall C. (2005) *Evaluation of the ESRC/NERC Interdisciplinary Research Studentship Scheme*. Report to ESRC.

⁸ Meagher, L.R. (2004) *Evaluation of the ESRC Postdoctoral Fellowship Scheme*. Report to ESRC www.esrcsocietytoday.ac.uk/ESRCInfoCentre/Support/Evaluation/publications/

⁹ www.surveymonkey.com

¹⁰ As this number is higher than the figure of 114 awards quoted by ESRC the assumption is that the application forms provided included a number of individuals who either did not take up the award or who deferred until after 2008.

¹¹ Some of the failed messages were due to email addresses having changed since the application was made or because recipients opted out of completing the survey.

¹² Four skipped the question.

Between them they had supervised 127 PhD students and mentored 46 postdoctoral research fellows on this Scheme.

Results from these two surveys are included in [Annexes D and E](#).

3.4 Semi-structured interviews

An interview topic guide was prepared drawing upon the Framework of Core Questions which provided structure for the interviews, while still allowing flexibility to explore in-depth areas on which interviewees had more to say (see [Annex F](#) for topic guide). Key points were transcribed and coded so that interviewees' responses could be analysed for commonalities, differences and patterns. Interviews (detailed in [Table 2](#)) were mainly conducted by telephone and lasted typically 45 minutes¹³.

Table 2: Distribution of interviews

	Category of interviewee ¹⁴
Individuals with overview perspectives, e.g. Council staff, ESRC Training & Development Board, ESRC/MRC Competition Panel	4
Current/former ESRC/MRC postgraduates (incl. focus group)	10
Current/former postgrads through ESRC open studentship competition (focus group)	5
Current/former ESRC/MRC postdoctoral fellows	5
Supervisors of ESRC/MRC postgraduates/Mentors, Fellows	12
Academic Managers, e.g. Dept/Centre Heads, four also supervisors	6
Total	42 (38 individuals)

3.5 Focus groups

Two focus groups were conducted for this study. The first was a "Unit focus group" at Durham University which has received both ESRC/MRC Studentships and other ESRC studentships. By including both types of students, this focus group allowed us to investigate what (if anything) participation in the explicitly interdisciplinary scheme provides to students. The Unit focus group was held on Tuesday 23 June and was attended by seven PhD students and one postdoctoral researcher who had recently finished a PhD. These were all drawn from the departments of anthropology, psychology and applied social sciences and included three Scheme awardholders (or past awardholders) and five holders of ESRC open competition awards (including one CASE student). The agenda for the discussion is included in [Annex G](#).

A second "Future Recommendations focus group" was held towards the end of the project to which we invited eight selected senior academics/academic managers who had shown themselves in survey or interview to be reflective and who would offer useful perspectives on, in particular, recommendations to the Research Councils as to the future nature of this and other interdisciplinary capacity-building schemes. The meeting took place at the offices of the MRC on 18 September 2009. The agenda was based, in large part, upon big-picture issues emerging during the evaluation, while also testing the conclusions and recommendations of this report which the group found to be valid, while offering a few suggestions as to clarification (see [Annex H](#)).

¹³ Some face-to-face interviews were also conducted during our visit to Durham University.

¹⁴ Some interviewees spanned more than one category.

4. ANALYSIS ACCORDING TO EVALUATION CRITERIA

4.1 Capacity

Has the Scheme significantly increased the numbers of researchers who are able to work effectively in both the social and medical sciences?¹⁵

The majority of survey respondents felt that, either to some extent or to a great extent, the Scheme had given awardholders the skills to work in a specific area that bridges the medical and social sciences or the skills to work in either the medical or social sciences but with a broader perspective.

It was generally agreed that the Scheme had been successful in fostering interdisciplinarity, not just in all of the awardholders who responded to the survey but also, to varying degrees, in others around them in their departments (**Table 3**). Nearly half (45%) of the responding supervisors and mentors felt that to the Scheme had fostered their own interdisciplinarity to a great extent, with nearly all the others (53%) feeling this had happened to some extent. Fifty-five percent of awardholders reported that they had developed other interdisciplinary collaborations as a result of the Scheme.

Table 3: Spillover effects to others in awardholders' departments, comparing awardholder (A) and supervisor/mentor (S/M) responses

To what extent has the Scheme been successful in fostering interdisciplinarity in the following people?	To a great extent		To some extent		Not at all	
	A	S/M	A	S/M	A	S/M
In the award holder	68%	70%	32%	29%	0%	2%
In the supervisors/mentors	32%	45%	62%	53%	6%	2%
Among other ECRs (in your department/centre or across your institution)	8%	10%	56%	60%	36%	30%
Among other academic staff (in your department/centre or across your institution)	8%	7%	51%	64%	41%	29%

Which academic disciplines have benefited and how far has the Scheme been successful in fostering interdisciplinarity between these social and medical science disciplines?

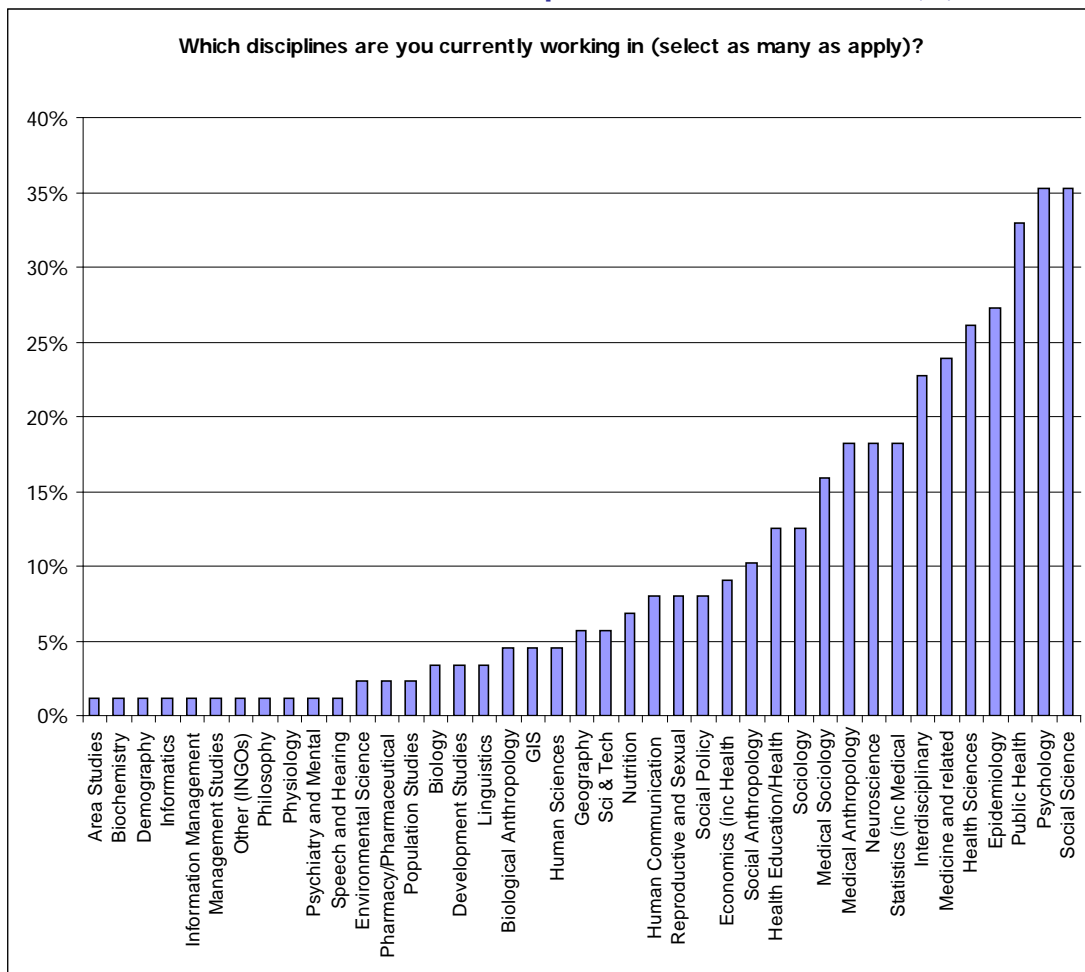
Chart 1 illustrates the range of 41 disciplines in which **awardholders** indicated they were currently working. Respondents were asked to select all disciplines that applied;

¹⁵ This analysis follows the format of the questions set out in the Evaluation Brief.

the 88 awardholders who replied to this question gave a total of 355 disciplines (an average of four disciplines per respondent)¹⁶.

We then analysed responses from only studentship awardholders and identified 33 separate disciplines represented in this set; this compares with 53 disciplines when we surveyed ESRC-NERC studentship holders in our 2005 evaluation¹⁷. As a further comparison with this previous analysis where we judged that 51% of ESRC-NERC students had cited disciplines in the natural sciences and 42% the social sciences¹⁸, the equivalent figures for this scheme were 50% medical/natural sciences and 37% social sciences¹⁹.

Chart 1: Which academic disciplines have benefited (A)?



¹⁶ Analysis of application forms suggests that, in addition to the 41 disciplines identified by survey respondents, the Scheme has also drawn awardholders from backgrounds in seven further subjects: bioinformatics; English language/literature; environmental design; media studies; modern languages; occupational therapy; political science.

¹⁷ Meagher and Lyall (2005).

¹⁸ Remaining 7% had cited geography which we found hard to categorise as it spans physical and social geography.

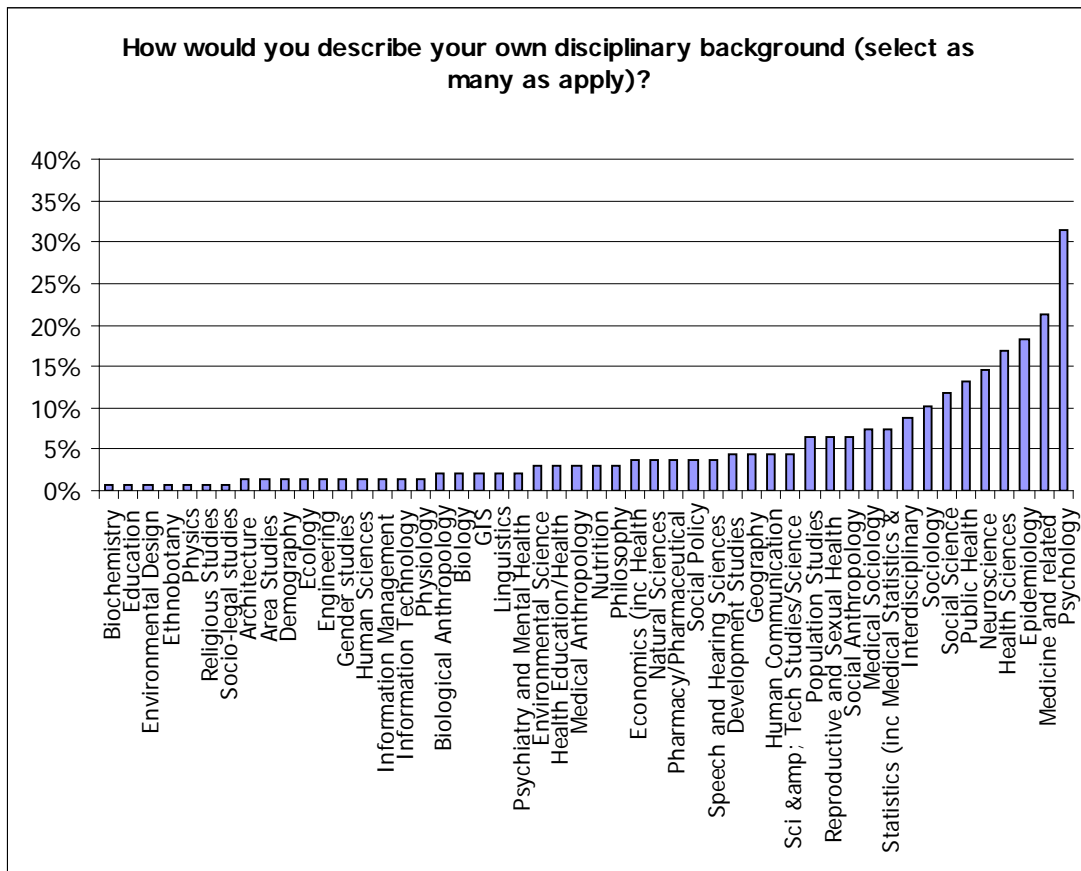
¹⁹ 7% cited 'interdisciplinary' and 6% psychology which we again found difficult to categorise as it spans both social and clinical aspects.

Chart 2 illustrates the range of disciplines in which **supervisors/mentors** indicated they were currently working. Respondents were asked to select all disciplines that applied; the 137 awardholders who replied to this question gave a total of 358 disciplines (lower than the awardholders at an average of 2.6 disciplines per respondent).

Tables 4 lists the ten most popular disciplines for each category of respondent.

In order to gauge the ‘disciplinary reach’ of the Scheme, for the seven disciplines²⁰ that were cited by 20 or more awardholders, **Table 5** shows, for these most popular disciplines, the top five other disciplines with which they are most commonly affiliated (see **Annex I** for full analysis).

Chart 2: Which academic disciplines have benefited (S/M)?



²⁰ Epidemiology, health sciences, interdisciplinary, medicine and related, psychology, public health and social science.

Table 4: Top 10 disciplines

	Awardholders	Supervisors/mentors
Psychology	35%	31%
Social Science	35%	12%
Public Health	33%	13%
Epidemiology	27%	18%
Health Sciences	26%	17%
Medicine and related	24%	21%
Interdisciplinary	23%	9%
Medical Anthropology	18%	
Neuroscience	18%	15%
Statistics (inc Medical Statistics)	18%	7%
Sociology		10%
Medical Sociology		7%

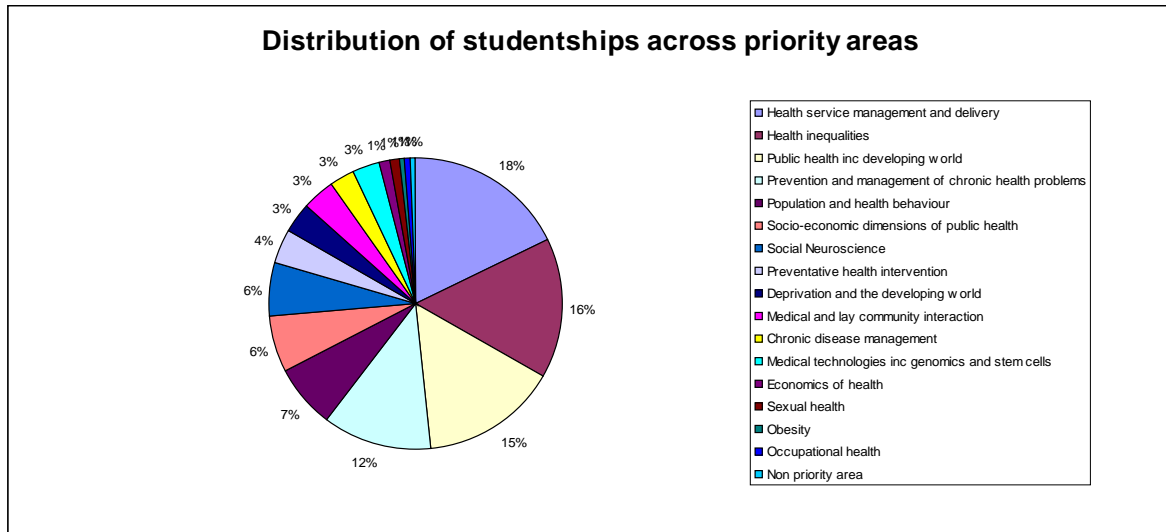
Table 5: Disciplinary spread:

Discipline	Total no. of other associated disciplines	Top five other disciplines with which this discipline most commonly affiliated (no. of occurrences)					
Epidemiology	25	Public Health (15)	Social Science (10)	Statistics (10)	Health Sciences (8)	ID (7)	
Health sciences	28	Social Science (10)	ID (9)	Public Health (9)	Epidemiol. (8)	Medical Anthropol. (7)	
ID	27	Health Sciences (9)	Social Science (9)	Epidemiol. (7)	Medicine (6)	Public Health (5)	
Medicine	27	Psychol. (8)	Public Health (7)	ID (6)	Social Science (6)	Statistics (5)	
Psychology	21	Epidemiol. (15)	Health Sciences (9)	Psychol. (9)	Social Science (9)	Statistics (9)	
Public health	29	Neurosci (14)	Social Science (10)	Public Health (9)	Medicine (8)	Epidemiol. (7)	
Social science	30	Epidemiol. (10)	Health Sciences (10)	Psychol. (10)	ID (9)	Medicine (9)	Public Health (9)

Studentship application forms asked the applicant to indicate into which priority area(s) their proposed research fell; these categories changed slightly during the period 2004-2008 but the majority of studentships went to the following areas (see **Chart 3** for full distribution):

- health service management and delivery (18%)
- health inequalities (16%)
- public health including developing world (15%)
- prevention and management of chronic health problems (12%)

Chart 3: Distribution of studentships across priority areas

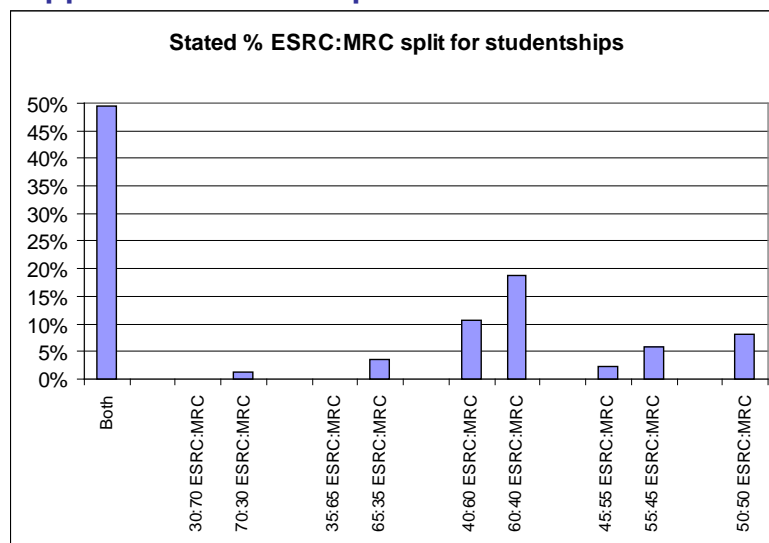


Applicants for the studentship were asked to state how their proposed research was split between the ESRC and MRC remits. The largest group (49%) responded 'Both', the next largest group (19%) stated that it was a 60:40 split between ESRC and MRC; **Table 6** and **Chart 4** illustrate the spread of responses²¹.

Table 6: Distribution of applications across Research Councils and priority areas²²

	No. of Applicants	50/50	ESRC weight	MRC weight	Applications in priority areas
2004	104 (52PG)	58%	29%	13%	71%
2005	142 (90PG)	60%	29%	11%	89%
2006	132 (77PG)	48%	43%	9%	No info

Chart 4: Applicant selected split of research across RC remits



²¹ It is perhaps confusing to applicants to give them the option of 'both' as well as a % breakdown. The latter on its own might be preferable.

²² Based on analysis of assessment documents.

The 2004 Panel papers noted that referees had reported difficulty in assessing how interdisciplinary bids were and this has been a recurring theme in the panel papers made available to us. It is clear that the question of whether the application was genuinely interdisciplinary caused the most contention in assessments. There have been calls for a more detailed specification of what an interdisciplinary application would look like, noting that this goes beyond simply having a medical and social science supervisor. Panels have recommended on several occasions that there should be a separate section on interdisciplinarity on the referee grading form with a list of criteria that the application must satisfy, as well as calls for the grading forms and guidance for both assessors and referees to reflect the emphasis the Scheme places on interdisciplinarity with more available marks for this, so that the overall score is a true indication of the quality of the application.

Although the 2006 papers state “detailed information relating to what is meant by interdisciplinarity should be put onto the webpage for 2007”, subsequent web-based guidance suggests a lack of consistency of message. The most recent MRC guidance for Scheme postdocs, in particular, does not give a great deal of explanatory guidance or indeed emphasis on interdisciplinarity. One might infer from current guidance that the Scheme has been mainstreamed into regular MRC fellowships²³.

A consistent message about the importance of interdisciplinarity is imperative to the success of this scheme. A corollary of this is the importance of consistency of administrative procedures; there is a risk of this not being achieved when responsibility for the Scheme switches between research councils on a regular basis.

What impact has the Scheme had on the future of social/medical research – is an interdisciplinary community developing?

The majority of awardholders (65%) expressed the view that the Scheme has contributed to the development of an interdisciplinary community that will have an impact on future research across the social and medical sciences (29% neutral). Nearly half (46%) felt that a new discipline or sub-discipline is evolving in the interdisciplinary area tackled by their project (35% neutral).

Supervisors/mentors held similar views: 76% felt that the Scheme has contributed to the development of an interdisciplinary community that will have an impact on future research across the social and medical sciences (19% neutral). Slightly fewer (33%) felt that a new discipline or sub-discipline was evolving²⁴.

Just over two thirds of awardholders responding to the survey said they had experience of working in an interdisciplinary way before they gained their award.

Reasons given by awardholders for applying to this Scheme (**Table 7**) and their motivations for undertaking interdisciplinary research might shed some light on the impact of these types of schemes.

²³ The management of the Scheme competition is rotated between Councils every three years. However, all of the grants under the scheme are issued and managed by ESRC within standard studentship terms and conditions.

²⁴ 31% neutral; 36% disagree/strongly disagree.

Table 7: Reason for applying to this Scheme

Committed to pursuing interdisciplinary research	81%
Hoped that award would provide greater access to training and/or networks in interdisciplinarity	38%
Felt that it would provide better career prospects	33%
Thought proposal wouldn't be successful in discipline-based open competition	24%

Of the 17 awardholders who gave other reasons for applying to this Scheme, some mentioned the higher stipend and the fact that the postdoc offered two years rather than only one which is the norm with ESRC. Several mentioned that it was the 'best fit' for the type of work that they wanted to do and a couple said that it was their only option because of eligibility criteria²⁵.

Almost half (43%) of awardholders surveyed expressed a desire to pursue problems with social, technical or policy relevance in the "real world" and an excitement over a particular research issue that required an interdisciplinary approach. Other motivations for undertaking interdisciplinary research included the expectation that it would provide greater career opportunities and the opportunity to bring together the awardholder's past studies and training with current areas of interest.

Almost equal numbers of awardholders told us that they viewed themselves as a member of an interdisciplinary community (47%) or that they viewed themselves as a member of both an interdisciplinary community and a single discipline (44%). Only 9% felt that their primary affiliation was with a single discipline's community.

Results were very similar for supervisors/mentors: 46% viewed themselves as a member of an interdisciplinary community; 49% viewed themselves as a member of both an interdisciplinary community and a single discipline; only 6% felt that their primary affiliation was with a single discipline's community.

A small majority of supervisors/mentors agreed that the award had acted as a catalyst to embed interdisciplinary research within their institution more broadly²⁶. Almost half of supervisors/mentors (47%) had published with their co-supervisors/co-mentors as a result of the work funded by the Scheme and 62% of them had continued other interdisciplinary collaborations as a result of this Scheme.

Summary of findings: Capacity

The Scheme is developing researchers who are able to work effectively in both the social and medical sciences and has been effective at fostering interdisciplinarity, not just in awardholders, but in others in their departments. Our analysis has identified a wide range of academic disciplines (across the social, natural and medical sciences) brought together by the Scheme and our findings (reported in more detail in Section 4.4) confirm that the Scheme has succeeded in fostering interdisciplinarity between these social and medical science disciplines. While we have identified benefits in

²⁵ Either their department did not have ESRC status but the student did or the MRC did not offer funding suitable to the candidate's career stage.

²⁶ 55% agree/strongly agree; 26% neutral; 19% disagree/strongly disagree.

terms of the awards leading to further interdisciplinary collaborations (e.g. between supervisors/mentors), awardholders would benefit from a greater sense of community as discussed in more detail in Section 4.4.

4.2 Operation

Does the Scheme attract suitably qualified students and early career researchers?

Awardholders told us that they felt suitably qualified and ready for the challenge of an interdisciplinary research project or PhD and this was supported by supervisors/mentors²⁷.

Does the timing of the application process impact on the quality of students/researchers attracted to the scheme?

Document analysis shows that the timing of the process has been discussed by the Scheme's Panel and Council staff on a number of occasions since the timetable is rather later than usual for MRC awards. Concerns had been expressed by panel members that too early a deadline could reduce the number of applicants. However, most awardholders were neutral or disagreed²⁸ in response to the statement "The timing of the application process in relation to other Research Council deadlines negatively affects the Scheme's ability to attract suitable candidates". No strong views emerged from survey responses from supervisors/mentors either²⁹.

To what extent are students/researchers tackling projects that are genuinely interdisciplinary in nature?

A clear majority of awardholders believe that their research was genuinely interdisciplinary with more than one discipline truly integrated into the project³⁰; this was reinforced by supervisors/mentors³¹.

In notes of Panel deliberations on short-listed proposals, genuine interdisciplinarity of a bid was sometimes noted explicitly as a positive and lack of interdisciplinarity was sometimes noted explicitly as a negative leading toward a rejection. More systemically, in 2004, 2005 and 2006 (for which Panel documents were provided), the Panel recommended that definitions of interdisciplinarity be crafted and provided as useful to applicants, reviewers and Panel members. For example, in 2005 a message sent was: "The Panel agreed that the question of whether the application was genuinely interdisciplinary caused the most contention in the assessments. The guidance notes should define what is meant by interdisciplinary and applicants should be provided with examples. The Panel recommended that there should be a separate section on interdisciplinarity on the referee grading form with a list of criteria that the application must satisfy." While in 2006 some clarifying language had been developed, the Panel continued to emphasise this point, noting for example that "The grading forms and guidance for both assessors and referees should reflect the emphasis the scheme places on interdisciplinarity. There should be more available marks for this, so that the overall score is a true indication of the quality of the application."... "It would also be beneficial to provide applicants with guidance as to how their applications will be graded. This should ensure that applicants focus clearly on areas specific to the

²⁷ 93% of both awardholders and supervisors/mentors strongly agree/agree.

²⁸ 52% neutral; 35% disagree; 3% strongly disagree.

²⁹ 63% neutral; 13% agree/strongly agree; 23% disagree.

³⁰ 49% strongly agree; 43% agree.

³¹ 44% strongly agree; 44% agree; only 4% disagree/strongly disagree

scheme, such as interdisciplinarity.” The expectation was that detailed information on what is meant by interdisciplinarity would be put on the web for 2007.

Do students/researchers come from a mainly social or medical science background?

An analysis of all applicants by first degree shows that the clear majority of both studentships and fellowships are awarded to individuals with a first degree in psychology (nearly one-third of studentships and just over half of all postdocs) (**Table 8** and **Charts 5** and **6**).

Table 8: First degrees of awardholders

	Studentships	Fellowships
Anthropology	4%	
Architecture Engineering	1%	
Area studies	1%	
Biochemistry	3%	3%
Biology	2%	6%
Biological anthropology	0%	3%
Development Studies	1%	
Economics	7%	
Engineering	0%	3%
English literature	2%	3%
Environmental Science	3%	
Geography	7%	
Genetics	0%	3%
Health Sciences	1%	6%
Human sciences	8%	
Languages	2%	
Linguistics	1%	3%
Management Studies & IT	3%	
Media studies	1%	
Medicine	3%	
Natural Sciences	2%	
Neuroscience	1%	
Occupational therapy	1%	
Pharmacy inc pharm chem	2%	6%
Physiology	1%	
Population studies	1%	
Psychology ³²	31%	54%
Social science	4%	9%
Speech sciences	1%	3%
Theology	1%	

³² Psychology encompasses both/either social or clinical aspects.

Chart 5: First degree of studentship holders

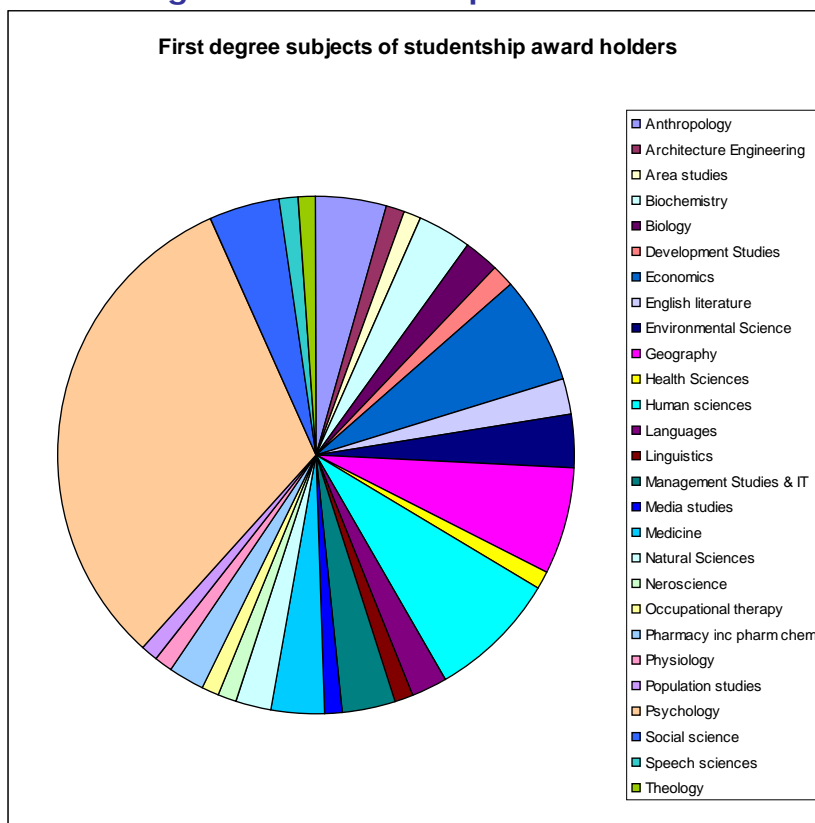
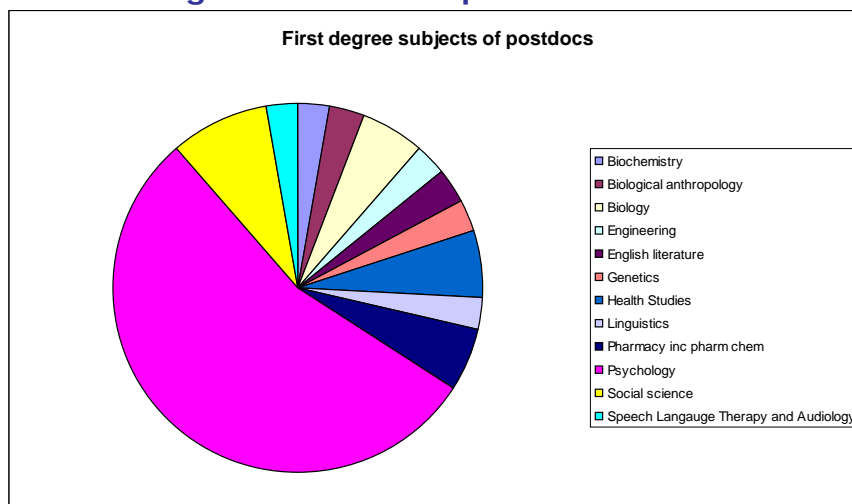


Chart 6: First degree of fellowship holders



Awards are made predominantly to women: 80% of studentships awarded went to female applicants and 84% of postdoctoral fellowships. We have for the most part only had access to application details of successful applicants so we do not know how these figures compare with the numbers of males and females applying to the Scheme³³. According to data provided by ESRC for the period 2005-2008, 59% of their open competition studentships were awarded to females and 41% to males. Of the

³³ In Panel documents provided for the first three years of the Scheme, the percentage of females in applications were (2004) 71% PG, 63%PD; (2005) 77%PG, 79%PD; (2006) 79%PG, 73%PD.

studentships, we identified 26 as 1+3 awards and 60 as +3 and all but two were for full-time study³⁴.

What institutional support is available and is it sufficient?

We asked awardholders to tell us what mechanisms were most effective for fostering interdisciplinarity within early career researchers (ECRs). Their answers included:

- informal seminars in which academics and ECRs from different disciplines are deliberately brought together
- problem or issue based workshops/conferences/think tanks, convening individuals from different disciplines
- regular meeting of supervisory/mentoring team with award holder
- participation in national, interdisciplinary conferences
- participation in international, interdisciplinary conferences

Other effective support mechanisms that they identified included working with experts in both disciplines and formal seminars where people from different disciplinary backgrounds offer a 'whistle stop tour' of their discipline and suggest how they would address a particular research question from their specific disciplinary background

We asked the same question of supervisors/mentors. They also identified informal seminars; problem or issue based workshops etc; and regular meetings of the supervisory/mentoring team with awardholder but did not rate conference participation as highly. They did, however, include co-location of ECRs from different disciplines (e.g. in labs, field sites and/or offices) as an effective mechanism for fostering interdisciplinarity. Other effective support mechanisms that they identified included greater availability of funding mechanisms for projects, meetings, fellowships and studentships for conducting and developing interdisciplinary research work. Another respondent noted that:

“genuine 'inter-disciplinary' working has only come from long term collaboration with colleagues from other disciplines on programmes of work. This requires rather more in the way of core funding than we usually have access to”

Since extremely few comments were made about institutional support per se in either interviews or survey free text, it would appear that universities are, by and large, providing sufficient support for awardholders.

Has it been easy for students to find a supervisor with the appropriate knowledge and experience? What additional support/training is available for supervisors?

The majority of awardholders (84%) agreed that it was easy to find a supervisor/mentor with the appropriate knowledge and experience³⁵. A minority (13%) had encountered difficulties with the supervisory/mentoring arrangements. Probably unsurprisingly, 79% of supervisors/mentors did not believe that the awardholder had encountered any difficulties with supervision³⁶.

There was, however, a spread of opinion (**Chart 7**) as to whether the awardholder would have benefited from their supervisor/mentor receiving some training or

³⁴ Note that not all applicants stated duration or whether f/t or p/t on their application forms.

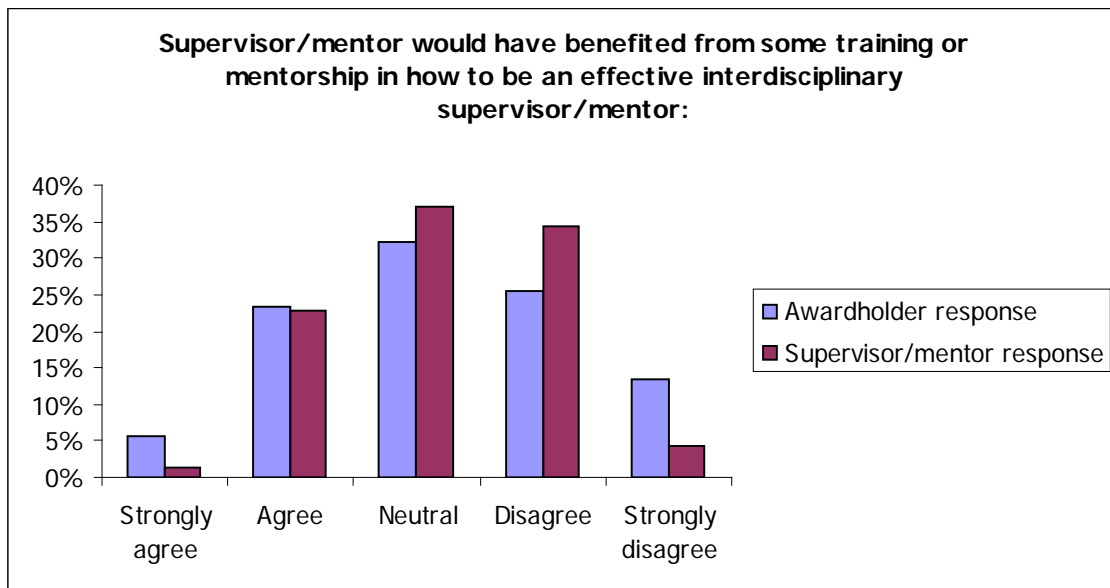
³⁵ 8% neutral; 7% disagree; 1% strongly disagree.

³⁶ 12% neutral; 9% agreed/strongly agreed.

mentorship in how to be an effective interdisciplinary supervisor/mentor: just over one-quarter of awardholders expressed the view that some training was needed. Almost a quarter of the supervisors/mentors themselves agreed that they would have benefited from some training or mentorship in how to be an effective supervisor/mentor for an interdisciplinary ECR³⁷. Around one-fifth of supervisors and mentors said that they were not working in a well-established interdisciplinary centre or collaboration at the time that they took on their mentoring/supervisory role³⁸. While the majority of supervisors/mentors are unlikely to seek actively any “training” in interdisciplinarity, it appears that some (the data indicate of the order of 25%) might see themselves as benefiting. If the Research Councils provided an appropriate masterclass and/or short guidance note for supervisors/mentors new to supporting interdisciplinary postgraduates/postdoctoral fellows, it might gradually encourage others to participate and improve their professional practice, even though they currently disavow any need for help.

It was suggested that the difference between supervision and mentoring should be clarified for mentors and that supervisors/mentors might benefit from some training/guidance on how to help steer their awardholders into productive interdisciplinary career paths.

Chart 7: Support for supervisors



What is the distribution of awards across HEIs and is this appropriate in relation to the spread of expertise in social/medical science

Charts 8-12 analyse the distribution of studentships and fellowships across HEIs and across departments. There are clear peaks in award distribution (19% UCL, just over 13% LSHTM, **Chart 12**). The London School of Hygiene and Tropical Medicine (LSHTM), a specialist institution, was among the highest ranked for its RAE submissions in Epidemiology and Public Health, and in Health Services Research, with “the largest concentration of world-leading research in the UK”³⁹. The large university, University College London (UCL), provides a similar level of excellence, with 70% of its

³⁷ 37% neutral; 34% disagreed; 4% strongly disagreed.

³⁸ 81% said they were working in this type of environment.

³⁹ “London School of Hygiene ranked in top 3 in Times Higher’s Research Assessment Exercise league table”. www.lshtm.ac.uk/news/2008/raeresults.html

Hospital-Based Clinical Subjects submission rated 3* or 4* and 75% of its Psychology submission rated 3* or 4*.⁴⁰ In the *Times Higher Table of Excellence* (as just one indicative listing), LSHTM as a specialist institution was ranked 3rd and UCL 7th, with the only other institution receiving over 5% of the Awards coming in tied for 14th place (Durham University, with about 7% of the total Scheme awards). Other than the University of Manchester (tied for 14th place) which had just over 4% of the Scheme awards, all the rest received fewer than 4%⁴¹.

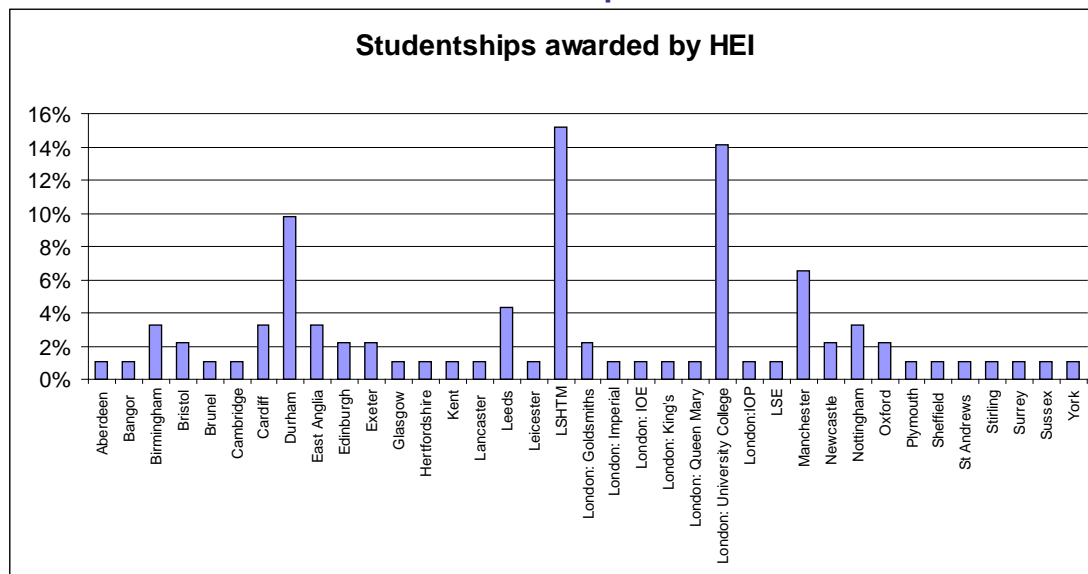
Certainly, awards are going to strong institutions. There might be a policy question in terms of concentration of awards, however, since only two institutions receive in total nearly a third of all the awards and the next two receiving just over a tenth. This leaves only just over half (57%) of the awards split among 36 institutions.

This issue was not anticipated in the specification for the evaluation and was not therefore factored in to the research design. Some preliminary data analysis which was requested at the end of our study suggests that there may be some differences experienced by Scheme awardholders in UCL/LSHTM as compared with their counterparts at other universities but time did not allow us to explore these issues in more depth through follow-up interviews. Our data indicate that:

- more UCL/LSHTM awardholders had experience of interdisciplinary working before the award (81% vs. 61%)
- more UCL/LSHTM awardholders felt they belonged to an interdisciplinary community (68% vs. 36%)
- more of the other (non UCL/LSHTM) awardholders felt they belonged to *both* an interdisciplinary community *and* a single discipline community (53% vs. 29%)
- a greater percentage of UCL/LSHTM awardholders had published with their supervisor/mentor (61% vs. 40%)

The Research Councils would doubtless want to weigh many factors into what is inherently a policy decision on this matter.

Chart 8: Distribution of studentships across HEIs



⁴⁰ "Research Assessment Exercise". www.ucl.ac.uk/silva/research/rae-2008

⁴¹ Link to RAE 2008 The ResultsTable in Excel, www.timeshighereducation.co.uk/story.asp?storycode=404786

Chart 9: Distribution of studentships across departments

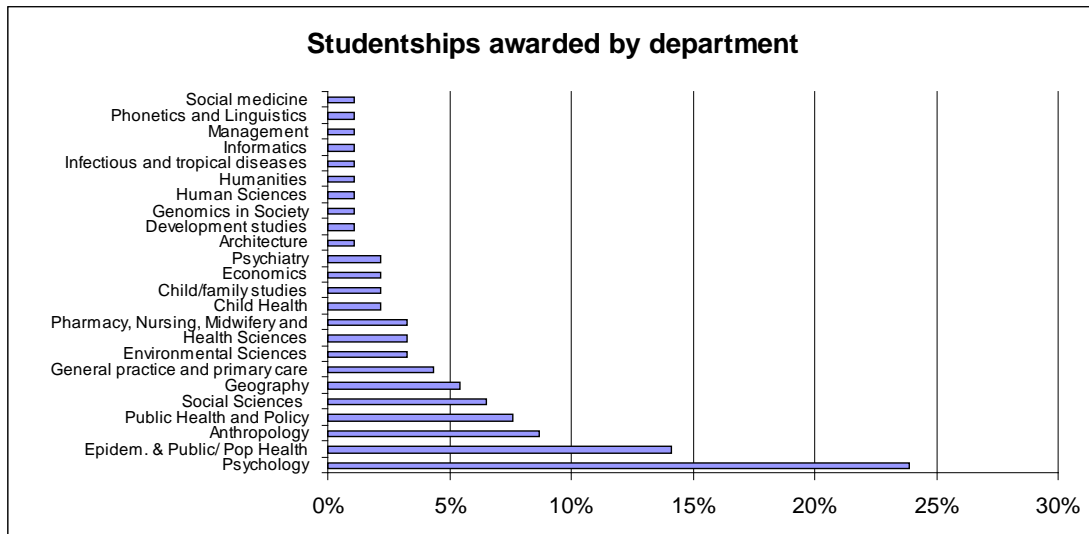


Chart 10: Distribution of postdocs across HEIs

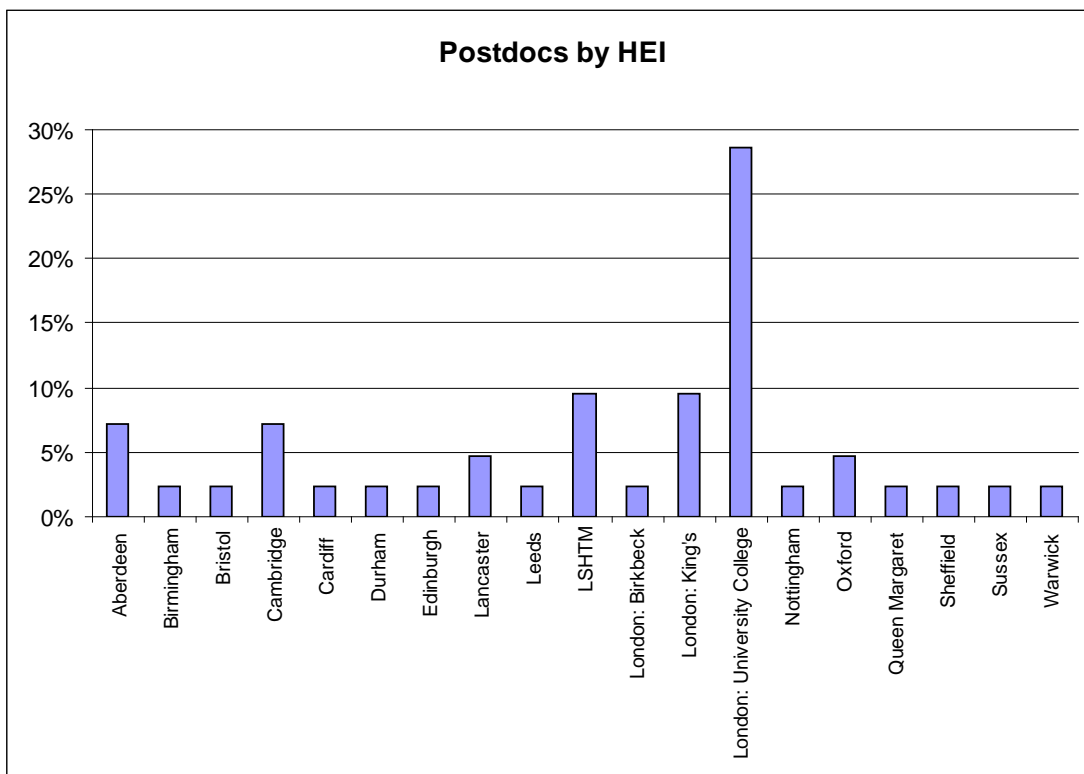


Chart 11: Distribution of postdocs across departments

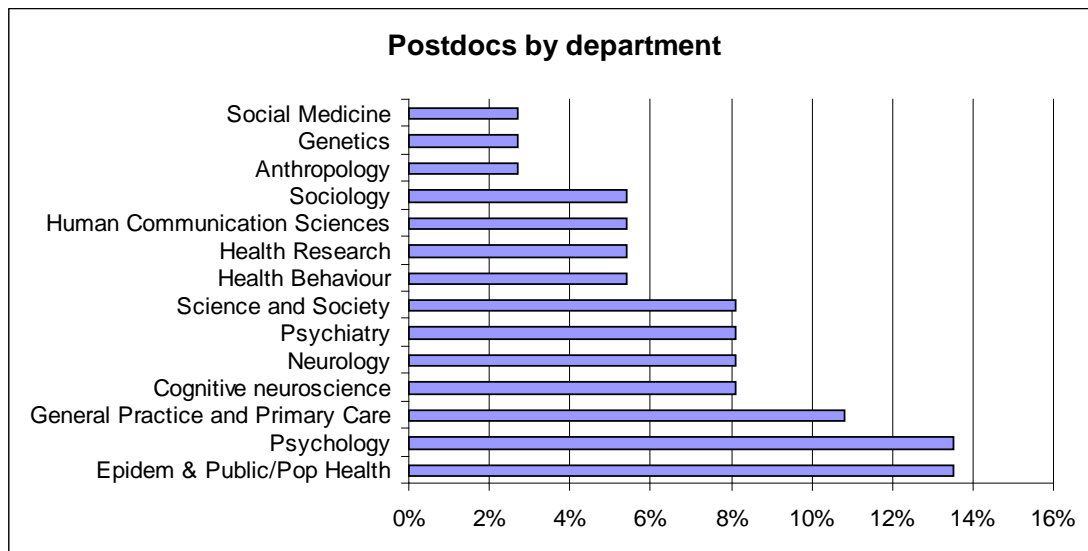
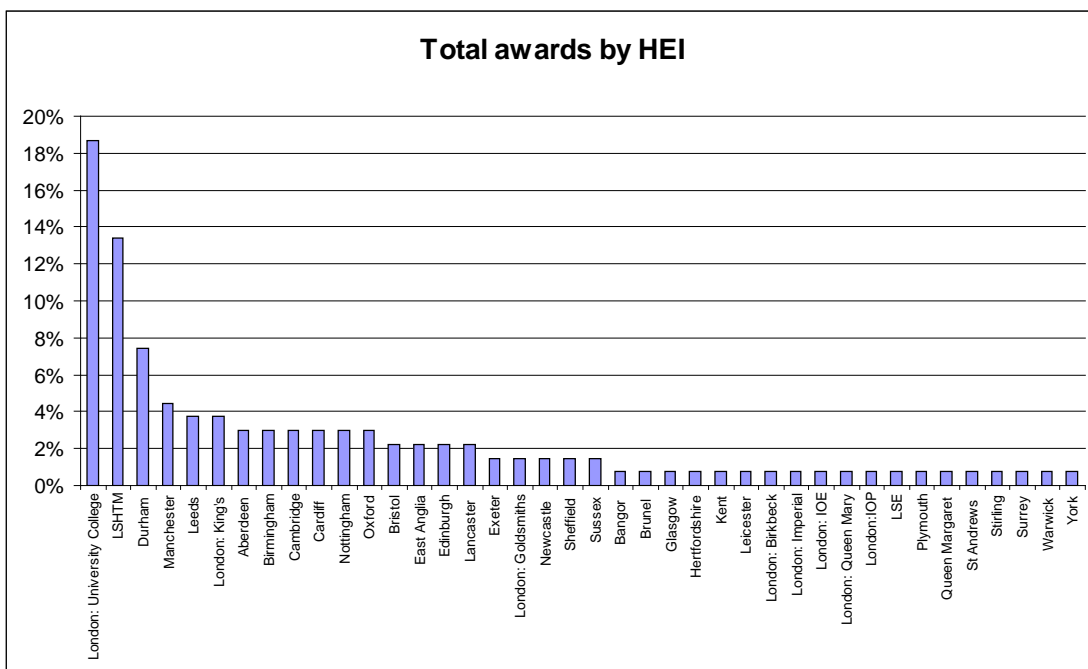


Chart 12: Distribution of total awards across HEIs



Summary of findings: Operation

The Scheme attracts suitably qualified students and postdoctoral researchers and the timing of the application process does not appear to present any problems to applicants or their supervisors/mentors. Awardholders are tackling projects that are genuinely interdisciplinary in nature. Our data show that the clear majority of both types of awards go to individuals with a first degree in psychology which could encompass either or both of the social or clinical aspects⁴². Our analysis identified a

⁴² As we have noted elsewhere, psychology is of interest to both the ESRC and the MRC. The field is sufficiently heterogeneous that the range of social science/academic psychology approaches and of clinical psychology approaches might "meet in the middle" at an area of overlap that is not strongly interdisciplinary, or they might occur at various intellectual distances from each other, even at quite

range of support mechanisms being provided by institutions and this was broadly regarded by respondents as satisfactory and sufficient. The majority of awardholders had found it easy to find a supervisor/mentor with the appropriate knowledge and experience. Around a quarter of these supervisors/mentors said that they would have benefited from some further training for their role. The distribution of awards across HEIs shows clear peaks with UCL and LSHTM accounting for almost one-third of all awards. While awards are certainly going to strong departments, the Research Councils may wish to reflect further on this concentration of awards. It has also been noted that, when the management of the Scheme's competition rotates between ESRC and MRC, it can be influenced by the fact that the Councils have different disciplinary traditions and place different emphases on, for example, the nature of interdisciplinarity and the role of new research within the postdoctoral awards.

4.3 Skills, impacts and outcomes

Have the students been able to develop innovative new approaches and methods through the interdisciplinary nature of the scheme?

One-third of awardholder respondents felt that the main interdisciplinary impact of their project was the provision of methodological tool(s) and/or an additional perspective(s) as an extra dimension of a project rooted primarily in one discipline but over a quarter felt it was too early to say what the main impact would be⁴³. Responses from supervisors/mentors were very similar (Table 9).

Interviewees held similar views and we found a variety of examples in which innovative approaches, tools and datasets are creatively aligned, ranging from new ways of combining psychometric questions with genetic analysis in obesity research, to a new marketing tool used for measuring social economic status and testing its application to health-related data sets, to novel approaches that involved, for example, studying phenomenology of a mental health event or new ethnographic approaches to a particularly hard-to-reach target medical group.

Table 9: The main interdisciplinary impact comparing awardholder (A) and supervisor/mentor (S/M) responses

	A	S/M
Provision of methodological tool(s) and/or an additional perspective(s) as an extra dimension of a project rooted primarily in one discipline	33%	30%
Too early to say	26%	29%
Development of an unusually diversified portfolio of existing approaches and methods drawn from both the medical and social sciences	25%	21%
Generation of novel methods or approaches, drawing on more than one discipline	16%	19%

opposite ends of the spectrum, making a project distinctly interdisciplinary. The field is also of interest to a great many undergraduates; HESA's 2007/2008 figure of 72,570 HE students shows Psychology to be more popular than any specific subjects other than nursing, business and teacher education/training (see www.hesa.ac.uk/index.php/component/option,com_datatables/Itemid,121/task,show_category/catdex,3/#subject)

⁴³ The Scheme started in 2004; two-thirds of survey respondents are still in post.

To what extent do students make use of other training and development opportunities offered by ESRC/MRC or other providers during their funding period?

As **Table 10** demonstrates, awardholders seem most likely to access training locally at their own institutions, with only half of them accessing ESRC/MRC training and around two-thirds using other training providers to some extent. For example, training opportunities taken up by four postdoctoral fellows at one major institution include: a couple of specific 5 day technical summer courses, a six week short course on qualitative research methods, several 1-3 day specific technical courses, one-to-one tuition on statistics and, at the home institution, 1-3 day training in: supervision, interviews, teaching, Web CT, career & professional development, time management, mind-mapping, development of thinking and writing, as well as training inherent in some conferences.

Table 10: During the funding period to what extent have you made use of other training and development opportunities which are ...

	To a great extent	To some extent	Not at all
offered by ESRC or MRC?	7%	43%	50%
offered by your institution?	40%	55%	5%
offered by other training providers?	8%	57%	35%

Are the publications and papers produced by students of a high academic standard? Are they mainly interdisciplinary in type?

Supervisors/mentors did not believe that the academic standard of papers produced by awardholders was lower than those produced by more conventionally trained ECRs at the same stage in their career⁴⁴.

Awardholders seem to be trying to strike a balance between publishing in less well-established journals and those deemed more 'mainstream' and likely to be highly regarded within the context of the Research Assessment Exercise (RAE)/Research Excellence Framework (REF). Similarly, they seem to be publishing across a range of social science, medical science and interdisciplinary journals. Supervisors and mentors suggested (**Chart 13a and b**) that awardholders were developing diverse portfolios of publications in both well-established and less mainstream journals and across the social and medical sciences as well as in outlets that would be considered interdisciplinary.

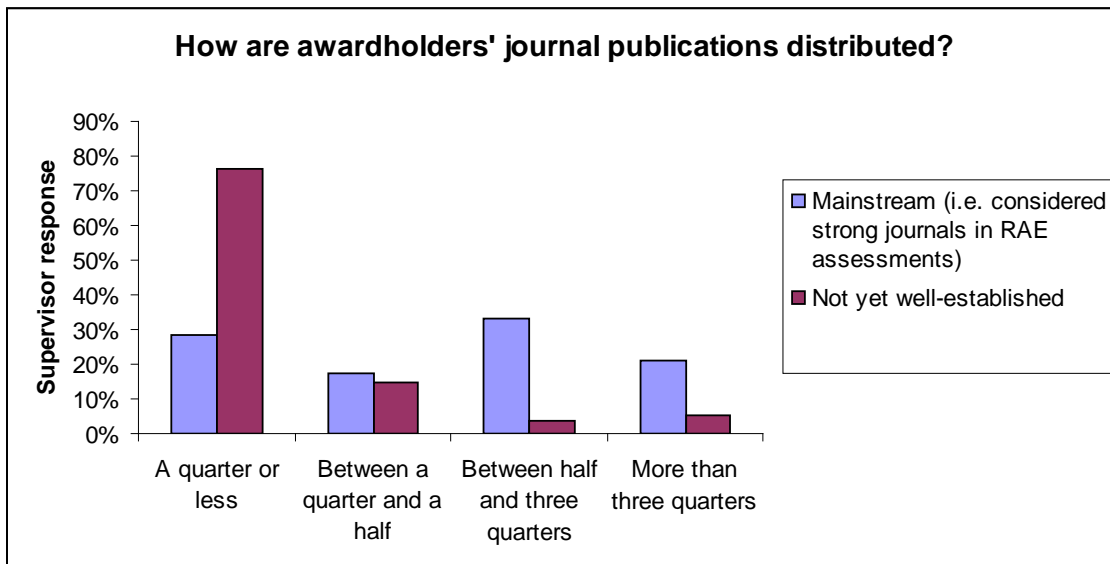
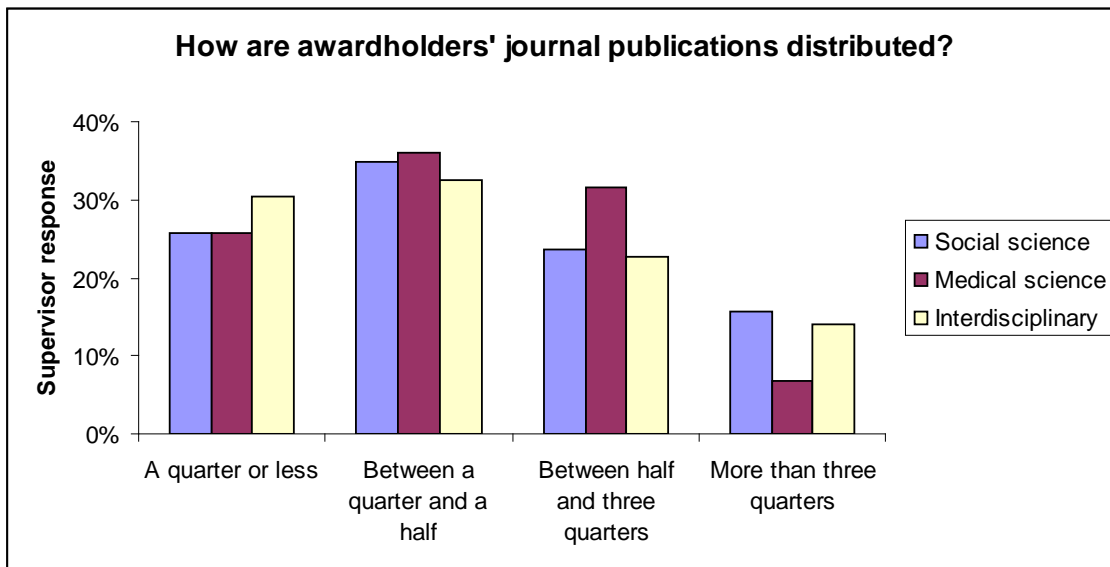
A little under a quarter (22%) of the awardholders said that they had experienced difficulty in getting their interdisciplinary work published although 47% disagreed⁴⁵.

A sizeable minority of awardholders (47%) had published something with their supervisors/mentors as a result of work funded by the Scheme.

⁴⁴ 5% thought standard was lower; 19% neutral.

⁴⁵ However, only just over half of the survey respondents answered this question, indicating that many had not yet reached the stage of publishing their work.

Chart 13: Supervisor/mentor assessment of awardholders' publication outlets



Is there evidence of ESRC/MRC students and researchers engaging with users during their award or following it?

Awardholders claimed to be engaging with users both within and outwith academia, or have the intention of doing so, both during and after awards. Lack of resources, training, etc. did not appear to be a disincentive. Supervisors/mentors tended to be more cautious in their expectations of the awardholders' abilities to engage with users outside of academia⁴⁶.

⁴⁶ 38% of awardholders said they engaged with (or intend to engage with) potential research users following the end of award 'to a great extent' compared with 17% of supervisors/mentors who were asked to reflect on their supervisee's user engagement. Similarly, 36% of awardholders said they engaged with

Various types of engagement activities were undertaken by awardholders. For example, these included, but were not limited to:

- Developing a media profile for their project
- Publications in journals, policy reports, and newsletters readily accessible to users
- Presentations/briefings to government, policymakers; commenting on draft policies
- Presentations (through individual seminars, or workshops/conferences led by or participated in by users) to practitioners (e.g. NHS clinical practitioners, allied health professionals, also public such as patients/carers, etc.).
- Short courses/continuous professional development (CPD) for professionals
- Collaborative seminar series
- Membership in professional groups that include users
- Maintaining a network of contacts, sharing information
- Interactions (e.g. volunteering with a charity, working relationships with local health clinics to further feedback from research into practice, assistance with study design, involvement of indigenous peoples in research and sharing results, placement of a student with a user)
- Participation in joint interdisciplinary funding applications with clinicians, health professionals, patients, etc.
- Follow-on research, funded by users and/or collaboration in conducting research with users, e.g. voluntary service providers, or RNIB

Interviews revealed a strong inclination to making a difference in the world; as one awardholder observed, her research has a “real potential for doing good”. Such an orientation toward knowledge exchange and impacts makes these awardholders relatively likely to generate some societal impacts in the long-run.

Examples of this engagement included⁴⁷:

1. British Heart Foundation toolkit for Exercise Referral Scheme: Whilst undertaking her PhD awardholder Sarah Sowden was in close contact with exercise referral scheme providers, commissioners and others undertaking research in this field. She became aware of work being undertaken by the British Heart Foundation (BHF) National Centre for Physical Activity and Health to produce a toolkit for Exercise Referral Scheme referrers, commissioners and providers (www.bhfactive.org.uk/downloads/ER_toolkit_draftversion_web.pdf). As a result of contacting the BHF about her research, her work has been cited in chapter 1 of the toolkit and she provided input to the consultation on the draft (the final toolkit is being compiled at the moment). Upon completion of her PhD, Dr Sowden returned to working in the NHS where she is a Specialty Registrar in Public Health. During her first placement at Northumberland Care Trust she was able to directly use some of the knowledge gained through her PhD research to assist in drawing up a standard service specification for commissioning of exercise referral services across Northumberland.
2. Collaboration with the RNIB: the ESRC/MRC interdisciplinary fellowship awarded to Dr Atsushi Senju supported the initial development of the project, which aims to explore how the sighted babies of blind parents develop the brain mechanisms and skills for social communication, including the use of cues from the eyes of others. This project is now funded by an ESRC Research Fellowship, with support from the Royal National Institute of Blind People.

(or intend to engage with) potential research users outside of academia ‘to a great extent’ compared with 15% of supervisors/mentors.

⁴⁷ These four awardholders have agreed to waive their anonymity and have agreed that these examples may be published.

3. A new behavioural speech and language therapy programme for stroke-related communication disorder (aphasia): Dr Suzanne Beeke's work which she developed with an ESRC/MRC award is now funded by a grant from the Stroke Association. Knowledge transfer to end-users, i.e. people who have had strokes and their families, is central to the project via their involvement in the therapy. Her work is being disseminated to speech and language therapy (SLT) practitioners in the NHS via clinical conferences and study days, and to the practitioners of the future via the curricula for University College London SLT professional training courses and postgraduate research degree courses. An outcome of this work will be a published therapy programme for speech and language therapists, to ensure that the provision of this novel therapy based on ground breaking research becomes standard practice within the NHS.
4. Report on infertility in Malawi for the Health Ministry: Dr Bregje de Kok disseminated her PhD research on constructions of infertility in Malawi in the form of a report to a range of Malawian clinicians, community health specialists and NGOs. The report was drafted in consultation with these stakeholders and the final version circulated widely (see www.qmu.ac.uk/iibd/docs/profiles/Malawi%20Report%20New.pdf). This work has had some important impacts in terms of awareness-raising both within Malawi and in Scotland where the Scottish Government has various initiatives with that country. Dr de Kok has also been approached by a Malawian public health expert who had read her report and would like her to supervise his PhD on infertility related issues and would like to develop guidelines for clinical officers in Malawi. The latest Reproductive Health Policy of Malawi addresses infertility and Dr de Kok's work may have contributed to this heightened awareness and made health practitioners and policy-makers put infertility a little higher on their list of priorities.

What do students/researchers do after the Scheme? How successful are students/researchers in finding suitable employment? Do many remain in academia or do they follow alternative career paths?

The majority of awardholders and supervisors/mentors (80% and 84% respectively) felt that engaging in interdisciplinary research leads to significant career benefits for ECRs but, the fact that a significant fraction (19%)⁴⁸ of supervisors/mentors agreed that interdisciplinary research leads to considerable career *disincentives* for ECRs, underscores a continuing role for Research Councils in monitoring their provision of career development awards and incentives – either to orient some of these deliberately toward interdisciplinarity and/or to ensure pro-actively that interdisciplinary applicants do not suffer during review/selection processes. Awardholders were committed (35%) or strongly committed (54%) to pursuing an interdisciplinary career on completion of the award. Supervisors/mentors also thought their ECRs were committed to pursuing an interdisciplinary career on completion of the award⁴⁹.

Only around one-third of respondents had completed their award. Of these, almost half (49%) were in temporary research posts, a quarter were in a permanent academic

⁴⁸ We asked two separate questions in the survey regarding (a) career benefits and (b) career disincentives which supervisors/mentors did not answer completely consistently hence the figures of 84% and 19%.

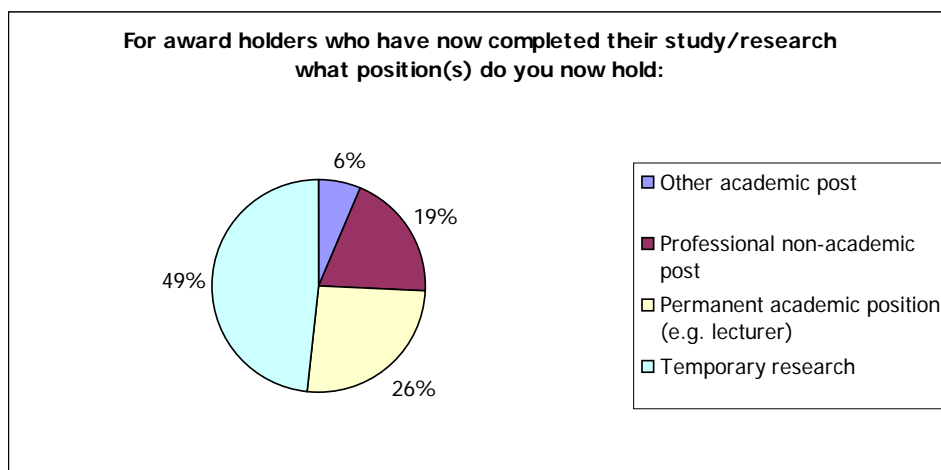
⁴⁹ 79% committed/strongly committed, 15% neutral.

position (26%), 19% had left academia and 6% held another type of academic post (Chart 14)⁵⁰. None reported that they were unemployed.

The funding has made a real difference. As one postdoctoral awardholder now in a full-time permanent lectureship stated firmly in the end-of-award report:

“Without the dedicated research time and financial support provided by this postdoctoral fellowship, I would not have been able to consolidate my research or move my career on to the next level in such a short space of time.”

Chart 14: What students/researchers do after the Scheme



To what extent do students/researchers remain in the UK following the end of their award?

The vast majority (87%) of the awardholders who told us about their destinations were still in the UK.

Do students who remain in academia go on to participate in further interdisciplinary research, reusing the skills they have developed?

Only one person from this group told us that they were no longer engaged in an activity that draws upon their knowledge of both the social and medical sciences. When we asked why awardholders had applied to this Scheme, 81% said that they were committed to pursuing interdisciplinary work. While we were not given details as to current research topics, it is thus clear that the general approach of those “alumni” of the scheme who remain in academia do retain an interdisciplinary approach to their work that is thus related to the approach of the research funded by the Scheme.

How do the skills, impact and outcomes compare with students funded through the studentship competition?

We asked supervisors/mentors about the calibre of awardholders in comparison with ECRs that they had supervised/mentored under other Research Council open competition awards. The majority of survey respondents (56%) were neutral on this

⁵⁰ The evaluation of the ESRC Postdoctoral Fellowship Scheme (Meagher 2004) found that the majority of Fellows had found jobs with around half in permanent positions. The equivalent data for this scheme show that 32% are in permanent academic positions and 42% in temporary research posts.

issue, implying no difference in quality, but almost a quarter (24%) agreed that the Scheme students were of a higher calibre⁵¹.

We then asked supervisors/mentors what differences, if any, they noticed between ECRs funded under this joint Scheme and those funded by either ESRC or MRC under their open competitions⁵². The majority was clearly of the view that those who held awards under this Scheme were in some way better than others they had supervised/mentored: they spoke about them as being broader thinkers, more innovative, more open to different ideas or approaches, harder workers. One respondent described these awardholders as “braver”:

They are "braver" than most students in that they are actively moving outside their comfort zones in terms of earlier training...In terms of their attitude to research users, these students also appear to be much more committed to solving real world problems rather than pursuing careers, and have chosen a less "safe" route for this reason

This highlights a point made by others who indicated that awardholders may be more willing to engage in knowledge exchange; others felt that job prospects would be better.

As noted above, the academic standard of papers produced by awardholders was not considered by supervisors/mentors to be lower than those produced by other ECRs at the same stage in their career. In interviews, supervisors/mentors clearly felt that the quality of publications was (at least) as high as that of conventional students and postdocs. One interviewee pointed out that three Scheme awardholders had also won a conventional MRC award, illustrating their comparable level of quality and many enthused over the outstanding nature of particular ESRC/MRC fellows, describing many career successes (e.g. a lectureship, a four-year fellowship, a British Academy Fellowship, etc.) In fact, another supervisor/mentor with experience in reviewing interdisciplinary research proposals from mature academics, feels that those proposals are generally weak compared to Scheme students.

One supervisor/mentor captured particularly well what perhaps others are often seeing in Scheme awardholders, by describing key characteristics of the ideal interdisciplinary student, who needs to be aware of, and able to negotiate with, different collaborators, structures, decision-making, units, institutions:

social abilities and ...a thirst to know all about lots of different areas; you could see it at once because they would bring information from different areas into their conversation and you could see they had sort of different connections that they would make. And it's different from the meticulous person working in the back room of one discipline. ...The person needs to be confident and have a high degree of creativity to see the links between different disciplines, they need to be well-grounded and they need to show a wide range of abilities across different areas, so you're looking for excellence across a range of abilities, it's not better or worse, but it's different. Different types of scientists will answer different questions

Further comparison between students funded through this Scheme and through ESRC open competitions was provided at Durham University, through the Unit focus group (described on p.9) and several interviews. It is clear that experiences of the Scheme's students are not necessarily unique. For example, the pursuit of a PhD is often a lonely

⁵¹ 10% disagreed.

⁵² Fifty-seven survey respondents made some form of comment; eight replied to say that they did not have sufficient experience of other schemes to offer a view. A further eight did not perceive any difference.

experience⁵³. Furthermore, many students can be ‘somewhat interdisciplinary’ without being funded by the Scheme⁵⁴. For such students, as for Scheme students, opportunities lie in the ability to gain inspiration by considering an issue from multiple perspectives. Challenges include conflicting priorities, wariness among supervisors or unexpected obstacles when entering new terrain. For any students with joint supervisors, whether part of the Scheme or not, potential problems exist. The focus group students did not feel there were any additional institutional hurdles for Scheme students. There were differing views on whether interdisciplinarity conferred advantages or disadvantages to one’s career path; a recommended tactic was artful tailoring of one’s self-description to the particular position sought.

For many aspects of the postgraduate experience the funding source was not seen as making a great difference. The Scheme does clearly offer practical benefits, even crucial ones, particularly where having a clinical co-supervisor can facilitate ethics approvals and access to patient populations. Students offered a variety of messages to Research Councils regarding improvement of interdisciplinary capacity, including continuation of funding of such work, creating more interdisciplinary postdoctoral positions, making it easier to undertake interdisciplinary postgraduate work across departments, encouraging more interdisciplinary modules at undergraduate level, funding sufficient training for those requiring multiple disciplines’ skills.

Beyond comparing the ESRC/MRC Scheme to open competitions, an obvious comparator is the ESRC/NERC scheme, also aimed at building human capacity in interdisciplinarity (though only through postgraduate fellowships, not postdoctoral fellowships). We have conducted elsewhere a detailed evaluation of that scheme⁵⁵ and found that, like the ESRC/MRC scheme, it succeeded in helping students develop an interdisciplinary way of thinking and that nearly all projects conducted appeared to have been genuinely interdisciplinary, though to varying degrees and with varying balances between disciplines. As noted previously (page 12), there may be a slight difference in interdisciplinary “range” between the two schemes with the ESRC/NERC scheme apparently encompassing a greater number of disciplines.

The awardholders of both the ESRC/MRC and the ESRC/NERC schemes are seen as at least as strong as conventional awardholders and both Schemes are perceived as affording otherwise unavailable opportunities to undertake innovative, interdisciplinary types of projects. Both schemes were viewed very positively by those involved, with wide support indeed for their continuance.

Further comparisons can be offered by considering the Integrative Graduate Education and Research Training (IGERT) scheme of the US National Science Foundation which is another publicly-funded programme promoting postgraduate interdisciplinarity⁵⁶. It should be noted that this scheme provides very large-scale grants to individual institutions to develop postgraduate training in a particular interdisciplinary area (e.g. language sciences). Despite these differences in scope and targets, however, the commonality of the goal – building interdisciplinary human capacity – makes comparison with some of the findings of the ESRC/MRC Scheme’s evaluation relevant.

⁵³ A survey of UK postgraduate students (across fields and 58 institutions) found that, although over 80% felt the programme as a whole met or exceeded expectations, half the respondents were negative about research ambience and a feeling of being integrated into the department; a fifth viewed supervision as not meeting expectations. Just a third of respondents indicated that they had received “any encouragement to reflect on career opportunities and development needs” (Higher Education Academy, 2007).

⁵⁴ For example, some may have had a previous career or be working closely with a charity, NHS Trust or company, thus gaining a different perspective even while not formally “interdisciplinary”.

⁵⁵ Meagher and Lyall (2005).

⁵⁶ Abt Associates Inc (2006).

As in the ESRC/MRC and ESRC/NERC schemes, quality was not seen as having been sacrificed in the pursuit of interdisciplinarity; for example, 84% of IGERT faculty felt that their students “are being prepared to know their own discipline in depth” well or very well (with 14% neutral)⁵⁷. There was a positive view as to career possibilities, with 63% of IGERT students surveyed feeling they were being prepared for a wide range of career possibilities, compared to 44% of non-IGERT students⁵⁸. Only 15% of the IGERT students responding to this question were concerned that their interdisciplinary work might “harm their ability to get a traditional job in their own field”⁵⁹. This would seem consonant with the fact that the majority of ESRC/MRC survey respondents felt that, either to some or a great extent, awardholders had been given the skills to work in a specific area that bridges the medical and social sciences, or the skills to work in either the medical or social sciences, but with a broader perspective.

Our analysis has identified the importance of a variety of mechanisms in fostering interdisciplinarity among Scheme ECRs. In the same way, more IGERT than non-IGERT students cited “access to disciplines and expertise outside of home department, opportunities to study multiple disciplines, working on a research project involving multiple disciplines; courses presenting laboratories or research techniques of multiple disciplines; communicating to people outside your home discipline; attended professional conference outside home discipline; laboratory rotations in multiple disciplines; developed or taught a multidisciplinary/interdisciplinary course or educational effort”⁶⁰. The IGERT scheme, like the ESRC/MRC scheme, also encouraged additional sorts of training⁶¹.

Nearly all supervisor/mentor respondents agreed that the ESRC/MRC scheme had either to some or a great extent fostered their own interdisciplinarity, with more than half having developed other interdisciplinary collaborations. Showing a similar “ripple effect”, the IGERT evaluation also found that participation in IGERT led to “an additional shift towards more interdisciplinary work” as reported by academics and department chairs⁶².

Summary of findings: Skills, impacts and outcomes

Respondents felt that the main interdisciplinary impact had been in the provision of methodological tools and/or an additional perspective as an extra dimension of a project rooted primarily in one discipline but for many respondents it was too soon to say what the main impact would be. Awardholders were most likely to access training locally at their own institutions although they also reported accessing training and development opportunities offered by ESRC/MRC or other providers to some extent. The publications and papers produced by awardholders were of a high academic standard and were appearing in a range of social science, medical science and interdisciplinary outlets. We found evidence of awardholders engaging with users during their award and following it although for many it was too early in the process for impacts to be evident. Only around one-third of respondents had completed their award. Of these, 81% are currently employed in some form of academic post, 87% are still in the UK and only one respondent who remained in academia stated that they were no longer participating in interdisciplinary research. In comparison with

⁵⁷ *Ibid.* p.24.

⁵⁸ *Ibid.* p.27.

⁵⁹ *Ibid.* p.28.

⁶⁰ *Ibid.* p.22.

⁶¹ Most IGERT students reported receiving training in: ethics, working on a team research project, statistics, research methods, state-of-the-art instrumentation, and communication skills.

⁶² *Ibid.* Executive Summary viii

awardholders funded through the open competitions, Scheme awardholders were described as being broader thinkers, more innovative, and more open to different ideas or approaches.

4.4 Lessons learned and further development

What are the identifiable strengths and weaknesses of the scheme? Should it be continued, how might it be developed and improved?

Attitudes toward continuation of the Scheme

Almost all survey respondents⁶³ said that they thought that the Scheme should continue⁶⁴. Reasons offered primarily emphasised:

- the gap in funding that would otherwise exist⁶⁵
- the importance of interdisciplinary research
- the ability of interdisciplinary research to tackle practical problems
- the need for UK to build interdisciplinary capacity (the importance of creating career structures in the face of negative pressures was raised multiple times).

"This is the kind of change that funders should be encouraging – this is the right thing to be doing."

Interviewees, almost to a person, were extremely enthusiastic about the Scheme and strongly recommended that it continue or indeed expand. Many stressed that, without the Scheme, interdisciplinary individuals in these areas would not find support. The Scheme is seen as vital since interdisciplinarity is key to critical global problems⁶⁶.

"We cannot resolve any of the big challenges we face in the future with just people who have sat in silos coming together. We need young professionals who have come up in this way... to see the interconnections."

Perceived strengths of the Scheme

Several benefits particular to this Scheme came out in interviews:

- funding individual/topic that would have fit neither research council's own remit
- novel intellectual foci (benefiting supervisors/mentors as well as awardholders)
- ensuring commitment to interdisciplinarity among all parties
- status, recognition
- ability to reach/network with diverse individuals
- more money (also allowing for patient incentives, travel, etc.)
- longer time for consolidation of PhD (for postdocs)
- access to patient populations, ethics approvals

"other people's approach to interdisciplinarity can be rather ad hoc ... this scheme forces you to sit down with the student, with the supervisors at the beginning, and think about interdisciplinary, and have commitment from both sides."

Perhaps the comment voiced most often was that, without this Scheme, the individual would not have been able to secure funding, since it would fall between the remits of MRC and ESRC and there were seen as few alternatives. One individual offered a "control": she had submitted a proposal to MRC and found that, while referees liked most of what she was trying to do, she could see that "they seemed a bit bemused by why I was trying to put qualitative exploration together with quantitative exploration"

"I wouldn't have been able to do this any other way".

⁶³ 96% of awardholders and 91% of supervisors/mentors.

⁶⁴ Eight of the 90 awardholders and 16 of the 142 supervisors/mentors did not give an answer. Seven people felt that the Scheme should only continue for PhD students (one person suggesting, for example, that there are more possibilities to secure interdisciplinary postdoctoral positions while another suggested the opposite – that by the postdoctoral stage an individual is ready to go into depth, not breadth) and seven people said it should only continue for postdocs (with several suggesting that a base of research skills must be learned at the PhD level).

⁶⁵ Even more supervisors/mentors than awardholders stressed this.

⁶⁶ Interviews and, to some extent, free text responses in surveys, made it possible to dig more deeply into respondents' attitudes, insights, advice and suggestions. Illustrative quotations from these interviews and survey free text responses are included in the margins or, where particularly germane, in the body of the narrative.

and she was not funded. Similarly, another student was grateful that she could pursue the problem she cared about which “might have been too qualitative for MRC and too medical for ESRC, but this Scheme allowed me to marry the two bits together”.

“You benefit from the knowledge and perspective of other disciplines through having a postdoc.... You’re forced to learn about the other mentors’ areas to keep up with your postdoc, so the scheme acts as a catalyst for that learning”.

A real sense of intellectual value enabled by the Scheme emerged. One postgraduate reflected that, without this award, she would have remained “comfortably ensconced” in her original discipline; now in a different department due to the award, she feels that it “opened my eyes to a whole new way of working I was totally oblivious to”. Not only awardholders benefited: supervisors and mentors often gain intellectually as well.

Many of the awardholders appreciated the Scheme’s support for self-generated topics, rather than fitting them into an existing research group to simply investigate a supervisor/mentor’s problem. The length of the postdoctoral award was appreciated, making it possible to write publications and apply for subsequent funding.

“a more intense support from the clinical side than would have happened if it had just been an informal component, so the Scheme brought more buy-in from the medical side”

There are some differences of opinion as to the degree to which the source of funding matters: some feel that the named Scheme confers benefits, lending prestige and recognising outstanding, committed interdisciplinarians⁶⁷. The interdisciplinary branding and access to diverse networks is beneficial.

“the Scheme gave me the standing, the ability to talk to both groups, medics or social scientists”.

A key advantage appears to be the explicit emphasis on commitment to interdisciplinarity: students “force the issue for the academics”, so that they work together across disciplines and institutions. This may be particularly important in engaging busy medics: it was noted on several occasions that without a medical supervisor/mentor it would be very difficult to reach patients, or gain ethics approvals.

Perceived problems related to the Scheme

Quite a few interviewees saw no particular problems or barriers related to the Scheme.

“Most clinicians are too busy to do anything, even though they make encouraging noises.”

One practical problem cited frequently was access to patients. A related practical problem is the difficulty and length of time involved in getting through the ethics approval processes, which can be difficult to manage within the timeframe of a PhD. Both of these practical problems can sometimes be facilitated by a clinical co-supervisor. However, there is sometimes a sense that clinical supervisors can be so busy (and/or protective of their patient groups) that this may not happen or if it does, may sometimes be fairly close to the extent of their involvement: clinical co-supervisors/mentors were sometimes seen as less involved than their social science counterpart.

“Sometimes it is really hard to find a common language just to talk about thing and in engaging people with your ideas when they come from different disciplines. ... it is about finding a way of making them interested speaking their language”.

“After all, it is hard to tell people who are successfully saving other people’s lives that they might be doing something different or they might broaden out more.”

As in any interdisciplinary research, language and basic tenets of an approach can pose problems. A long-standing concern is that clinicians may view or treat social sciences as an “add-on”. Differences in methodology can be problematic not just during the research but also in getting published. One social sciences supervisor/mentor raised deep concern over the lack of sophisticated statistics as a barrier to publication in medical journals. The only course that seems specialised enough costs £1,800, certainly too expensive for individual students. This person suggested that quite specialised short courses or, even better, coaching is needed in second and third years (and perhaps in postdoctoral years) to provide tailored statistical learning.

Some feel that interdisciplinary supervision raises no more issues than are inevitable with any sort of joint supervision. Others feel that it may exacerbate the issues. Particularly problematic for students is when the two (or three) supervisors cannot

⁶⁷ For instance one interdisciplinary department “shows off” its ESRC/MRC fellows as a way of illustrating the department’s way of working.

agree. A postdoctoral awardholder, reflecting on difficulties of having two mentors at two institutions suggested that spending up to three months in the partner institution early on could facilitate interactions. Supervisors also experience difficulties with one suggesting that there might usefully be more support for supervisors in dealing with competing disciplinary interests/priorities.

“the final examination is still where the single disciplinary focus holds strong, and it is very difficult to put together panels of examiners who can “hear” across disciplines at the point of examination”

Choice of PhD examiners can be a crucial issue for interdisciplinary students. Much may depend on the supervisor’s own interdisciplinary networks and their advisory role in selecting appropriate examiners who appreciate interdisciplinarity. A more interdisciplinary doctoral examination process may be needed where students who have moved into interdisciplinary research, can be examined by academics from different disciplines or who have demonstrated sympathy with interdisciplinary approaches⁶⁸.

There was a spread of opinion as to whether awardholders had encountered difficulties because of the interdisciplinary nature of their work (**Chart 15**) but less so because of institutional constraints (**Chart 16**).

Chart 15: Problems because of the nature of ID work

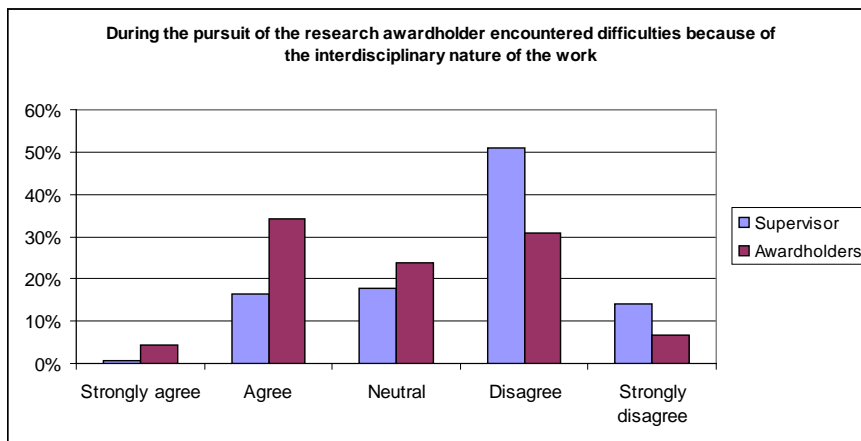
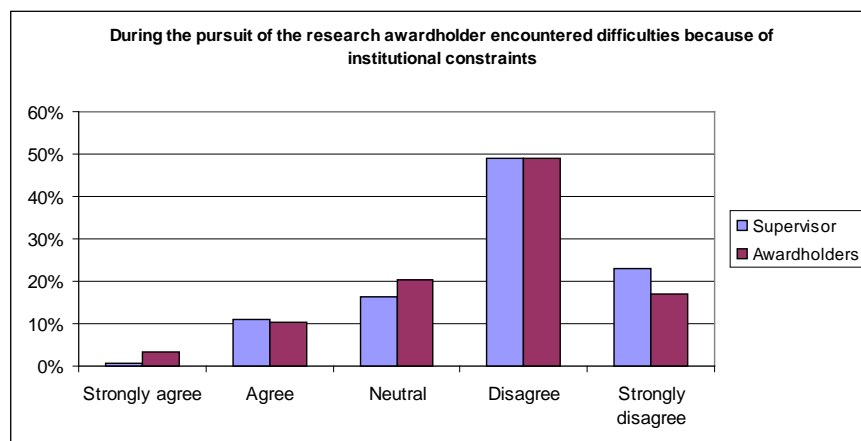


Chart 16: Problems because of institutional constraints



⁶⁸ One overtly interdisciplinary supervisor/mentor, for example, is invited to be external examiner for PhDs across Europe, even in fields not directly relevant to her research; clearly that combination of sympathy with rigour is much sought-after.

What have the benefits/problems been for researchers engaging in interdisciplinary research between other social and medical sciences?

Benefits

"you get a truer picture of what is going on by looking at it in a multi-faceted way".

Interviewees show great enthusiasm for the intellectual benefits conferred by interdisciplinary research and frequently link this multi-faceted understanding to knowledge exchange and application. Views are more mixed, or qualified, regarding the extent to which interdisciplinary work is an advantage in career development.

"There's a personal fascination; you can learn so much from different perspectives, so curiosity is the driver"

Intellectual interest is a key benefit. A postgraduate awardholder felt that, through an interdisciplinary Masters and PhD, she could look at things in a broader way. Interdisciplinarity can lead to innovation:

"if it works it can be really exciting and it can actually be quite groundbreaking. You get the benefits of pooling knowledge in different approaches to the same problem and this often reflects something new"

"The benefit is that it can bring more perspectives to bear on how you look at things"

The potential for well-rounded understanding of complex issues, that combine theoretically interesting questions with the potential for application, is thus a draw for many. Self-understanding is also seen as a benefit giving students a sense of what work is like in more than one discipline. A related intellectual benefit is that interdisciplinarity challenges the researcher to think about their own discipline, taking a self-critical approach to their disciplinary beliefs. One interviewee, who works in a group of "critical friends" from different disciplines, felt that interdisciplinary working leads to greater creativity and an acceptance that other people have different kinds of knowledge. This experience of working with an interdisciplinary team can thus make it easier to work in the applied world outside of academia. There can be real connectivity between interdisciplinary research and a future career leading to impacts from research.

"Without looking holistically at different research lines coming in you can be sure you can be missing some things. So it helps us to be able to explore phenomena we are interested in more effectively and more completely and we do not have to wonder about things without knowing that some other field has tackled that question."

"doing interdisciplinary research allows you to see where the research can be applied... there can be actual benefits to people"

When it comes to career prospects, some see interdisciplinarity as opening doors, others don't. The preparation could open doors to job prospects in two disciplines, in theory, although this is not guaranteed. The flexibility of most individuals involved in interdisciplinarity could be an advantage. (One specific way in which some of this Scheme's interdisciplinary PhDs can help keep options open is that individuals could go on in academic research or potentially take up clinical training thereafter, potentially helping to address NHS interest in clinicians doing research.)

One supervisor/mentor suggested that good students shouldn't have a problem selling their PhD while weaker students might suffer from being regarded as neither one thing nor another. However, others see additional subtleties, for example the relative marketability of the portfolio of skills built up (e.g. quantitative skills may be seen by several fields as "transferable"). Often whether or not an interdisciplinary background is advantageous is seen as dependent upon disciplines or problem areas involved. Some departments or units actively value interdisciplinary outlooks, so that an interdisciplinary PhD or postdoctoral award would be regarded as a plus in an applicant for a post. On the one hand, the RAE and its successors are seen as working against investment in interdisciplinary hires; on the other hand some see universities moving toward promotion of interdisciplinarity and application (which can be facilitated by interdisciplinarity)...the future of the balance is not yet certain.

"It is a high risk operation; if you pull it off you have two audiences you can take things to"

Problems

Quite a few interviewees actually saw no disincentives for doing interdisciplinary research. Some discussed the danger of being regarded as “a jack of all trades and master of none” and the inevitable balancing of breadth vs depth that has to take place. This can leave a young researcher feeling insecure. Generally, individuals hope that confidence and ability will avoid the potential trap of interdisciplinarity making them unemployable.

There is a sense that interdisciplinary work can take more time and more effort than conventional work. One postgraduate awardholder was advised by an external examiner that if she wanted to climb up a career ladder, “there is no such thing as interdisciplinarity; you have to take one discipline and stick with it.” This person, realising she will never be an expert in one type of academic capacity, recognises that she faces problems in deciding when/how to hop into other areas, which disciplines to make use of, where to publish, and so on.

Negatives can include loneliness, the question of identity (“Who am I going to be?”), a sense of being a guinea pig and the fact that interdisciplinary students may be taking a risk without realising it until they reach the stage of trying to figure out where they are going next. There may be specific constraints where, for example, some social scientists might get a glimpse of being involved in clinical research without realistically being able to develop future careers in clinical departments. Attitudes toward integration of a thesis can be challenging; one student, for example, was told to relegate all the social science work to an Annex, submitting only the rest for the viva.

Are there any generic lessons that can be applied to the development of interdisciplinary studentship schemes in other areas?

Through participation in the Scheme, individuals have learned lessons and developed insights that can be useful to counterparts in the future of this or similar interdisciplinary capacity-building schemes. Much of the advice garnered from surveys (free text) and interviews mirrors our own experience from working with interdisciplinary early career researchers⁶⁹. For more of this detailed analysis see [Annex J](#).

Lessons for future Scheme participants

Highlights presented in [Boxes 1 and 2](#) give a flavour of the advice from awardholders and supervisors/mentors for their future counterparts. Awardholders tended to focus on the selection and management of supervisors/mentors and examiners; others commented on the importance of planning and focusing, both within the thesis development and in terms of career plans or raised issues about skills development and networking. Supervisors and mentors emphasised points about supervision/mentorship, planning and focus, or reflected on the research process.

“When you look at job possibilities you wonder how you can compete with people who have been purely focussed in whatever the job advertisement asks for.”

“There is a limited amount of time and it's difficult to pursue an interdisciplinary area; you are unlikely to learn as much, or as many techniques, say, in both fields as you would if you had depth in just one field. You do get the breadth, but you have to compensate by being scarcer in depth – that's just the way it works.”

⁶⁹ See for example, *A Short Guide to Supervising Interdisciplinary PhD Students* tinyurl.com/idwiki

Box 1: Advice for future interdisciplinary students/postdocs

Going Forward with Confidence

- “Go for it! Be brave and do it!” (“it allows you to look at the bigger picture...you will always have an edge over very narrow people ... when you are looking for a job... you will include a variety of skills and also skills like how to juggle lots of different tasks, which can be very useful”)
- “Be prepared for the criticism you might face.”
- Know that it’s hard work.... “there are many easier ways to do a PhD”
- “Stay true to what you want to get out of your PhD”... you will need “patience, perseverance and confidence to disagree with people to pursue your PhD that you believe you should get”
- You have to balance the two halves... do the integrating... no one else is going to do that for you. You have to have the confidence to hang in there.

Selection & Management of Supervisors/Mentors, Examiners

- Be very careful with selection of your supervisors; be sure to get the right people. Also, get two people who can work together (whatever the specialties)
- Don’t feel restricted to only talking to your supervisors.
- Think carefully and sound out your supervisors regarding external examiners; make sure you get experienced external examiners with a breadth of view who are comfortable with interdisciplinarity. Make sure you and your supervisors are aware of potential pitfalls for interdisciplinary students. (“you can come a cropper if you have an examiner that does not understand the cross-disciplinary thing.”)Think about where you want to sit in terms of careers.
- If you have mentors at two different institutions, early on spend up to three months at the place that won’t be your main base; this will help the relationships in the future.

Networking

- Go to conferences and meet people with different perspectives
- Make sure you have good contacts and access to communities through publication strategies, conferences, various networks including access to local disciplines (e.g. through a Supervisor/Mentor’s introductions), which can help with work, publishing, career positioning
- Right at the beginning it is important to establish relationships with other people (students) doing the same thing (e.g. interdisciplinary approaches).
- Stay in touch with your original field (this will take personal drive)
- If the Research Councils start to hold events for the Scheme, go to them and meet other interdisciplinary individuals as part of a special group.

Publications Strategy

- Use a publishing strategy with both types of journals (note that value placed on interdisciplinary journals, e.g. by RAE, varies by field) and if relevant specialist interdisciplinary journals.
- Try to balance between high impact and specialist interdisciplinary journals. (With high impact journals you may not be first author, but will add to your track record)
- Learn how to do both sorts of writing (rapid, short, competitive medical journal articles and longer, more reflective and more slowly processed social science articles)

Skills Development

- Identify explicitly what sorts of skills you want from your PhD, which will in turn help you to articulate your skills when pursuing your later career. As an interdisciplinary student, you will need to think through both the social side and the medical side in this process of negotiation, leading to broader range and shallower depth. (Forward planning about skills is probably easier when the 1+3 years are all in the same institution.)

Other

- Don’t underestimate the scale of some “extra” tasks such as data cleaning or ethical processes, particularly if you are not a member of a team that is staffed for such things; you’ll go more slowly if you are a stand-alone PhD.

Selection and Management of Students, Postdocs

- For an interdisciplinary scheme, the person needs to be confident, well-grounded, creative, with a range of abilities including organisational and social skills.
- Ideally, put forward an individual for the Scheme whom you already know, to be sure their commitment to interdisciplinarity is real. Try to observe a prospective postdoc, perhaps with a small trial project but at least for more than a half-hour interview
- Achieve a balance, the three-legged stool, with the right fit between the student, the project and the supervisors.
- Sit down together and thrash through to the third way when there is a conflict between supervisors, so that the student isn't caught in the middle of conflicting approaches.
- Sort out which person leads on helping the student with which component of the work. Be aware of subtle complementarities in responsibilities even beyond obvious disciplinary remit.
- Think through and negotiate how either the range of skills the student is to acquire needs to match the problem they're looking at or the project that's decided upon needs to match the skills the student wants to acquire.
- Try to help students early on with any major paradigm (and/or lead discipline) for the study
- Use the Year 1 of the 1+3 to not only help the student learn methods but also do the planning for their PhD thesis so as to hit the ground running in the first year of the three.
- Encourage postdoctoral researchers to use primarily methods they already know or can pick up quickly, since it is hard to develop new methodologies from two fields as time will go by fast.
- Help postdocs manage their opportunity by asking them throughout to calculate the number of days before the funding ends, and consider the time relative to their desired endpoints.
- Help students to do more training... to look for training courses to help bridge gaps.
- Recognise that many interdisciplinary individuals will want to go on to applied research, to trying to make a difference in the real world (e.g. running R&D in NHS departments)
- Nurture the ID students as outliers; tell the students early that they will not be playing the normal role, that they won't necessarily be publishing in normal main journals. An example of good practice: when students ask to work in an ID way the prospective supervisor warns them and asks "Are you sure you want to do this? I really don't think it's a good idea".
- Encourage students to state their ground and articulate the challenges of interdisciplinarity, to help examiners understand the development of the thesis.
- Realise that as a mentor you need to be engaged with the whole package of your postdoc's research career and development, not just the research project.

Selection & Management of Supervisors/Mentors, Examiners

- Show good practice by going out of your comfort zone, e.g. attending interdisciplinary seminars
- If possible, the supervisors should be interdisciplinary themselves or at least understand the interdisciplinary side of things – perhaps even undergoing some training or receiving some guidance, perhaps "senior tutors" with interdisciplinary supervisory experience who can help. (It really is not enough to have two supervisors that are each at the end of the spectrum unless they've really got some understanding of their mid-way point)
- Appreciate the validity of different backgrounds and writing styles.
- One supervisor should ensure that the thesis is telling a story, not just a combination of different elements.
- Treat with some caution optimism that clinical partners might have as to the number of patients they can offer that would be suitable for the project and the speed with which they can be lined up.
- Ideally, select as joint supervisors people with whom you already have some interdisciplinary collaboration; don't pluck one out of thin air. (Difficulties and conflicts can arise.)
- Prospect for potential co-supervisors; talk to possible individuals before mentioning the scheme, ask colleagues about them, find out if they are open with the ability to discuss various things and think about things in new ways, if they like to explain their work in accessible ways.
- There can be benefits for supervisors too (e.g. new ideas for follow-on projects and subsequent publications)
- Choose examiners VERY carefully. They need to be prepared to think outside of the box. Who to pick for each discipline and the balance/match of multiple examiners is very important (as otherwise an interdisciplinary PhD student could be failed). Choose people carefully who are/can be sympathetic to interdisciplinarity.

Publications Strategy

- Encourage a mixed set of publications in different types of journals, ideally, probably two to three publications for a PhD, although this can vary with projects.
- Get people to do a lot of joint publications, use different angles, publish in different journals in different disciplines (becoming known in different ways)

Networking

- Advise students to go to different types of conferences, so they become known from different angles
- Provide access to communities/individual contacts. Introducing the student to other academics in the home institution, and encouraging them to work with the student, is good practice.

Other

- Consider as universities if management structures exist that genuinely fuel interdisciplinarity

Suggestions for Research Councils

Interviewees wanted to be sure that any recommendations for improvement they made were tempered by recognition that they liked the Scheme and wanted it to continue.

Six areas of improvement were suggested:

1. The importance of interdisciplinarity and also likelihood of application

Research Councils are encouraged to remember that the interdisciplinary work funded addresses crucially important problems, and that the role of interdisciplinarity has been evolving. Furthermore, it can be a source of creativity. Supervisors/mentors would like Research Councils to appreciate that there is often a correlation between interdisciplinarity and interest in the real world (and motivations of surveyed awardholders underscore this as a key driver) – and also in the ability of awardholders to reach out to a variety of audiences and job markets.

2. Community-building efforts, guidance

Awardholders, in particular, recommend strongly that the Research Councils offer or facilitate community-building across interdisciplinary postgraduates and postdoctoral fellows. Meetings, masterclasses, presentations, training, learning about often-shared matters like relationship-building with NHS and just getting to know each other would be attractive and supportive for awardholders. Some circulation of guidance, e.g. on choice of/relationship with a mentor or working with multiple supervisors, would be useful. Interdisciplinary early career researchers could communicate online, about issues but also about opportunities for postdoctoral or other positions, funding, conferences, opportunities to present, etc.

Councils could make more of a direct link between community-building among cohorts of awardholders and long-term capacity-building:

For Research Councils in a sense it's a missed opportunity; they have a captive audience with people getting interdisciplinary degrees, they are so grateful to be doing it, that if a Council really wants to build up capacity they could reach out to this group and keep engaging them in more ways

The Councils are missing a trick if they do not keep tabs on people they fund in this way, maybe get them back in the system to do other things

3. Interdisciplinary capacity-building and career path improvement

Research Councils need to provide funding for capacity-building at all levels. The challenges of evolution, of academia changing to embrace some degree of interdisciplinarity are appreciated, as is the Councils' role with this sort of scheme. Interviewees emphasise that capacity-building pivots on the existence of viable interdisciplinary career paths so Research Councils need to ensure career opportunities for interdisciplinary researchers:

There needs to be joined-up thinking in the Research Councils as to how to help somebody piece something together to continue being interdisciplinary throughout their career....there are real serious issues, there are gaps between schemes and that makes it very difficult in career planning. All can be lost if somebody gets going in interdisciplinarity and then has to go take a job within a discipline just to work for somebody else. The Research Councils might almost need to think of two career paths because you need both, you need people in

"You cannot have medicine without these sorts of social questions and the other way round....if you look at the way society is moving there is no going back, you are going to have to have people talking across these areas."

"Generally, it's a brilliant scheme. I love it!" "This scheme is really, really, really valuable." "It's an excellent scheme." "It does take work but it's worth all the investment in it. It works well." "Thank goodness for this interdisciplinary scheme!"

"I do not think you get innovation by sitting in a silo"

"It really is right for funding research councils to start from the ground and prepare PhDs and so on and have interdisciplinary fellowships all the way through."

"if you provide funding, people will flow towards it"

disciplines, but you also need people who can move about between disciplines and tackle these complex problems.

Even beyond the postdoctoral stage, a recommendation is that Research Councils could fund small grants and/or stage-appropriate ESRC/MRC Career Development Awards as follow-on to help people maintain their independence and continue to develop their interdisciplinarity, rather than slipping by default (and the need for income) back into a discipline⁷⁰.

4. Applications/assessments

Maintaining a focus on genuine interdisciplinarity is seen as especially important. The Research Councils were urged to select for genuine interdisciplinarity when reviewing applications, avoiding proposals that only pay lip-service to interdisciplinarity. A suggested test for selection panels was to ask if an application aims to investigate an area about which both ESRC and MRC would – individually – be “unsure”. Research Councils were also urged to provide clear guidance to applicants and to reviewers, for example as to the relative degree of new research versus writing that postdoctoral applicants should include. It was also seen as important to be able to give proper weighting (separate scoring) specifically to the student (particularly since these students are often particularly self-defining). A complementary suggestion would be to sometimes allow a supervisor to make an application for a good idea, then appoint a student—although generally the student emphasis is very well-regarded (see footnote 77 in Section 5).

“with referees you’re carrying a whole body of dead people who are still convinced of just single disciplinary approaches and yet who are still involved in reviewing or assessing interdisciplinary proposals”

5. Operations, flexibility, communications

For the most part, operations did not attract new recommendations. However, in general the Research Councils were urged to show flexibility. A few problems have arisen (e.g. illness, timing of field trips, language courses or professional visits) where more flexibility was desired^{71,72}. No-cost extensions could be helpful for bridging situations. An important area of flexibility might lie in tailoring very carefully any requirements for Masters degrees. Flexibility might also extend to recognition of subtleties among prospective supervisors (e.g. some/many are themselves inherently interdisciplinary, not mono-disciplinary). Interviewees often showed awareness of a difference in culture between the two Councils. ESRC was praised for its flexibility and emphasis on building skills such as communication skills for various outlets.

Research Councils are encouraged to improve communications. At least one awardholder felt unable to reach a Research Council to ask questions about her award and suggested that Councils have some mechanism to ensure that communication is working at all hosting departments. A supervisor pointed out that no one had let him know about the postdoctoral scheme opportunities for his Scheme postgraduate; he found out only by chance. Providing some sort of specific Scheme manual for awardholders and a guidance document regarding interdisciplinary supervision to supervisors/mentors at the beginning of an award could be positive steps – as could either hosting the sort of pro-active community-building discussed above and/or alerting awardholders to relevant masterclasses.

⁷⁰ Access to journals for publishing is also important to career-building. An interviewee who is co-founding an expressly transdisciplinary journal praises ESRC for encouraging publication in open access journals, which she sees as where much of the cutting-edge interdisciplinary work can be found.

⁷¹ The point was made that the timed structure of 3 years for a PhD seems to work better with a laboratory-based model than when field trips are needed.

⁷² The Dorothy Hodgkin’s Scheme of the Royal Society was cited as showing good practice in flexibly accommodating personal circumstances (although ESRC was praised for working out a maternity leave).

6. Financial points

Specific points raised for the Councils' attention include the need for project funding that can cover research costs (without depending upon supervisors' budgets, for example). This can be especially important for interdisciplinary students, who may need to conduct small bits of two sets of methods, at double the usual cost with no economy of scale. An example of good departmental practice, that might be of interest to Research Councils as add-ons to an award, is providing each student with money to invite a visiting researcher and organise their visit, and also to set up interdisciplinary workshops or mini-conferences with postgraduates from various departments around a particular research problem. And, of course, interdisciplinary students may need to attend multiple sorts of conferences, which carries a cost⁷³.

Related to awareness of costs for these projects would be appreciation of how difficult it can be to complete an interdisciplinary PhD in just 3 years, when people need to learn about (at least) two disciplines. The time can be protracted especially if either ethics approvals and so on need to be secured and/or if field work is involved (even when, tactically, early project planning is done during a Masters to allow the PhD student to hit the ground running).

"People
need
room to
go outside
the box"

Summary of findings: Lessons learned and further development

Particular strengths of the Scheme included access to funding for an individual/topic that would have fit neither research council's own remit; the novel intellectual foci (benefiting supervisors/mentors as well as awardholders) and ensuring commitment to interdisciplinarity among all parties. There were few perceived weaknesses although one practical problem cited was access to patients, in particular the time taken to gain ethics approval. Common interdisciplinary challenges such as the relative status of component disciplines and the problems of finding suitable PhD examiners were also raised. The key benefits for researchers engaging in interdisciplinary research between the social and medical sciences have been intellectual and the ability to tackle complex, multi-dimensional research issues. Some problems were highlighted around career development. Virtually all respondents said that the Scheme should be continued. A range of both generic and specific lessons for awardholders, their supervisors and mentors and the Research Councils that can be applied to the current scheme and the development of interdisciplinary studentship schemes in other areas were proposed. Suggestions for Research Councils highlight community-building activities and guidance, capacity building and career path improvement.

⁷³ There may be an issue with the fact that clinician salaries are so much higher some individuals may not want to join the Scheme, but this has been debated before.

5. CONCLUSIONS AND RECOMMENDATIONS ON FUTURE SUPPORT

5.1 Evaluators' conclusions

These Conclusions and Recommendations draw principally upon the various lines of evidence collected for this Evaluation (as summarised at the end of each sub-section in the preceding analysis), but are also informed by previous evaluations (e.g. of ESRC's Postdoctoral Scheme and the ESRC/NERC Interdisciplinary PhD Fellowship Scheme), learning from other schemes (e.g. the American NSF IGERT) and the Evaluators' long track records of involvement in interdisciplinary initiatives. We would note that interdisciplinary research is challenging and highly demanding of time and effort, yet those driven to pursue it often remain enthusiastic and committed. Particularly since the foci of attention are often of relevance beyond academia, there is real potential for impact-generation as well as for excellent research. Our premise is that Research Councils stand to gain a great deal from investment in interdisciplinary capacity-building. We are keenly aware of the need for individuals to be able to pursue satisfying careers if they are to continue to be innovative in this way. We thus underscore the value of the Scheme but also suggest going beyond this investment to gain even more significant return.

The Scheme is **building capacity** by generating individuals of high calibre who are capable of continuing to undertake interdisciplinary research in areas of potential interest to both the Research Councils involved. Whether or not the academic context of the future allows or encourages them to do so remains to be seen.

As a return on investment in the Scheme from 2004 to the present, it appears that the quality of awardholders (as judged by supervisors and mentors) is – at least – comparable with the quality of conventionally supported postgraduates and fellowships. Furthermore, **outputs** such as theses and articles to date appear to be – at least – of the same quality, albeit often appearing in a range of types of journals, not all of them mainstream in a mono-disciplinary sense. Some prestigious fellowships and academic posts have been secured as additional **outcomes**, even though most awardholders are still in post or only recently completed their award.

Going beyond the touchstone of comparability in quality, these awardholders have often worked in innovative ways, such as taking a method or approach from one discipline and applying it to the dataset or question of another. Contributing to this innovative capacity, awardholders have acquired individualised **portfolios of skills**, each drawing from at least two fields. Along with skills, many awardholders possess or have acquired certain personal abilities, such as self-determination, openness to alternative perspectives, communication ability and social skills.

Arguably, such attributes can contribute not only to interdisciplinary productivity in **academic impacts** but also to effective **knowledge exchange**. Frequently driven by a passion to tackle a complex problem involving health and society, awardholders may well be more inclined in future to engage in knowledge exchange and the generation of **non-academic impacts** than would a random sample of counterparts. There is thus potential to encourage further this sort of capacity-building within the awardholders.

Most important would be the availability of Research Council funding for those pursuing interdisciplinary work in the future. Sufficient institutional forces (e.g. conventional university structures, hiring requirements, UK-wide RAE/REF pressures) exist, along

with challenges of time and effort inherent to interdisciplinary research, that without clear career pathways, many individuals may be forced to slip back into (only) mono-disciplinary work. It is noteworthy that many supervisors/mentors are already interdisciplinary (and may feel that this award endorses or expands upon their approach); others engage in interdisciplinary collaborations in part as a result of participation in this Scheme. The Research Councils might wish to make use of the experiences these supervisors and mentors have gained, perhaps by utilising them as reviewers and identifying individuals open to interdisciplinarity who could serve as external examiners or more generally members of networks for awardholders.

Although nearly half of the awardholders sit in four institutions, so are unlikely to feel “lonely” on a day to day basis, nonetheless all the awardholders could benefit from a broader sense of community – in which they can share a special sense of identity, challenges and goals. Facilitating the growth of such a community could allow the Research Councils to capitalise on their investment by increasing the likelihood that interdisciplinary communication, work and innovation will continue. Thus the Scheme has definitely made a start at building interdisciplinary capacity; will it go further and help consolidate an interdisciplinary community?

Other policy-level questions exist for Councils, primarily concerned with concentration versus diversity of awards. Is the concentration of nearly a third of awards in just two institutions the best way of creating long-term change in the academic landscape? Is the high concentration of awards in psychology appropriate and does the frequently identified bridge “across” academic and clinical psychology span a sufficient interdisciplinary “distance”?

Generally, **operations** of the Scheme appear satisfactory, but guidance on criteria such as genuine interdisciplinarity, increased communication with Councils and enhanced flexibility would represent improvements. It is clear that different approaches to the Scheme, even different Council cultures, came into play when the management of the Scheme’s competition was rotated⁷⁴. Rotation of the competition can have implications for guidance (prioritisation) regarding genuine interdisciplinarity, and selection of reviewers, and so on. Would keeping the administration, including competition management, of the Scheme in one place – perhaps even centrally, with RCUK – allow not only for continuity but also, crucially, for considered evolution of the Scheme over time? More broadly, could more learning take place across various cross-council interdisciplinary capacity-building schemes?

5.2 Evaluators’ recommendations

Key recommendations

1. The availability of Research Council funding for those pursuing research excellence in interdisciplinarity is paramount. A central recommendation is thus to **continue the Scheme**, for both postgraduate and postdoctoral fellows. It clearly funds work (and individuals) that would not receive funding from either Council’s conventional streams.
2. If Research Councils genuinely wish to see interdisciplinary research as part of the UK’s academic landscape, a vital recommendation is to continue to **provide and expand funding opportunities and facilitate career paths** for interdisciplinary researchers, **ensuring that they are not disadvantaged by existing funding schemes**. Ability to access funding and recognised kudos such as postdoctoral fellowships are critical stages in the life course of interdisciplinary individuals, yet

⁷⁴ For example, articulation of interdisciplinarity, which was developing during the early years’ Panel deliberations, seemed essentially to be dropped from MRC’s guidance with the Scheme mainstreamed instead into standard MRC fellowship application forms.

the general experience remains that interdisciplinary applications to schemes that are not specifically designated 'interdisciplinary' tend to suffer unless reviewers and assessment panels are given specific instructions as to the legitimacy of an interdisciplinary approach. This also requires the Research Councils to be more knowledgeable about the suitability of the reviewers they select to assess interdisciplinary proposals⁷⁵.

3. Because interdisciplinary research is inherently challenging, and Early Career Researchers (ECRs) are often somewhat alone in their interdisciplinary pursuits, Councils should **support and facilitate professionalisation processes such as community-building**⁷⁶, with opportunities to learn about and share issues regarding interdisciplinary research and related publication or career strategies, as well as to form life-long networks.

Detailed recommendations

4. Consider deliberately broadening the interpretation of "interdisciplinary" for this Scheme and pro-actively marketing the Scheme to a broader range of disciplines and sub-disciplines.
5. Consider conducting think tanks to identify additional problems, priority areas or challenges that could be served by ESRC/MRC interdisciplinarity and publicise these possibilities to inspire thinking among prospective applicants. (In addition to helping the Research Councils tackle important challenges, this could also help to broaden the range of high-calibre applicants from across institutions and disciplines, if that is a desired goal.)
6. Consider reverting, at least in part, to allowing individual students to drive some proposals and continue to provide mechanisms that allow student quality to be assessed (e.g. consideration of references). This joint package model (student, supervisor, problem, institutional context) would allow reviewers to seek balance across the components – in line with clear guidance given. Most genuinely interdisciplinary early career researchers are evidently self-driven; the Scheme would benefit by including opportunities for the passion and aptitude of such individuals to be considered⁷⁷.
7. Provide clearer guidance (to prospective applicants/supervisors/mentors, reviewers and assessment panellists) as to what is being sought, in terms of genuine interdisciplinarity, postdoctoral balances of writing and new research, etc.
8. Ensure that selection panels are keenly aware of, and behave consistently in accordance with, the particular interdisciplinary goals/requirements of this Scheme.

⁷⁵ Ideally, so as not to be unduly disadvantaged by the peer review system, interdisciplinary proposals should be sent out for review with clear guidelines to relevant individuals, drawn from a pool of specialist reviewers with expertise in interdisciplinary research, and then assessed by a panel which has been well-briefed and includes at least one member with such expertise.

⁷⁶ Again, this resonates directly with the findings of the ESRC/NERC evaluation: If Research Councils wish to become extremely significant players in embedding interdisciplinarity into the future landscape of academia, they need to go further in building and legitimising an interdisciplinary community.

⁷⁷ The Councils moved to a supervisor-led application process for studentships this year as it was apparently felt that this would improve the interdisciplinary quality of applications. However, as this information was not provided to the evaluators until the end of the evaluation study, it has not been possible to explore this issue further. Our final focus group emphasised the value of being able to consider the particular individual student as a key component of the application 'package' consisting of supervisor, student, topic and context. One suggestion made was that student-led applications could be considered directly from students who had already completed a Masters degree and were only seeking the +3 element of the award. The Councils may also wish to consider whether lack of consistency with other studentship award schemes is an issue (for example, for the ESRC CASE studentship supervisors apply without a named student and then advertise for a suitable candidate upon award).

9. Make greater use of current/past supervisors and mentors who are comfortable with interdisciplinarity in assessment of proposals at various stages.
10. Provide guidance to supervisors and mentors related to the interdisciplinarity of their student/fellow. (This could, for example, consist of a short guidebook drawing on lessons learned captured by this evaluation or indeed the opportunity to attend a workshop for supervisors/mentors who seek additional guidance.) Include in this guidance for external examiners of interdisciplinary PhD theses.
11. Provide contact information on Scheme supervisors and mentors to facilitate interaction, placement of awardholders and selection of examiners.
12. Hold annual community-building Scheme conferences, bringing together postgraduate students and postdoctoral fellows across year-cohorts. Place explicit value on professionalisation processes⁷⁸ for interdisciplinary individuals as similar to, but a bit different from, those through which mono-disciplinary individuals mature. In this vein, consider sending awardholders to even broader interdisciplinary events⁷⁹ across multiple schemes or areas.
13. Communicate with awardholders so that they feel part of a distinctive community. Provide them with each others' contact details/ topics to facilitate networking.
14. In terms of operations, show flexibility when legitimate requests are made (e.g. field work, multiple conferences, language-learning, no-cost extensions); endeavour not to require Masters degrees that do not fit the individual's personal research goals.
15. Ensure that the Scheme retains both continuity and the opportunity to learn and evolve. Consider some 'out-of-the-box' thinking regarding the administration of cross-council interdisciplinary Schemes in general. For example, administration could be managed in a central way, perhaps by RCUK, with dedicated administrators experienced in the particular requirements of interdisciplinary research and research training. In light of trends toward multi-Council programmes such as Living with Environmental Change (LWEC) and Rural Economy and Land Use (RELU), RCUK might even consider (i) the establishment of an interdisciplinary reviewers' college (consisting of individuals expert in a range of interdisciplinary areas) to address the common challenge of finding reviewers who understand and are sympathetic to interdisciplinary research and (ii) facilitating the development of a wide cadre of interdisciplinary early career researchers by hosting community-building events across different interdisciplinary capacity-building schemes and programmes; there would also be scope for wider network development, including supervisors, mentors and external examiners. A first step might be the development of an Interdisciplinary Portal analogous to the current RCUK Knowledge Transfer Portal⁸⁰.

⁷⁸ Professionalisation is of course key to the maturation of academic leaders-to-be and their ability to contribute to the future of academia, whether interdisciplinary or not. Our evaluation of the ESRC Postdoctoral Scheme, for example, had as a key conclusion: "Perhaps its greatest contribution in the short term, however, is the empowering of excellent early-stage researchers with top-level professionalisation skills and the ability to produce top quality publications, thus enhancing their chances of securing desirable posts. The scheme does indeed shorten strategically the early career development stage of the Fellows. By helping in this way to embed Fellows in their academic fields and networks, the scheme nurtures the next generation of leaders and strengthens the foundation for economics and social sciences in the longer-term. The scheme, in other words, contributes to strategic capacity building."

⁷⁹ Such as the interdisciplinary Masterclasses already being funded by the ESRC.

⁸⁰ www.rcuk.ac.uk/innovation/ktpportal/default.htm

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