Evaluation of the PhD Plus pilot scheme

June 2011
Evaluation of the 2009/2010 EPSRC PhD Plus pilot scheme

Report of the interim evaluation panel meeting and event held at EPSRC, Polaris House, Swindon on the 19th November 2010.

Executive Summary

The £10 million PhD Plus scheme is a 2 year pilot programme funded by EPSRC aimed at developing the best EPSRC supported students beyond the end of their PhD to help them to launch a successful career in research. The first round of PhD Plus funding was assessed as part of an interim evaluation event which also brought participant universities together to network and to share experiences and best practice from being involved in the pilot. The future of delivering this kind of support was also considered by the evaluation panel.

The panel concluded that:

- PhD Plus support had been clearly valuable to some of the pilot universities involved and had made a difference to individual recipients. The flexibility of the pilot had allowed universities to adopt a variety of approaches. It was also observed that those universities with smaller allocations to work with may have been more creative in how they utilised the funds and subsequently got better value as a result.

- In future all universities holding an EPSRC Doctoral Training Grant (DTG) should be able to provide flexible PhD Plus support from these resources.

- The purpose of PhD Plus support needs to be clear. It is essential that the award is only available to those who have submitted their PhD thesis (and ideally have had their viva) and not used merely as an opportunity to continue/complete PhD work. PhD Plus should actively be used to develop the careers of early stage researchers. This may include ensuring work from their PhD is published but should also include something new that takes their scientific career to the next level. PhD Plus should be used to encourage adventure, for example through changing direction or travelling.

- More needs to be done to engage with, hold on to, and track the individuals already supported through PhD Plus. There is a role for both EPSRC and the Universities.

- Uniform branding is important and a move away from the PhD Plus label is recommended as it implies the award is still linked to being a student.

- Universities should advertise the scheme externally and encourage applicants to move organisations and into new research areas etc (i.e. cutting the umbilical cord and move away from supervisor).

- Induction, mentoring and career development planning are important elements of PhD Plus support to be delivered by universities. Award holders should have a mentor (who is removed from line management – and not their former supervisor).

- A rigorous selection process is important and applicants should be interviewed. Universities should also provide support to individuals in preparation for PhD Plus application. There should be an expectation that the award holder will deliver outreach as part of their support.
1. Introduction and background

1.1 In 2009 EPSRC initiated a 2 year pilot programme called PhD Plus which provided a new £10 million funding stream within Doctoral Training Grants (DTG) intended to help universities retain and recruit the best PhD students receiving EPSRC support to increase the impact of their PhD, and to improve retention of the very best students in research careers. A trial group of universities was asked to selectively target the most able students completing their PhD in 2009 and 2010 and to use the funding to develop them beyond the end of their PhD providing up to 1 year’s additional support to help launch a successful career in research.

1.2 The focus of the scheme had three distinct goals, supporting the individual; university and EPSRC’s strategic objectives.

1.3 The trial group of universities was invited to take part in PhD Plus based upon their previous participation in the International Doctoral Scholarship (IDS) scheme. Details of the 14 PhD Plus participant universities can be found in Annex 1 along with the award allocations made in total and for each funding round. The allocations were based on the relative level of EPSRC research income held by each participant university.

1.4 An example of the PhD Plus offer letter sent to participant universities can be found in Annex 2.

2 Evaluation purpose and process

2.1 The key objectives for the interim evaluation event were as follows:

- To enable the independent panel to assess the first round of PhD Plus funding against the scheme objectives.
- To bring together participant universities to network, share experiences and best practice of delivering PhD Plus.
- To ascertain the future of delivering this kind of support.

2.2 The formal Terms of Reference for the event and membership of the evaluation panel can be found in Annex 3.

2.3 Participant universities were requested to send a representative to the evaluation event, who had knowledge of the university’s strategy for PhD Plus and would be able to provide an overview of the support delivered within the university. To assist in this process, EPSRC required the universities to produce a poster summarising the participation and university approach to PhD Plus which the representative could discuss.

2.4 To feed into the evaluation, participant universities (and award recipients) were also asked to provide specific information in advance on how the first round of PhD Plus funds had been utilised and experiences/ thoughts so far regarding PhD Plus. There were three distinct elements to the information gathering exercise:

- Participant university questionnaire – to provide the university perspective.
- Individual award proforma – to provide specific details of awards (completed by the university.)
Online PhD Plus survey for completed award recipients – to provide the individual perspective.

2.5 Blank copies of the questionnaire and proforma can be found in Annex 4. The information returned through these routes formed the basis of the review and evaluation event and as such it was highlighted to participant universities that the panel would be also be taking into account the quality of data returned.

2.6 Each panel member was assigned 2 or 3 participant universities to which they were responsible for taking the lead on in reviewing during the meeting and evaluation event.

2.7 Prior to the external evaluation event, the panel convened to clarify objectives for the day and evaluate the reported outputs from the first year of the pilot. Each panel member briefly spoke to each of the universities they had been assigned to; summarising the outputs; sharing their initial impressions and highlighting any good examples or issues/areas of concern they had identified. The evaluation panel agenda can be found in Annex 5.

2.8 The external event began with presentations from EPSRC staff. This was followed by a networking and poster session in which university representatives engaged with each other and panel members; who worked in pairs to question the representatives on their university’s approach to PhD Plus, and review the posters/universities they were assigned to. Part of this session was open to EPSRC staff to attend. The agenda for the external event and full list of university attendees can be found in Annex 6. Due to unforeseen circumstances the universities of Liverpool and St. Andrews were unable to send a representative to this event but still provided posters and information to display.

2.9 The panel reconvened at the end of the external event and began by briefly reporting back on their discussions with the university representatives during the poster session. This was followed by a general discussion which culminated in the panel providing a clear steer and recommendations to EPSRC as to the future of PhD Plus.

3 The university perspective on PhD Plus

3.1 In the first £5M round of PhD Plus funding, the 14 participant universities had in total supported 135 recipients (over two thirds of whom were male) through a range of approaches and over different timescales.

3.2 Across all universities the total variation in length of support ranged between 1 – 12 months. Most universities offered awards of varying duration to meet individual circumstances whereas some provided a fixed 12 or 6 month blanket award at a set level of funding for all the individuals supported.

3.3 Individual awards ranged from £3K to £85K depending on the duration of support. Most universities provided support in the range of £20-50K which generally reflected awards of between 6-12 months duration.

3.4 Over two thirds of those funded received some form of researcher support (e.g. salary, research resources, travel etc.) while just under a third were awarded a type of fellowship.
3.5 Most universities indicated that stimulating creativity had been a feature of the support they had provided to varying degrees. Examples given included putting research into an industrial context; networking and interacting with interdisciplinary audiences.

“"A University-level approach enabled us to ensure that high quality candidates with high impact proposals were supported”

“"We used an open competition to ensure that PhD Plus support received widest possible visibility within the University”

“"Open competition but awards were prioritised for applications in strategically important areas”

Some candidates were judged on the effectiveness of their proposed plans for outputs, knowledge transfer and outreach as well as their potential, future ambition and intent to develop a successful research career. Demonstration of international and cross disciplinary thought and intention were also rated highly in some assessments.

3.6 In terms of process, nearly all of the participant universities managed PhD Plus at a strategic university level and ran open competitions. On the other hand, a small number also strategically identified target recipients through department recommendations/nominations etc. and by encouraging appropriate candidates to apply.

3.7 Universities applied a number of different criteria to help them identify who were ‘the very best students’ to support through PhD Plus. Underpinning research excellence of the candidate, other factors taken into account included previous success during PhD; intellectual independence and the ambition of their project plan; potential impact of the support; and fit to university strategy and current research areas.

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3.8 In terms of delivering the first round of PhD Plus funds provided by EPSRC, just over half of the universities were able to spend their full allocations. Those that didn’t commonly attributed this to under spend on consumables as well as award recipients withdrawing at late notice or leaving early to take up jobs.

3.9 Although not all funds were allocated, a third of universities indicated that they were able to leverage additional resources to maximise the PhD Plus funds available from EPSRC; sourced from such areas as DTG, research grant, industry and internal department funds as well as in kind contributions through laboratory and equipment access etc.

In these cases there was a firm belief that PhD Plus had been a strong influence in encouraging the leveraging of funds for use in this kind of activity.

3.10 The PhD Plus pilot had been presented to universities as a relatively blank canvas; allowing them to decide the best way of providing this support at a local level. This flexibility was uniformly welcomed.

“PhD Plus funding enabled matched funding from Intel and Microsoft for two of the projects. This would not have been possible without PhD Plus support. The projects led to establishing strong industrial links for the recipients and the University”
Although some negative aspects were identified with respect to fixed spend requirements for each round of funding inhibiting flexibility; uncertainty surrounding the scheme’s future (and relative administrative effort involved) as well as limiting eligibility to those previously supported by EPSRC.

“The flexibility of the grant has been useful for the university, as it has allowed us to use the grant to respond to the needs and ambitions of the excellent candidates that were identified in the open recruitment process. The funding has been used by different individuals in different ways, according to the nature of their work and their project goals. The flexibility of the grant also allowed us to take advantage of unexpected opportunities. In addition to their initial allocation of funding, the 2009 cohort were given the chance to bid for additional funding halfway through their placements and as such, provided that their applications were well justified, were enabled to develop their project plans in the light of new discoveries and new partnerships”

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On balance the flexibility is good. The upside is that we have been able to use the funds in a way that we believed maximised the benefit in our local circumstances. The downside is that we have had to develop policy and processes ab initio, which may not have been sensible given the relatively modest funding – particularly if the scheme is not continued”

3.11 There was unanimous agreement that the first round of PhD Plus funding had added value to the universities and individuals involved. As well as supporting the core objectives, it was reported that PhD Plus had also provided a ‘bridging’ post in research; enabled industrial and international collaborations and networks to be developed; and presented award recipients with the opportunity to build upon their research/ publish material that otherwise may not have been possible.

It is interesting to note that prior to PhD Plus the majority of universities did not independently offer this kind of support to its PhD students but most would consider to do so in the future as a result of their involvement in the pilot.

“In many cases recipients have reported that research developments have been made and work published that would not otherwise have been accomplished. A number of networking opportunities and new collaborations were also made possible contributing to recipients’ career development and in cases leading to recipients being offered postdoctoral positions at other institutions. Any number of the awards we made would make excellent case studies for the added value yielded by the PhD Plus award scheme”
3.12 Based on the experiences of the first year of the pilot, nearly all of the participant universities evolved their approach to the second round of funding. Lessons learnt and things being done differently include advertising and recruiting earlier to attract the best of the eligible cohort; improved training events for recipients; taking tax advice; revising application processes to align with RCUK changes to impact; and increasing the frequency of calls (quarterly instead of annual) to ensure that the funds are being fully utilised.

3.13 Most universities could identify some approaches to best practice although it was highlighted that this was difficult to judge in isolation and only likely to become apparent now through evidence. One university reported that open recruitment (internally and externally) enabled them to successfully attract high quality candidates; while another university strategically targeted those PhD students it felt was most likely to gain maximum benefit. Some universities also spoke to each other and exchanged information about the scheme.

3.14 The participant universities reported that over half of the 135 recipients supported through the first round of PhD Plus were now following a research career path in academia while around 10% had moved into industry – the vast majority of universities felt that PhD Plus had played a significant role in launching that career.

3.15 All participant universities either agreed or strongly agreed that the core objectives of PhD Plus had so far been achieved through the support provided.

4 The awardee perspective on PhD Plus

4.1 Approximately 44% of the first year recipients (60) completed the short online anonymous survey – the outputs indicated a strong endorsement that PhD Plus had delivered on its objectives and all the individuals felt they had benefitted from its support. Having time; opportunity; independence; and being able to build upon unfinished PhD work were all common themes captured within the responses.

4.2 Those who responded were asked to suggest what they felt were the most important tools required to help develop a successful career in research. It can be seen from Figure 1 that...
research resources and networking funds were the most popular areas identified. ‘Other’ suggestions included understanding how research is funded; communication skills; and having the ability to supervise and be involved in the development of others.

![Figure 1: Tools required to help develop a successful career in research](image)

**4.3** Nearly 87% of the respondents felt that their PhD Plus experience had been different to that of their PhD. The main reasons suggested for this included having a different status (i.e., being member of staff not student); more independence and responsibility; and being able to collaborate with other researchers (not just PhD supervisor.)

Similarities identified included actively applying the knowledge and skills learnt as a PhD student.

**4.4** Most respondents either agreed or strongly agreed (85%) that they had been well supported by the university through their PhD Plus experience. However, some individuals highlighted that they had felt isolated; had continued to be treated as a student; and had not been given adequate administration or financial support.

**4.5** Following the end of their PhD Plus support, well over half of the 60 respondents indicated that they were continuing their careers in postdoctoral research positions. Other career paths being followed included junior research fellow; experimental consultant; faculty manager/scientific officer; and science teacher.

“More independence, opportunity to work on projects of interest to me rather than solely those of interest to my supervisor - PhD Plus has required applying and further developing skills I already possess, rather than learning new ones - Ethos & emphasis are different. During the PhD, everything was directed towards producing a thesis, whereas during PhD Plus the emphasis was on publishing, disseminating and maximising the scientific return”
4.6 There was strong endorsement that PhD Plus had helped those individuals to launch their research career. Again having time and opportunity to gain experience as an independent researcher were highlighted as key factors in delivering this.

“Allowed time to develop own ideas, breathing room to survey the academic landscape and choose a career carefully”

4.7 Award recipients also commented on other aspects of their PhD Plus experience, including comparisons with international PhD training and experience; the need for clearer remit guidance from EPSRC and scheme standardisation across universities as well as improving cohort identity. The point was also made that referring to them as ‘students’ during the process sent out the wrong message to individuals as to their status and role.

“Given UK PhDs tend to last 3-4 years I like that PhD Plus allows UK students to gain more experience – perhaps gaining a closer level with that of PhD students in other countries”

“It needs to stay flexible in terms of what purpose the candidate wants to use the funds for, as different candidates will have different priorities at that stage in their development”

“It might be worthwhile to have more events for PhD Plus students in order to forge a sense of purpose in achieving the stated aims of the award”

5 The Panel findings

5.1 The panel were asked to provide a clear steer and recommendations as to the future of PhD Plus based on the following key questions and information for context provided to them by EPSRC:

• These funds were specifically aimed at bridging the career of the PhD student rather than supporting the student to get to PhD level - has the investment in PhD Plus been justified and has it been a sufficiently good use of tax payers’ money?

• If so, what have stood out as the best ways to support and achieve this?

• Not only is it a good thing but is it the right thing to do given that in future if PhD Plus continues beyond the pilot stage, it will not have a dedicated budget but will be funded out of Doctoral Training Grant resources – do you feel EPSRC has a mandate to continue this type of support through existing postgraduate training resources?

Hence the panel’s attention was firmly focused on whether PhD Plus had added value and made a difference as well as considering the appropriate balance between providing this type of support against PhD level training; and if it should be rolled out as normal business.
5.2 A summary of the panel’s initial analysis of the reported outputs from the first year of the pilot is as follows:

- The panel highlighted initial disappointment with a number of university returns due to reasons such as limited information provided; vague and woolly returns which were low on outputs. In these cases, it was not clear how PhD Plus had made a difference within the university or had been good value. There were also some administration and management issues identified and it was noted that some approaches and systems seemed more inflexible than others (i.e. providing fixed term fellowships.)

- That said however, the panel were also impressed by a similar number of university returns in which they had identified key positive elements including specific outputs and good examples; evidence that the scheme had made a difference (i.e. used it to build better industry links); encouraged interdisciplinary working; good interview, assessment and induction procedures; and sensible management. Good mentoring and leveraging of funds were recognised as important features that had been utilised by some but not all universities. The panel also noted the benefit of advertising externally and recruiting from other universities.

- The panel considered the different approaches taken and how well participant universities had embraced and engaged in the pilot scheme. For example, had their identified a specific scheme owner? In some cases it was felt that the university had got more out of the pilot than individual recipients. It was suggested by the panel that working with universities, EPSRC needs to be more pro-active in directly tracking and providing ownership of the individuals supported (i.e. cohort identity).

- Key lines of questioning for the panel during the poster session included a focus on outcomes; selection process; mentoring and coaching aspects as well as cohort management.

5.3 It was acknowledged that the poster and questioning session was very helpful in providing the context, and full picture to understanding how participant universities had approached the scheme. In many cases it helped to dispel some of the panel’s concerns which had been initially raised as a result of the university returns analysis.

5.4 A summary of the panel feedback following the poster and questioning session is as follows:

- The general impression was positive and the panel highlighted key aspects of the support provided. This included the importance of having mentors (who were not supervisors); delivering outreach to schools; holding the philosophy that PhD Plus did not mean ‘PhD longer’; offering knowledge transfer training and activities; and providing scheme continuity and identity by inviting previous award recipients back to welcome new recipients.

- Giving some specific examples, the panel were very impressed with the way that Lancaster University had utilised PhD Plus and developed industrial links through this involvement. The University of Sheffield was also highlighted for their excellent scheme branding and cohort identity. Copies of the posters submitted by Lancaster University and the University of Sheffield are available in Annex 7.
• In some cases, the panel had felt that there had been missed opportunities and there were some issues identified around the status of the award recipient. It was emphasised that these individuals were not students although in some circumstances were treated as such (i.e. supervisor still wrote proposals.) The status of the award recipient had also given rise to potential tax and intellectual property issues which had been approached differently dependent upon the university’s position on this.

• The panel noted that in some cases PhD Plus had been interpreted as a continuation of the PhD (i.e. supervisor was mentor) and as a result had made it more difficult for external candidates who had been recruited through open competitions.

• It was reported that support through PhD Plus made it possible for the full value of the PhD to be obtained. As such a number of universities indicated that regardless of the outcome of this evaluation and future of PhD Plus, they would be looking to provide this kind of support moving forward.

6 Evaluation summary and recommendations

6.1 Based on the evaluation event and information provided; the panel were able to provide a clear steer to EPSRC as to the future of PhD Plus, identifying best practice and making the following recommendations.

6.2 Summary – the panel acknowledged that PhD Plus support had been clearly valuable to some of the pilot universities involved and had made a difference to individual recipients. The flexibility of the pilot had allowed universities to adopt a variety of approaches. The panel also observed that those universities with smaller allocations to work with may have been more creative in how they utilised the funds and subsequently got better value as a result.

6.3 Future direction – all universities holding an EPSRC Doctoral Training Grant (DTG) to be able to provide flexible PhD Plus support from these resources. Using in the order of 5-10% of the DTG for PhD Plus was considered a reasonable limit but EPSRC should model this to determine the appropriate level.\(^1\)

The purpose of PhD Plus support needs to be clear. It is essential that the award is only available to those who have submitted their PhD thesis (and ideally have had their viva) and not used merely as an opportunity to continue/complete PhD work. PhD Plus should actively be used to develop the careers of early stage researchers. This may include ensuring work from their PhD is published but should also include something new that takes their scientific career to the next level. PhD Plus should be used to encourage adventure, for example through changing direction or travelling.

6.4 Cohort management and identity – more needs to be done to engage with, hold on to, and track the individuals already supported through PhD Plus. There is a role for both EPSRC and the Universities. EPSRC have invested in these people and they need to be made to feel part of the EPSRC community. These should be seen as prestigious awards with the recipients acting as ambassadors for EPSRC. The panel’s recommendations included:

- Holding a high profile national event for existing PhD Plus award holders.

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\(^1\) This was subsequently modelled by EPSRC which confirmed an appropriate upper level of 10%.
Writing to existing (and previous) award holders to congratulate them on their award and inform them of future direction of PhD Plus (i.e. send evaluation report).

6.5 **Scheme perception** – uniform branding is important and a move away from the PhD Plus label is recommended as it implies the award is still linked to being a student.² Provision of stipend also enforces this implication so the panel advised that not allowing support to be badged as ‘stipend’ would help make a clear break from the student tag. The panel highlighted ‘EPSRC Doctoral Prize Fellowship’ which was utilised by one of the participant universities, as an excellent example of branding.

6.6 **Best practice identified**

The panel identified the following best practice based on the information provided and through discussions held with university representatives:

- Universities should advertise the scheme externally and encourage applicants to move organisations and into new research areas etc (i.e. cutting the umbilical cord and move away from supervisor).
- Induction, mentoring and career development planning are important elements of PhD Plus support to be delivered by universities.
- Award holders should have a mentor (removed from line management – and **not** their former supervisor).
- A rigorous selection process is important and the panel recommended that applicants should be interviewed. It was also suggested that universities should provide support to individuals in preparation for PhD Plus application.
- An expectation that the award holder will deliver outreach as part of their support.

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² PhD Plus has since been renamed as EPSRC Doctoral Prize in delivering this type of support as part of normal business.
Annex 1: Details of PhD Plus participant universities

<table>
<thead>
<tr>
<th>Participant University</th>
<th>Round 1 award</th>
<th>Round 2 award</th>
<th>Total allocation</th>
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</thead>
<tbody>
<tr>
<td>Imperial College</td>
<td>£684,000</td>
<td>£705,989</td>
<td>£1,390,989</td>
</tr>
<tr>
<td>Cambridge</td>
<td>£681,000</td>
<td>£677,245</td>
<td>£1,358,245</td>
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<tr>
<td>Oxford</td>
<td>£494,000</td>
<td>£543,214</td>
<td>£1,037,214</td>
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<tr>
<td>Southampton</td>
<td>£414,000</td>
<td>£425,905</td>
<td>£839,905</td>
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<td>Manchester</td>
<td>£376,000</td>
<td>£446,012</td>
<td>£822,012</td>
</tr>
<tr>
<td>Sheffield</td>
<td>£434,000</td>
<td>£364,453</td>
<td>£798,453</td>
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<tr>
<td>UCL</td>
<td>£302,000</td>
<td>£407,539</td>
<td>£709,539</td>
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<tr>
<td>Nottingham</td>
<td>£353,000</td>
<td>£355,495</td>
<td>£708,495</td>
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<tr>
<td>Leeds</td>
<td>£264,000</td>
<td>£279,820</td>
<td>£543,820</td>
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<tr>
<td>Liverpool</td>
<td>£286,000</td>
<td>£226,131</td>
<td>£512,131</td>
</tr>
<tr>
<td>Birmingham</td>
<td>£256,000</td>
<td>£220,911</td>
<td>£476,911</td>
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<tr>
<td>St Andrews</td>
<td>£165,000</td>
<td>£140,099</td>
<td>£305,099</td>
</tr>
<tr>
<td>Surrey</td>
<td>£178,000</td>
<td>£110,970</td>
<td>£288,970</td>
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<tr>
<td>Lancaster</td>
<td>£114,000</td>
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<td>£218,217</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>£5,001,000</strong></td>
<td><strong>£5,000,000</strong></td>
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Table 1: Details of 14 PhD Plus participant universities
Dear X

I am writing to invite your university to take part in the 2010 EPSRC PhD Plus pilot programme. This is the second year of a 2 year pilot.

Purpose

PhD Plus is intended to help universities retain the best PhD students receiving EPSRC support to increase the impact of the PhD in terms of publications, KT and outreach etc. and to improve retention of the very best students in research careers. It will target the most able students selectively to provide funding to develop them beyond the end of the PhD providing up to 1 year’s additional support to help launch a successful career in research.

Nature of support

Support should target the top ~10-15% of students and be at a meaningful level (~£50k). The exact nature of the support is being left to the universities to decide within what Research Councils might reasonably be expected to provide. It might take the form of a Prize, a salary, research resources or funding to visit other groups/facilitate KT. It could be linked to universities own resources e.g. a fellowship, to form a bigger package. If there is uncertainty as to whether something is appropriate, the university should consult the EPSRC contact Dr Ben Rendell (ben.rendell@epsrc.ac.uk).

Eligibility

The selected students should have submitted their PhD thesis before support begins and have received support for their PhD studies from EPSRC in the form of Fees and/or stipend or as an EPSRC supported project student.

Duration

Awards may start at any time from April 1st 2010. The period of support is at the universities discretion up to a maximum of 12 months, but funding cannot extend beyond 30th September 2011.

Scheme Costs

The value of support provided to individuals is at the universities discretion subject to the requirements that that support is selective and meaningful detailed above. It is not expected that all awards will be the same unless this is specifically decided by the university.

Responsibility of the awarding university
The awarding university will be responsible for administering all aspects of the award including:

- Selecting suitable students in line with EPSRC’s expectations detailed above
- Ensuring that all support costs awarded are used and accounted for appropriately
- The university will be expected to nominate an Operational Manager for the programme to oversee local arrangements and provide a point of contact for EPSRC
- EPSRC will hold an evaluation workshop towards the end of 2010/11 to which the university will send a representative

Monitoring

EPSRC will need to collect some information on how the funds are used to support evaluation of the interventions made. This will include:

- Host university and department
- Name & contact details for the recipient
- Source and nature of EPSRC PhD support
- Start and end date of PhD Plus funding
- Value of funds provided
- What funds were used for
- Outputs obtained
- Reported benefits from the recipient
- Occupation of recipient following funding

Please note that non-completion of records will be considered within any future allocation.

Award of Funds

EPSRC would like to offer your university funding of £X. This will be provided through a revision to the doctoral training grant X under a new fund heading for “Other support costs”. Funds may be spent at any time during the financial years 2010/11 and 2011/12 up to the end of the DTG. Unspent funds may not be transferred or used for any purpose other than support for PhD Plus.

If your university wishes to take part in the 2010 PhD Plus programme then confirmation should reach me before 7 February 2010.

I look forward to receiving confirmation that you wish to take part in the scheme. In the meantime, if you have any questions please do not hesitate to contact me.

Yours sincerely

Dr Neil Viner
Annex 3: Evaluation event panel membership and terms of reference

Panel membership

The evaluation panel members were:

- Professor Julie Yeomans (University of Surrey) – chair
- Martin Sadler (HP Systems Security Lab)
- Professor Alison Rodger (University of Warwick)
- Professor Nick Tyler (University College London)
- Professor Paul Raithby (University of Bath)
- Professor Colin Snape (University of Nottingham)

EPSRC representatives were:

- Dr Neil Viner, Associate Director Research Capability
- Ms Lucy Brady, Head of Research Careers Strategy
- Dr Maggie Wilson, Head of Research Careers Strategy
- Dr Ben Rendell, Research Capability Manager – panel convenor
- Ms Katarzyna Rachuta, Year in Industry student - observer

Terms of reference

Scheme objectives (three distinct aspects)

PhD Plus is intended to help universities retain and recruit the best EPSRC supported PhD students (UNIVERSITY) to increase the impact of their PhD and to improve retention of the very best students in research careers (EPSRC). Funding is provided to selectively target the most able students and develop them beyond the end of their PhD to help launch a successful career in research (INDIVIDUAL).

Panel objectives for evaluation event

- To evaluate the first round of PhD Plus funding against the scheme objectives – for example, what did the awards make happen that otherwise would not have occurred? Has the scheme made a difference?

- To question the 14 participant universities on their approach to PhD Plus and establish best practice based on the information presented – for example, what approaches are planned for the second round of funding? How has PhD Plus been utilised and which ways does the panel identify as being most successful?

- To make recommendations to EPSRC as to the future direction of PhD Plus – for example, does EPSRC need to be more prescriptive about how the funds should be used? Should we continue to make an intervention in this way?
Annex 4: Blank copies of the questionnaire and proforma

Participant university questionnaire

Section 1: Personal details

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<td>1</td>
<td>Name (title, initials, surname)</td>
</tr>
<tr>
<td>2</td>
<td>Participant university</td>
</tr>
<tr>
<td>3</td>
<td>Current Department</td>
</tr>
<tr>
<td>4</td>
<td>Current Position</td>
</tr>
</tbody>
</table>

Section 2: PhD Plus and the university

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>How many awards have been made/ recipients supported through the first round of PhD Plus funding (up to 30th September 2010)?</td>
</tr>
<tr>
<td></td>
<td>Please complete the accompanying spreadsheet to provide specific details of these individual awards and recipient experiences.</td>
</tr>
<tr>
<td>6</td>
<td>Were you able to allocate all the PhD Plus funds that were provided for this purpose?</td>
</tr>
<tr>
<td></td>
<td>If no, please provide reasons why.</td>
</tr>
<tr>
<td>7</td>
<td>Were you able to leverage additional resources to maximise the PhD Plus funds available from EPSRC?</td>
</tr>
<tr>
<td></td>
<td>If yes, to what extent do you feel PhD Plus has encouraged the leverage of funds to be used for this type of activity?</td>
</tr>
<tr>
<td></td>
<td>If yes, please provide details of where from?</td>
</tr>
<tr>
<td>8</td>
<td>How did you use your PhD Plus support? (Please tick multiple boxes if you used a range of approaches.)</td>
</tr>
<tr>
<td></td>
<td>Has stimulating creativity been a feature of any of the PhD Plus support you have provided so far?</td>
</tr>
<tr>
<td></td>
<td>If yes, please provide details</td>
</tr>
<tr>
<td>9</td>
<td>How did you allocate your PhD Plus support?</td>
</tr>
<tr>
<td></td>
<td>Open competition</td>
</tr>
<tr>
<td></td>
<td>University strategically identified target recipients</td>
</tr>
<tr>
<td></td>
<td>Other (please indicate below)</td>
</tr>
</tbody>
</table>
### Section 3: The PhD Plus pilot

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>a)</td>
<td>The PhD Plus pilot has been presented to you as a relatively blank canvas. Has this flexible approach worked or would you prefer EPSRC to provide a more structured framework to operate within?</td>
</tr>
</tbody>
</table>
|   |   | Yes, flexibility of PhD Plus works  
No, PhD Plus needs more structure |
|   | b) | Please explain your reasoning. |
| 13 | a) | Has the first round of PhD Plus awards made anything happen that otherwise would not have occurred – i.e. has it added value? |
|   |   | Yes  
No |
|   | b) | If yes, please explain in what way it has made a difference, and give examples where appropriate. |
| 14 | a) | Can you identify any negative aspects of PhD Plus? |
|   |   | Yes  
No |
|   | b) | If yes, please provide details and if possible explain how you think they may be resolved. |
| 15 |   | What do you feel is the most important role that PhD Plus provides? |
|   |   | Helps universities retain and recruit best students  
Improves retention of best students in research careers  
Helps individuals launch a successful research career  
Other (please indicate below) |
| 16 | a) | Are any of your first round PhD Plus recipients now following a research career path within your (or another) university or industry? |
|   |   | Yes  
No  
Don’t know |
b) If yes, please indicate the numbers in terms of type of research career path taken.

- Academia
- Industry

17

a) Have you identified any university best practice approaches to PhD Plus so far?

- Yes
- No

b) If yes, please provide details.

18

a) Prior to EPSRC funding through PhD Plus, did you already offer this kind of support to your PhD students?

- Yes
- No

b) If no, has the PhD Plus pilot encouraged you to consider providing this kind of support independently in future?

- Yes
- No

19

PhD Plus is intended to help universities retain and recruit the best EPSRC supported PhD students to increase the impact of their PhD and to improve retention of the very best students in research careers. Funding is provided to selectively target the most able students and develop them beyond the end of their PhD to help launch a successful career in research.

Do you feel these objectives have so far been achieved?

- Strongly Agree
- Agree
- Not Sure
- Disagree
- Strongly disagree

20

If you have any additional comments on aspects of PhD Plus that have not been covered in the questionnaire, please provide them below.

---

Thank you for taking the time to complete this questionnaire.

### Individual award proforma

<table>
<thead>
<tr>
<th>2009 PhD Plus pilot individual awards</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Participant university (please insert here)</td>
<td>1</td>
</tr>
<tr>
<td>Award number</td>
<td></td>
</tr>
<tr>
<td>Name of recipient</td>
<td></td>
</tr>
<tr>
<td>Contact details</td>
<td></td>
</tr>
<tr>
<td>RO where PhD studied</td>
<td></td>
</tr>
<tr>
<td>Source and nature of EPSRC PhD support</td>
<td></td>
</tr>
<tr>
<td>Nature of PhD Plus support</td>
<td></td>
</tr>
<tr>
<td>Host department</td>
<td></td>
</tr>
<tr>
<td>Indication of research area</td>
<td></td>
</tr>
<tr>
<td>Start date of funding</td>
<td></td>
</tr>
<tr>
<td>End date of funding</td>
<td></td>
</tr>
<tr>
<td>Value of PhD funds provided</td>
<td></td>
</tr>
<tr>
<td>Any additional leveraged funding? If yes please indicate value</td>
<td></td>
</tr>
<tr>
<td>What were funds used for?</td>
<td></td>
</tr>
<tr>
<td>Outputs obtained</td>
<td></td>
</tr>
<tr>
<td>Reported benefits from recipient</td>
<td></td>
</tr>
<tr>
<td>Occupation of recipient following funding (if known)</td>
<td></td>
</tr>
</tbody>
</table>
Annex 5: Agenda for evaluation panel members

PhD Plus panel meeting and evaluation event
Friday 19th November 2010, EPSRC, Polaris House, Swindon
(rooms F & CC1/ CC2)

<table>
<thead>
<tr>
<th>Time</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30</td>
<td>Refreshments available (room F)</td>
</tr>
<tr>
<td>09:00</td>
<td>Morning panel meeting to clarify objectives for day and evaluate reported outputs from first year of pilot</td>
</tr>
<tr>
<td>10:45</td>
<td>Refreshments available</td>
</tr>
<tr>
<td>11:00</td>
<td>Evaluation event welcome (CC1/ CC2) to include presentations from EPSRC staff providing overview and data analysis summary</td>
</tr>
<tr>
<td>11:40</td>
<td>Networking and poster session with university representatives to include lunch. Panel members to review posters and question representatives on university approach – poster session timetable provided on page 2</td>
</tr>
</tbody>
</table>

(13:00 – 14:00 session open to EPSRC staff)

| 14:10  | Evaluation event wrap up and close |
| 14:30  | Afternoon panel meeting (room F) – panel members to report back on outputs from poster session and make recommendations |
| 16:30  | Panel meeting closes |

Poster session pairing and timetable
The poster session will begin at 11.40 and includes a break for lunch and networking. Each panel member pairing will have up to 20 minutes to review each poster they are assigned to (as detailed below) and question the university representatives on their approach to PhD Plus. Each pairing will review either 4 or 5 posters and have an opportunity towards the end of the session to informally visit other posters they may not have already seen.

The networking and poster session will also be open for EPSRC staff to attend from 13:00 – 14:00.

<table>
<thead>
<tr>
<th>Panel member pairings</th>
<th>Timings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Julie Yeomans</td>
<td>Birmingham</td>
</tr>
<tr>
<td>Martin Sadler</td>
<td>Lancaster</td>
</tr>
<tr>
<td>Alison Rodger</td>
<td>Cambridge</td>
</tr>
<tr>
<td>Nick Tyler</td>
<td>Leeds</td>
</tr>
<tr>
<td>Paul Raithby</td>
<td>Imperial College</td>
</tr>
<tr>
<td>Colin Snape</td>
<td>Liverpool</td>
</tr>
</tbody>
</table>

General opportunity to visit and review other posters
Annex 6: Agenda for university representatives

PhD Plus evaluation event
Friday 19th November 2010, EPSRC, Polaris House, Swindon
(room CC1/ CC2)

<table>
<thead>
<tr>
<th>Time</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30</td>
<td>Poster set up and refreshments available (CC1/ CC2)</td>
</tr>
<tr>
<td>11:00</td>
<td>Evaluation event welcome to include presentations from EPSRC staff providing overview and data analysis summary</td>
</tr>
<tr>
<td>11:40</td>
<td>Networking and poster session to include lunch (available from 12:00.) Each poster has been allocated a specific 20 minute review slot (as detailed below) in which panel members will question representatives on their university’s approach to PhD Plus. In addition panel members will have an opportunity towards the end of the session to visit other posters they may not have already seen:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel member pairings</th>
<th>Timings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Birmingham</td>
</tr>
<tr>
<td></td>
<td>Lancaster</td>
</tr>
<tr>
<td>2</td>
<td>Cambridge</td>
</tr>
<tr>
<td></td>
<td>Leeds</td>
</tr>
<tr>
<td>3</td>
<td>Imperial College</td>
</tr>
<tr>
<td></td>
<td>Liverpool</td>
</tr>
<tr>
<td></td>
<td>General poster session</td>
</tr>
</tbody>
</table>

14:10 | Evaluation event wrap up and close |

PhD Plus participant university representatives/ attendees were:

- Ms Fiona Heatlie (University of Birmingham)
- Ms Kusam Leal (University of Cambridge)
- Dr Angela Kingman (Imperial College)
- Professor Awais Rashid (University of Lancaster)
- Professor Paul Seakins (University of Leeds)
- Dr John Myerscough (University of Liverpool)*
- Professor Chris Taylor (The University of Manchester)
- Professor Andy Long (University of Nottingham)
- Mr Lewis Williams (University of Oxford)
- Dr Tracey Swift (University of Sheffield)
- Professor James Vickers (University of Southampton)
- Miss Angela Johnston (University of St. Andrews)*
- Professor Karen Kirkby (University of Surrey)
- Mr Alastair Knowles (University College London)

*university representative was unable to attend event
Annex 7: Sample Posters
PhD Plus Pilot 2009-2010

A University-wide approach selecting top EPSRC-funded graduates aiming for high impact post-doctoral research

**Excellence and Impact as Key Criteria**

- Retain and recruit best students
- Retention of best students in research careers
- Help individuals launch a successful research career
- Enable students to build networks of contacts

---

**The Projects**

- Novel device prototypes for user interfaces
- Quantum transport through nano-structures
- Evolving Internet Communication Services
- Choice-based revenue optimisation for service providers
- Bayesian Inference for Signal Processing and Physiology applications

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**Impact**

- 8 peer-reviewed papers published
- 1 submitted; 4 in preparation
- 10 conference presentations
- £ 20K matched funding from Intel
- £ 30K matched funding from Microsoft

---

**Future Directions**

- Two-stage selection of candidates
- Additional support for preparing cases
- Early career grants
- Outreach support for impact

---

**Future Directions**

- Two-stage selection of candidates
- Additional support for preparing cases
- Early career grants
- Outreach support for impact
EPSRC Doctoral Prize Fellowship Interim Evaluation 2009/10

Dr Tracey A. Swift & Fozia Yasmin

Scheme Design

- Grow the potential shown by the brightest and best PhD students in science and engineering (top 10%), positioning them to take up a research career consistent with their promising talent and individual ambition.
- Highly competitive
- Must have submitted thesis
- Application process:
  - Application form
  - Executive Summary of PhD
  - Synopsis of proposed fellowship activities
  - Proposed budget & work plan
  - CV, Satisfaction of Neighbours
  - Head of Department and Supervisor’s statement
- Assessment process:
  - Judged by panel of senior academics, Human Resources, Research & Innovation Services and chaired by PVC for Research & Innovation.
- Maximum of £50k plus enhancement of 5% for ICT/public engagement activities
- During the 1 year period each fellow must produce two quality refereed journal papers of international standing (or equivalent) as well as other “outputs” during the year, and act as ambassadors for the University of Sheffield in various settings.

Support for Fellows

- One week induction (introduced by PVC for Research & Innovation)
- Seminars and Workshops in:
  - Preparation, planning, starting up and initiating the research project
  - Topics included: Project management, understanding & managing stakeholders, managing risks and issues, developing positive relationships and financial management and entrepreneurial
  - Implementation, managing and running the project
  - Included: networking, developing collaborative relationships, project monitoring, seeking and acting on feedback, managing time and milestones effectively
  - Closing, reviewing and writing up project outcomes
  - Included: writing reports, academic vs. business focused communication, possibilities and outcomes of research, preparing for grants and preparing grant applications
  - Supporting throughout the research process and moving forward with your career
  - Included: Entrepreneurial skills, getting the best out of mentoring, developing co-coaching approaches, reviewing project plans.
- Mentoring Scheme:
  - Mentors attended induction
  - Conducted 3 monthly meetings
  - Submitted 3 monthly progress reports.

Outputs/Impact

- Outputs of Fellows
- Impact Factor of Publications
- In the academic collaborations of 15 countries
- Career development opportunities linked with 3 companies
- Subsequently all of the fellows secured academic posts with fund support
- Best student grant award

Subjects

- Test a cancer therapy using a DNA based drug an a di-block copolymer drug delivery system.
- Understand and manage a physical electrode-biosystem interface with in a Microbial Fuel Cell (MFC).
- Investigate and characterise photo switchable molecules in the internet of generating long lived charge separated states for harvesting of solar energy for a renewable energy source.
- Agent based simulation using the Graphics Processing Units (GPU). In particular to establish the FLAME GPU framework as the first ABM environment of agent simulation on GPU hardware.
- Research based on quantum cascade laser (QCL) technologies for gas detection.
- Observe and understand nanoscale interactions and dynamic tribological events.
- Novel energy and re-newables research.
- Acoustic Emission.

Outputs/Impact

- Published several papers in which I was the lead author. These have focused on my research on a DNA based drug delivery system.
- Have participated in a number of interesting and new projects concepts for the future. It has enabled me to develop my skills and knowledge.
- Receive a number of invitations to take part in conferences and workshops.
- Have developed strong working relationships with the University and industrial partners.
- Have developed strong working relationships within the University and industry. The opportunity to be part of novel energy and renewable research

Career Development

- The opportunity to be part of novel energy and renewable research
- The fellowship enabled me to gain new skills and developing ideas that can be applied to industry and the academic environment.
- The fellowship allowed me to pursue an independent and flexible research program. This has been achieved in establishing myself as an expert in agent based simulation for the emerging GPU technology.
- The fellowship has provided excellent opportunities for networking and have made several valuable contacts. Towards the end of my fellowship I secured a postdoctoral position with Professor Lawrence and Dr Peter Moore (EPSRC National Centre for Translational Neuroscience). I have been working within the project entitled "Fusion of weak Direct Realism with the initial innovations of Prof. Moore’s PRESENCE architecture. By considering speech as an intentional, unbroken cycle of production publications impacting upon a number of fields ranging from emotional speech detection to Psychology."