



## Narrative Review

# Research and fellowship funding perspectives: A collective NIHR experience of a community of pre- and post-doctoral radiographers



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## ABSTRACT

**Objectives:** This paper harnesses a comprehensive overview and the collective experience of a community of pre- and post-doctoral Radiographers in successfully securing grants to demonstrate what is required as part of an NIHR fellowship application.

**Key findings:** Developing a research fellowship application requires individuals to expose themselves to critique to improve the content, design and structure of the proposed piece of work. The scale of the project should be carefully considered when developing applications, with the research plan accurately and realistically proposing a suitable amount of work to be undertaken within the timeframe.

All fellowship applications comprise several key elements which must be meticulously crafted to address the requirements of the specific call. This is critical because every section of the application undergoes scrutiny by review panels to ensure the funding achieves its maximum impact.

The key elements requiring detailed information are themed around *Project, Person, Place, Patient and public involvement and engagement (PPIE), the surrounding People, and a training plan*. However, a golden thread highlighting inclusive research that is people-centred is required to run through the entire application.

**Conclusion:** NIHR fellowships are an important pathway to enable dedicated clinically relevant research projects for patient/family benefit to be combined with the advancement of an individual's clinical and academic skills. These dedicated funding streams are tailor-made to enable a wide range of healthcare professionals, including Radiographers, to develop into research leaders of the future.

**Implications for practice:** Maximising research training opportunities, including research fellowships for the Radiography profession, will offer the completion of clinically relevant research projects alongside the development of the research leaders of the future.

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## Introduction

Research is integral to the NHS constitution, with active research institutions demonstrating improved patient outcomes.<sup>1</sup> The Care Quality Commission has introduced research into the Well Led metric, to raise both the profile and value of research with patients and staff.<sup>2</sup> There is now an increasing expectation for staff to be research-engaged to align with both local and national strategies<sup>2,3,4</sup> In addition, evidence demonstrates that individuals undertaking research benefit from training and education providing diverse career destinations, whilst institutions may retain and attract new staff through greater career development.<sup>5</sup>

Frontline clinical staff often understand the challenges and opportunities to improve clinical services and are well-placed to identify and investigate research questions that will benefit their patients and the service. Historically, radiographers are more commonly associated with the delivery of other individuals' clinical research through imaging, novel treatment delivery and clinical trial management rather than being chief investigators and leading their own research trials.<sup>6</sup> This may be due to radiography workload patterns and the lack of specific patient caseloads contributing to the profession's slow uptake in capitalising on research career development opportunities.<sup>7,8</sup> However, the tide is slowly turning with a growing cadre of radiographers leading clinical research and showing parity with our Nursing and Allied Health Professional peers.<sup>9</sup>

To ensure that the profile of radiographers is front and centre in the patient-benefit research arena, radiographers need to embrace the diversity of the current research opportunities. Whilst research qualifications are not mandated to be research-engaged, obtaining a PhD and/or other postgraduate research qualifications (e.g. MPhil, MRes) provides the individual with a 'research driving licence' that will provide a mechanism to further their academic career. Radiographers may be unaware that they are eligible to apply for funding, and by increasing the visibility of funding streams, role models and an understanding of how to access these opportunities, we can promote a 'can do' attitude.

Two frequently perceived barriers that prevent individuals from undertaking research are time and money,<sup>10</sup> where both can be mitigated through funded fellowship awards and schemes. Many funding bodies offer financial support for research such as fellowships and awards, examples include The College of Radiographers,<sup>11</sup> health care charities (e.g., Venus Arthritis, Alzheimer's Society),<sup>12</sup> The Radiological Research Trust,<sup>13</sup> The Wellcome Trust<sup>14</sup> and the National Institute of Health and Care Research (NIHR),<sup>15</sup> with each scheme having specific eligibility criteria and offering a range of funding options.

Within this review article, we aim to demonstrate what is required as part of a NIHR fellowship application. While not specifically aimed at a particular fellowship call, this paper harnesses a comprehensive overview and the collective experience of the authors in successfully securing grants.

## Overview of the NIHR funding fellowships

Established in 2006, the NIHR provides a strategic national approach to health research. Along with funding infrastructure and projects, the NIHR emphasises the development of future researchers. Collaborating with NHS England, the NIHR allocate funding for training individuals. Currently, radiographers are eligible to apply for two NIHR fellowship pathways: the Integrated Clinical and Practitioner Academic and the All-Profession research training programs.

These NIHR fellowships are designed to support the delivery of clinically impactful projects while also facilitating the fellows'

academic and clinical skill development. The fellowships typically provide funding to protect the individual's time (backfill), implement a structured training and development plan, and supply the necessary resources to undertake the research project. The level of funding and time allocation varies depending on the specific fellowship.

## Elements of a fellowship application

A fellowship application comprises several key elements, each of which must be meticulously crafted. Every section undergoes scrutiny by review panels to ensure the funding achieves its maximum impact.

Before starting an application, it's crucial to review the guidance notes and chairs reports from previous rounds (<https://www.nihr.ac.uk/nihr-doctoral-clinical-practitioner-and-academic-fellowship-dcaf-chairs-report-round-4>). These documents outline what is expected and highlight common gaps identified by reviewers. This will ensure each section is thoroughly addressed and aligned with the chair's feedback.

The key elements requiring detailed information include **Project, Person, Place, PPIE, the surrounding People, and a Training plan**. These will be explored in more detail within the following sections of this article. Of note, a golden thread highlighting inclusive research that is people-centred should run through these key elements of the application.

## Project

### *Clinically impactful project*

The research project should have a well-defined research question and/or a hypothesis that demonstrates impact and benefit for patients/families and/or the NHS. Applicants must identify clearly why the work is required, why it should be funded and the impact it will have. The scale of the project should be carefully considered when developing applications, with the research plan accurately and realistically proposing a suitable amount of work to be undertaken within the timeframe. An unambitious plan may look like poor value for money and may not have the desired impact, whilst planning too much work will appear unachievable and equally un-fundable.

Discussion with multiple professionals, experts within the field and different groups, including relevant patients, to identify the research is essential and who may become engaged during this development phase and go on to be integral to the entire project. Being embedded with an established research team to support your application, project, and future career aspirations is essential to assure the review panel that you and your project will be supported and successful. Once a research question has been identified, the development of the study design, sample size and selection, exclusion criteria, data collection and analysis is the next step and will require the input of academic colleagues and supervisors.

The NIHR research support service<sup>16</sup> is a useful resource that can provide support and feedback on funding applications. Developing an appropriate clinical project can take up to a year to fully develop.

### *Plain English statement*

This provides an overview of the planned research and is the first, hence the most important, part of your fellowship application that is read, and if successful, is published on the NIHR's website. It is essential that it can be understood by non-experts and should simply and clearly explain why the project is required, how you aim to address this need and what the impact will be at the end of the

funding. No speciality language or abbreviations should be used in this section, and advice should be sought from people outside of your specialist area to review and offer critical advice. After developing a complex and challenging piece of research, this section can often be difficult to write, so seeking advice from your PPIE groups to provide critical feedback is essential.

## Person

### *Career plan and clinical skill development*

An applicant's career plan should demonstrate a clear trajectory to being a future clinical academic leader. It is key to demonstrate how this funding will lead an individual to the next step in their research career journey, with increased skills and knowledge as well as demonstrating impact on improving the outcomes for patients and health care services.

Radiographic clinical academic career paths are not yet well established.<sup>5–9,21</sup> This means creating new roles and pathways is challenging, but also presents great potential for advances for the individual, the profession, and the healthcare service. Resources such as the Society of Radiographers "Clinical Academic Radiographer: guidance for supporting new and established roles"<sup>17</sup> and the "Education and Career Framework for the Radiography Workforce"<sup>18</sup> can help plan what this new role would entail. It is important to engage with both the clinical and research management structures within your institution to help ensure support if you are successful in securing a fellowship and to raise awareness of your long-term goals.

### *Training and development plan*

The personal training plan will be unique to the individual and the fellowship level being applied for. Each applicant should demonstrate their plan to facilitate growth in both their academic and clinical skills, to complete the research planned and produce research healthcare leaders of the future. Various tools can help to facilitate gaps in knowledge and skills, including the Vitae researcher development framework to identify training needs and track the progress of development.<sup>19</sup> It is important to think about courses that provide an understanding to fill the gaps in knowledge that require mitigation and addressed to allow you to complete a successful research training (e.g. MRes or PhD). Thus, this training needs to be designed for you and the project and the methods that are required.

## Place

### *Host institution*

All fellowship applications require you to have a Higher Education Institution (HEI) (university) and a health/social care service (such as your NHS Trust) as partners. The funding panel will evaluate the suitability of these in supporting the individual researcher and their proposed research project.

The application will require a statement of support from your listed NHS Trust and your affiliated HEI. The statement should describe the support available, their track record in supporting students (including fellows and previous NIHR applications), current and previous PhD and research activity, and experience in the methodologies or research area being proposed. Training resources, courses available and collaborations with other organisations which would support the training should also be considered and described. Evidence of commitment to the principles of equality, diversity and inclusion<sup>20</sup> and research integrity and how the

**Table 1**

Themes for consideration when discussing funding application with managers.

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|   |
|---|
| Some issues to consider when discussing with managers will be:  |
| <ul style="list-style-type: none"> <li>• How flexible can aspiring academics be in the clinical component of their work?</li> <li>• What will the split between academic and clinical work be?</li> <li>• How will the clinical academic radiographer keep up-to-date with their clinical skills and development during this opportunity?</li> <li>• How can they help to support this process (shadowing/supporting the development of the person backfilling)?</li> </ul> |

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organisation is well placed to support the achievement of these goals as well as the balance of your clinical-academic duties throughout the lifecycle of the research<sup>8</sup> and beyond.

### *Management & organisational support*

Early discussions are paramount to secure managerial backing and strategies for long-term success. Coordinating a joint meeting with relevant academics and clinical managers in the early stages is crucial to planning support (Table 1).

Running a clinical service and facilitating training secondments can be challenging for managers. Clearly outlining how your work will benefit both the service and the individual is the first step in approaching a manager who may be unfamiliar with these opportunities.

Refer to the organisation's secondment policy and seek support from human resources and the clinically relevant academic team, for advice. Overall, communication is key to making all parties aware of the opportunities and challenges that lie ahead.

Looking ahead, it's crucial to plan for the end of the research secondment too. Opportunities for promotion and utilising skills across multiple teams would be beneficial to explore. Ensuring that the individual, clinical service and department all benefit can lead to benefits for all.

## Patient and public involvement and engagement (PPIE)

The UK Standards for Public Involvement in Research defined this concept as research being carried out 'with' or 'by' members of the public rather than 'to', 'about' or 'for' them.<sup>32</sup> It is therefore highly recommended that researchers work together with relevant members of the public within an inclusive environment to develop, conduct and communicate research findings. Involving patients and the public in research through an inclusive lens has become essential to all NIHR research and applications.<sup>34</sup> PPIE should be the golden thread through the application and not just be referenced in the dedicated section of the application. It can increase the clarity, credibility and relevance of your study<sup>22</sup> and can be the beginning of an active partnership between the population affected by your work and yourself as a researcher.<sup>23</sup> Importantly, your research should be "with" or "by" people using the service, rather than "to", "about", or "for" them,<sup>24</sup> and is very different to participants taking part in a study.

Undertaking PPIE work at an early stage will help ensure you understand what is important to the population and clinical services. Those wanting to partake in PPIE may include:

- Past and current service users
- Formal/informal carers
- Patient support groups
- Representative organisations or charities
- Family members
- Health and social care practitioners.

For PPIE to be effective, the members must reflect the true diversity of society and capture a range of relevant perspectives and experiences (e.g. gender, ethnicity, location, experience, and age). Some groups of people may face barriers to getting involved in research, for example, those with a physical disability, cultural barriers, health fears and socioeconomic factors, so care and thought must be given to this area.<sup>25,26</sup> Showing consideration of these factors and designing your PPIE around the needs of the community you intend to develop solutions for will demonstrate to funding panels that your population affected by the condition thinks that the research area is a priority and warrants further investigation.<sup>27</sup> Clearly documenting what changed in an application because of these PPIE activities will ensure the funders can see that you listened and acted upon this invaluable feedback. Of note, there are various types of PPIE approaches (including participation, engagement, patient-led, collaboration/co-production and consultation), which may be considered depending on the relevant public group that is being involved.<sup>22–27</sup> Resources for guidance around practical elements for the conduct of PPIE and its incorporation in an application are available through the NIHR INVOLVE (learning for involvement)<sup>33</sup> and The UK Standards for Public Involvement in Research<sup>32</sup> webpage.

## Research team

### Supervision

The role of supervisors is to ensure that the PhD is completed according to the university's guidelines for completing a PhD and that appropriate methods are used. Selection of supervisors with expertise in a method that is a gap in your knowledge is assurance that the correct methods will be used. They are the kite mark for the quality of a PhD. Everything else is an add-on: career advice, etc., and not the role of the supervisors. For pre-doctoral and doctorate awards, 2–3 academic supervisors should be identified: the primary academic supervisor and secondary supervisor(s). The primary academic supervisor will be an individual who has direct experience in the research area and/or methodology and can provide you with sufficient time and guidance to successfully manage and progress through their award. It is also key to describe their suitability for this position by stating how many students they have previously supervised successfully to completion at both the master's and doctoral levels. It should also be noted that they must hold a substantive contract with the host organisation, usually a HEI.

The secondary supervisor does not need to be based at the host institution but must be able to offer further academic expertise and guidance for the applicant, ideally from a different skill set, to provide variety and increased depth of support. A clear justification for their involvement must be made, and a description of what they offer to the individual in terms of research project, training, guidance and support, including a realistic summary of their capacity. If you have not identified suitable supervisors through your existing network or the College of Radiographers database, it is essential to look to a wider network, including different professional backgrounds and institutions. Expanding your supervisory team beyond radiography can broaden your awareness of different techniques and skills.

### Mentorship

Mentorship offers something different from supervision and is equally important in aiding problem-solving, active listening, and acting as a guide for an applicant's development.<sup>28,29</sup> Mentors are more likely to form a less formal relationship with applicants where they will share their insights and experiences on matters

such as career planning, establishing networks and collaborations with other researchers and clinicians. Mentors are also less likely to have a direct link to the area of research targeted. However, they can still provide independent advice and be an important sounding board from which a mentee can make strategic and personal decisions. Mentors may also change during a clinical academic career to offer a variety of perspectives.<sup>28</sup> Ideally, a mentor should be external to the applicant's institutions to provide objective advice without bias. For radiographers, there are also opportunities for mentorship through the College of Radiographers Formal Radiographer Research Mentoring (FoRRM) scheme<sup>30</sup> or the NHS Leadership Academy.<sup>31</sup>

## Dissemination plans

On completion of your research, it is key to plan how the findings will be delivered and implemented, and applicants will need to consider carefully how to get the relevant information to a range of individuals. Of course, this will include peer review journal papers and professional conferences but thought should also be given to ensuring the work equally reaches those it will impact outside of the professional groups. Methods for dissemination may include engaging with charity groups, publicly accessed conferences or charity websites. Additionally, animations, infographics and even artistic installations can all be used to explain your message more clearly and simply, ensuring the people impacted by your research can access it.

## Financial costing

Costing up a completed application is often a new skill for early career researchers who will need guidance to complete this section. It is advisable to first identify the key areas of the fellowship grant and then to determine the cost implications for each stage/activity, including the research plan (e.g. methodology, data analysis and dissemination), PPIE activities (e.g. paying for their time on any advisory teams including caring costs, travel, and refreshments), training (e.g. courses and visits), and equipment (e.g. laptop, software, and resources). It is essential to involve your research innovation and finance team as early as possible and provide them with a list of expenditures for the project. They will have a wealth of information and advice, but this stage can still be confusing and will need multiple amendments to ensure accuracy and a timely sign-off from the respective departments. Make sure that your supervisory team has reviewed the finances and agreed on the suitability of the costings and that this matches the funding for the fellowship application as it may change each year. Currently, the NIHR uses the Schedule of Events Cost Attribution Template (SoECAT) which is a tool used for non-commercial research studies across the UK for all researcher grant/fellowship cost planning.

## Importance of feedback

Critical feedback is crucial to developing a successful research application. When writing applications, it is easy to overlook items or miss details that are vital within the research project or areas for training. It can also be difficult for individuals to "sell themselves" sufficiently within their statements in applications. Writing clearly for multiple audiences can be difficult, and feedback from others who are not in your field or research can ensure that your application is clear, well rounded and understandable.

However, this feedback can be challenging to hear! Choosing the right people to give feedback and taking this feedback on board will always strengthen an application. Once you have drafted your application you will want to ask for feedback from suitable

**Table 2**  
Some successful self-motivation activities during the research application development stage.

| Successful self-motivation activity                            | Action  |
|--|---|
| A Celebrating victories (big and small)                        | The application is usually a large piece of work, mapping out the milestones for an application and celebrating the completion of each milestone can help motivation to continue to the end. Celebrations do not have to be big but should be something that you enjoy. |
| B Share your experience and find a supportive friend/colleague | Having a supportive network or cheerleaders can help spur you on when you are struggling to find motivation. Equally, having someone to share your frustrations with can help shake any negative emotions.  |
| C Speaking to your PPIE groups                                 | Speaking to your PPIE groups can also provide encouragement that you are investigating an important area and can spur you on to complete an application.  |

individuals/groups including your academic supervisors, colleagues, research department and patient and public groups. This can allow areas of omission to be identified early, and solutions to be provided.

Overall, it should be remembered that although feedback can be tough to take, it should always be completed to improve the fellowship application and critical appraisal is an important phase of learning as a clinical academic.

### Challenges

Applications are time-consuming. Staying motivated when there is an ongoing requirement to plan, write, obtain feedback and improve can be a significant challenge. As time progresses, it can be common to hit a motivational brick wall, where balancing the tasks becomes overwhelming. Building methods to improve self-motivation can help resist the potential burnout from developing research applications (Table 2).

Developing research applications requires individuals to expose themselves to critique and judgment. During this process, it can be difficult to maintain confidence, and feelings of self-doubt can easily occur. Imposter syndrome is a term used to describe the phenomenon of individuals doubting their skills, talents or accomplishments and having a fear of being exposed as “frauds”. It is common to have these feelings during all stages of a research career, from application to successful awards. Perfectionism plays a significant role in imposter syndrome, with unachievable high standards and focusing on flaws leading to feelings of “not being good enough”. Our recommendations for tackling this feeling include acknowledging your feelings, identifying whether you are focusing on perfection which is causing you to be overly critical and talking to your colleagues, supervisors and mentors.

### Conclusion

Research fellowship and grant applications are long processes where feedback and setbacks are common. Thus, personal resilience is an important trait to develop as a researcher, especially in the growing specialist area of Radiography. Efficient and timely preparation, planning and mentorship are important to help with anticipated challenges that come up. However, there will always be unexpected problems, “expecting the unexpected” can help you accept that research, in general, rarely goes exactly to plan.

NIHR fellowships are an important pathway to enable dedicated clinically relevant research projects for patient/family benefit to be combined with the advancement of an individual's clinical and academic skills. These dedicated funding streams are tailor-made to enable a wide range of healthcare professionals, including Radiographers to develop into research leaders of the future. The authors, by this article make the clarion call to the Radiography community to maximise the research and fellowship funding opportunities that the NIHR offers to complete clinically relevant research projects alongside developing the research leaders of the future.

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### Conflict of interest statement

The authors declare that they have no competing interests. Of note, TNA is currently a member of the NIHR Doctoral Clinical Academic Fellowship Selection Committee. TNA and RR are members of the Editorial Board of Radiography but were blinded to this article's decision-making process.

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