



# A review of the academic and gray literature on the Academic Foundation Programme

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## ABSTRACT

The purpose of this study was to review the academic and gray literature specific to the Academic Foundation Programme (AFP). This was performed as part of a broader review of the program. In the United Kingdom, the AFP is a competitive entry entity running parallel to the foundation programme, the first 2 years of clinical practice and training for new medical graduates. An electronic search of online journal databases was performed. This was supplemented by hand searching of medical education journals. Gray literature was identified by searching websites of relevant governmental and nongovernmental organizations. Eleven academic journal articles and four pieces of gray literature were identified. Personal accounts dominated and shared several positive features of the program including gaining research skills and having a degree of work freedom balanced with the limitations of a 4-month block and frustration at the pace of progress. The personal accounts were supplemented by a small-scale qualitative interview study and an online questionnaire study. The literature pertaining to the AFP is almost entirely positive but is lacking in both critical discourse and higher level evaluation, future studies must move forward in terms of rigor to help our understanding of what does and does not work for early medical academics, and perhaps more importantly, why this might be the case.

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## INTRODUCTION

The importance of academic medicine as a discipline is rarely disputed. This is not surprising with it being described as “the capacity of the health-care system to think, study, research, discover, evaluate, innovate, teach, learn, and improve” [1]. Taking a historical viewpoint it is clear that medical research has led to improvements in health [2] but teasing out these improvements from wider social-cultural developments, particularly in the global context, is an extremely difficult task. Recent calls have been made to encourage researchers to better demonstrate the value and impact of their work [3].

### Academic Medicine in Crisis

Academic medicine is only as good as the work produced, key to this is recruitment and retention of high caliber researchers. But what is academic medicine? “Broadly defined, it is the discovery and development of basic principles, effective

policies, and best practices that advance research and education in the medical sciences, ultimately to improve the health and well-being of individuals and populations [4].” Academic medicine is perceived to be in crisis [5], an important element of this is the high reported vacancy rate at lecturer and professor level combined with an ageing academic workforce [6]. The reasons behind this crisis are multiple. The reduced earning potential of academics versus nonacademics, particularly in the context of rising graduate debts [7-9] and the increased desire for work-life balance [10] are both considered important, interacting factors.

The evidence on encouraging junior doctors and medical students into academic medicine has recently been summarized as requiring work toward “engaging them in intellectually engaging scholarship” [11], essentially involving early exposure, preferably across an extended period of time, combined with high quality role models and mentoring [12,13].

## Early Clinical-academic Careers

The integrated academic training pathway was designed to bring structure to the training of clinical academics in the United Kingdom, with Academic Foundation Programmes (AFPs) interpreted by some to be the first postgraduate step in this process. Initiated in August 2005, the foundation programme was one of the first in a series of reforms collectively known as Modernizing Medical Careers. It was intended to bridge the gap between graduation and specialist training, allowing new doctors to gain the breadth of experience and basic skills required to make this transition. AFPs intend to integrate this initial clinical training with exposure to core elements of academia [14].

With 501 positions available in 2012, representing approximately five percent of all foundation programme placements [15], AFPs are available to only a small proportion of graduating doctors. There have been recent calls to increase this number to help widen participation [16]. If funding for these programs is to continue, or if there is to be an increase in capacity, then evidence is needed to justify this and to encourage development of the highest quality training possible.

As part of an evaluation of the AFP in the North West of England, we sought to bring together all the available evidence specific to the AFP. We were aware that literature relating to the AFP is sparse; as such we aimed to identify all the published research on the program as well as identifying key areas of gray literature.

## METHODS

An electronic literature search of Ovid Medline from 1946 to present and Embase 1996 to present was performed using the following search terms and Boolean operators: “Academic foundation” OR “AFP” OR “AFP.” This yielded 32 results, two duplicates were removed. Review of each paper’s title excluded 26 further papers leaving six for abstract review. One abstract was excluded as irrelevant leaving five papers for review.

High-impact international journals in medical education were hand searched to identify all relevant articles. Six further articles were included.

Gray literature, which can be defined as “document types produced on all levels of government, academics, business and industry in print and electronic formats that are protected by intellectual property rights, of sufficient quality to be collected and preserved by library holdings or institutional repositories, but not controlled by commercial” [17] was also accessed, this was identified by searching key websites, specifically those of the UK Foundation Programme Office, the General Medical Council and NHS Health Education England. This yielded three key papers. Accessing gray literature has specific problems, particularly due to the lack of coherent organization [18] so it is likely that many documents have been missed by this search.

One piece of gray literature was included from the author’s personal library.

## RESULTS

A total of 11 articles from academic journals were included and are summarized in Table 1. In addition four items of gray literature, summarized in Table 2, were identified for inclusion.

### Personal Accounts

Much of published work on AFPs is descriptions of personal experience aiming to give some insight to current or potential trainees [22-29]. These report some of the positives and negatives of AFPs as well as providing advice on how to succeed during such a program. These personal accounts share many features with specific positives including:

- Gaining research and transferable skills
- The opportunity to work to ones own timetable and goals
- That the time can be highly productive allowing participant to be more competitive in the job market.

Negative aspects of the program again had a variety of themes:

- The limited amount of time, especially in academia, that a 4 months block proves to be
- Can be frustrating
- Reduced pay
- Perceived impact on clinical competence that not having on-call duties for 4 months can bring.

That said all the articles would recommend the reader to consider the program. The earliest paper identified is a description of the then new academic training pathway [30].

### Research

A small scale (six participants) qualitative interview study limited to a single site and focusing on AFPs in medical education identified trainees expectations, their experience of balancing teaching, research and clinical work, what the program helped them to achieve and specific barriers and assistance felt to be important. Thematic analysis identified six themes worth repeating here [31]:

1. “Organizing research time requires effort, persistence and support
2. This is even greater for the first cohort
3. Research is difficult
4. With the available support success is achievable
5. Teaching is a real highlight of the program for most
6. The clinical component of this program is highly regarded by trainees”

An online questionnaire based survey of current or recently completed AFP trainees found that the majority of trainees wished to continue an academic career at the end of their AFP and that feeling well informed about academic careers and possessing a higher degree were independently associated with amplified aspiration to pursue academic careers [32].

**Table 1. Summary of Papers in Academic Journals Pertaining to the AFP**

Author	Year, location	Summary	Positives	Negatives	Take home message
Winyard <i>et al.</i>	2006, UK	Description of the new academic training pathway			The new schemes offer opportunity to provide programs that promote recruitment and retention in academic pediatrics
Hilton	2007, UK	Short piece describing the program with some advice for those completing similar	Gain research skills Work in a different environment	Time constraints, 4 months is not a long time to complete a research project	Find the right project Self-motivation and planning are key
Yunus	2007, UK	Description of the program personal reflections and advice for those considering application	Development of transferable skills. Gaining research and teaching experience	Can be frustrating. 4 months is a short time period in research terms	Finding the right project and supervisor is key
Banham <i>et al.</i>	2008, UK	Description of the program personal reflections and advice for those considering application	Work to own timetable	Time away from clinical experience early on may be perceived negatively	Good organizational skills and motivation are key
Lee <i>et al.</i>	2008, UK	Description of the program and personal account of experience	Can gain transferable skills, get a taster of research and some tangible results	Can be frustrating, applying for research ethics very time consuming	Academic medicine is more than research, opportunities to teach can be as rewarding
Scott	2008, UK	Description of the program and personal account of experience	Taster of integrating research and clinical work	More academic time is less clinical time Financial cost of courses and conferences	Stresses the importance of the right attitude
Lyons <i>et al.</i>	2010, UK	Online questionnaire of current AFP doctors and graduates of the program looking at academic career aspirations	The program provided a useful insight into academic careers and protected time to complete research projects	Variable quantity and quality of academic teaching. Concern about restricted clinical training and earning potential	Having choice as to which academic project is pursued is independently associated with increased intention to pursue an academic career
Brettell	2012, UK	Personal account of the author's experience of the program	The opportunity to work with a deal of autonomy and with world leading experts in your chosen field. Help you to be competitive when applying for the next job	Can be hard work and frustrating, things take a lot longer to complete than you first imagine. Lower income	The AFP is not right for everybody but is worth considering
Darbyshire and Baker	2013, UK	Small piece of quantitative research describing six trainees experience of an AFP in medical education	Can be highly productive	Like any new program teething problems were apparent	The role of academic supervisor is vital. Maintaining protected academic time is difficult but important
Jakes <i>et al.</i>	2013, UK	Account of the program from 4 AFP doctors	Diverse workload, rewarding experience and can build both specific academic skills and transferable skills	Can be disheartening when projects do not go as planned. Courses and conferences can be expensive	Start planning early, take advantage of opportunities afforded but do not get over burdened
Qureshi	2015, UK	Personal account of a teaching focused AFP	Gain teaching experience with formal feedback, portfolio development and the stimulation working with students affords	Reduced clinical contact and salary. Difficulties completing an education research project in 4 months	Teaching focused AFPs are valuable experience regardless of career aims

AFP: Academic Foundation Programme

## Gray Literature

The gray literature can be considered as being in three distinct parts. The first is a report articulating the need for such a program, and while the report does not specifically state that an AFP is needed, potentially because the report precedes the regular foundation programme, many of the recommendations correlate with the eventual aims of the AFP [19].

The Rough Guide to the AFP [14] and the Academic Compendium [21] can be considered partner publications

in that both aim to support those involved in the program by providing clear information about it.

The Collins report was a national review of the first 2 years of postgraduate medical training, the foundation programme, within which the AFP also featured with the report being very supportive of AFPs: Quoting the positive Quality Assurance of the Foundation Programme reports on visits to Deaneries and the strong support from the National Institute for Health Research and the Medical Schools Council as evidence of its success [20]. The report also made comment about revising the curriculum and strengthening supervision.

**Table 2: Summary of the gray literature pertaining to the AFP**

Commonly known as	Reference	Year	Context	Summary
The Tenure-Track Clinical Scientist	[19]	2000	Before the introduction of the AFP and integrated academic training in general in the UK, the Academy of Medical Sciences recognized that recruitment and retention into academic medicine was in trouble with this report reporting their investigation into this	The report describes the disincentives to academic medical careers and makes several recommendations to try and tackle this. Although they do not specifically mention an Academic Foundation Programme, the eventual program shares several similarities with the reports recommendations
The Collins Report	[20]	2010	Commissioned by Medical Education England the document reports on a process that aimed to evaluate how well the foundation programme was meeting its original objectives and how well it is able to meet the future needs of the health-care system	The report made several recommendations including strengthening supervision and revision of the curriculum. Specifically relating to the AFP the report is highly positive stating that "feedback from trainees who have completed or are currently undertaking the program has been universally supportive"
Academic Rough Guide	[14]	2013	The central foundation programme office published the original guide in March 2009 and is now in its second edition, it aimed to provide accurate information about the then new initiative	Essentially a guide outlining what the AFP is, the process of application, advice on how to make the most of the program and how the program fits into wider academic training primarily targeted at potential and current AFP doctors
UKFP Academic Compendium	[21]	2013	Produced following review of the content of taught postgraduate courses in relevant fields and in consultations with various AFP stake holders	A document that presents outcomes and competencies that could be used for a specific AFP. Broadly divided into three sections, one for research programs, one for medical education programs and one for leadership and management programs

AFP: Academic Foundation Programme

## DISCUSSION

### Time Limited Placement

About 4 months is the usual period for a research block in the AFP and the limitations this places on the amount of research that trainees can get done was repeatedly discussed in the papers describing individual experiences [23,28,29]. This is not surprising given that the NHS Research Ethics System has a timeline of 60 days, half of the 4-month placement, and this does not include the time taken to complete the considerable amount of paperwork required [33]. The advice in several of the articles to start planning early [22,25] is obvious but easier said than done during the full-time clinical placements that surround the academic block and may be one of the benefits of having half-day per week across the 2 year that some programs provide [31].

### The Supervisor Effect

The importance of the supervisor has been studied and written about, particularly for doctoral studies, and while this is not directly applicable to the AFP, especially in terms of timescale, the postgraduate nature of AFP participants means the populations are not completely dissimilar. Most PhD students had more than one supervisor and met initially every two weeks, with the frequency declining across the program [34]. One particular characteristic shared between a PhD and AFP supervisor is that of the dual role of guide and assessor [35]. Another dichotomy is the tension between whether the supervisor should be hands-on and take responsibility for the research or hands-off and have a more guiding role [36]. The same paper also discusses if the student's personal development or the research task is more important. While some of the AFP papers echo the importance of the trainee-supervisor

relationship [23,31] there is nothing to suggest what specifically makes a good relationship, the research from PhD supervision suggests that different trainees prefer different supervisor attributes [35,36] and this may be the case for the AFP.

### Other Aspects of the AFP

Being able to work to your own timetable is listed as a real positive of the academic block, but this is balanced with the need for self-motivation and organizational skills to get work done [26].

Yunus discusses the value of developing transferable skills including information technology and communication skills during their AFP [23]. Lee *et al.* also discussed transferable skills, calling them generic skills, but focusing more on time management and organizational skills. They also discussed the development of communication skills that are needed to discuss, disseminate and defend ones work [24]. The development of transferable skills during research training, particularly at doctoral level, is increasingly being recognized as vital not just to succeed in academia but for the majority of individuals who leave academia for other careers [37]. A workshop for PhD students in China and Australia on professional written communication skills was evaluated positively by participants [38]. The role of universities in developing higher research degree participants generic skills is an area of ongoing debate [39,40].

Some of the programs were medical education-focused [24,28,31], but even those that were not discussed the teaching opportunities afforded by the AFP and described these experiences as both enjoyable and rewarding [23]. Teaching has been described as part of the socialization process for graduate students progressing in academic careers [41] and has been

shown to be associated with better methodological research skills in science-based graduate students [42].

Several authors discussed time away from clinical training as a potential downside of a secondment to academia [26-28,32]. However, this is in no way a consistent opinion [31] and there is no evidence to suggest that doctors taking time out during training negatively affects clinical competence once training is complete.

Nevertheless, this can be a real perception to trainees and we are aware of one trainee who left AFP after year one due to concerns about losing acute competencies in year two when an academic placement in foundation year two was combined with a general practice placement.

The major limitation of this review is that most of the papers are personal accounts and as such prone to bias and even when taken as a group of reports, the results have to be considered very carefully and any conclusions can be at best tentative.

In summary, the literature pertaining to the AFP is almost entirely positive but is lacking in both critical discourse and higher level evaluation, future studies must move forward in terms of rigor to help our understanding of what does and does not work for early medical academics and perhaps more importantly why this might be the case.

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