

Advancing Academic Ophthalmology

Research is integral to the mission of the Royal College of Ophthalmologists (RCOphth) to deliver the highest achievable quality of eye care for patients and is enshrined in five (of six) obligations in its Charter.

Academic ophthalmology - comprising research, translation/knowledge transfer and training of scientists - as a sub-specialty is therefore business and mission critical for RCOphth.

Advancing academic ophthalmology, as the engine of innovation¹ for ophthalmology, has never been more vital. **This document sets out the current status of academic ophthalmology in the UK, highlights the challenges faced by clinical academic ophthalmologists and strives to identify the opportunities to nurture, sustain and retain clinical academic ophthalmologists across the different stages of their careers.** The RCOphth's specific response to the national [research](#) plan for the NHS and the post-COVID [vision for UK clinical research](#) to address health inequalities is set out in the separate publication '*Ophthalmic Research by or All*' which responds to the paradigm shift in clinical research in the NHS.

Ophthalmic research takes many forms; from basic laboratory and population discovery science through translational medicine, applied health care science, policy research and clinical trials: all of which provide avenues for improved eye care and/or improved visual health of the public. Impactful biomedical research is driven by clinical need and active participation of academic clinicians, and delivered through close collaborations between clinical, academic, industry and patient/public partnerships. **The RCOphth is committed to promoting all areas of academic endeavour and supporting academic ophthalmologists in their pursuit of excellence in disease prevention, clinical care and health policy.**

The UK is recognised to be [world-leading](#) in ophthalmic and vision sciences research and in the training of academic ophthalmologists and vision scientists. Vision and eyes research is very highly rated in the UK's Government assessment of higher education institutions (Research Excellence Framework, REF)². **The RCOphth is committed to maintaining this pre-eminence.**

Current status of academic ophthalmology in the UK

Alarming decline in ophthalmology academic staffing levels

A survey of the medical academic staffing levels was undertaken by UK Medical Schools Council in 2019 showed there were 22.3 FTE (full time equivalent) clinical professors of ophthalmology. They comprised 1.73 % of the 1 286 FTE NHS consultant ophthalmologists. This proportion had declined from 2.1% in 2004³⁻⁵ and was also below the overall national proportion of 2.29% FTE professors in the NHS consultant workforce^{3,4}. Furthermore there has been a **steady decline in ophthalmology clinical academic staffing levels**, particularly at the Reader/Senior Lecturer (2014 FTE: 21.2, 2019 FTE: 13.7, decline by 35.4%) and Lecturer level (2014 FTE: 17.0, 2019 FTE: 11.8, decline by 30.6%) over a five year period from 2014 to 2019⁴ (Figure 1).

Whilst longitudinal data are not available for academic trainees, the Ophthalmologists in Training Group (OTG) Survey conducted in 2019 found that fewer than a quarter (23%) of the respondents had taken or are considering taking out-of-programme time for research (OOPR), and only 3.6% were currently on OOPR. The key themes identified in the OTG survey to facilitate future research endeavours were “time”, “training”, and “funding.”

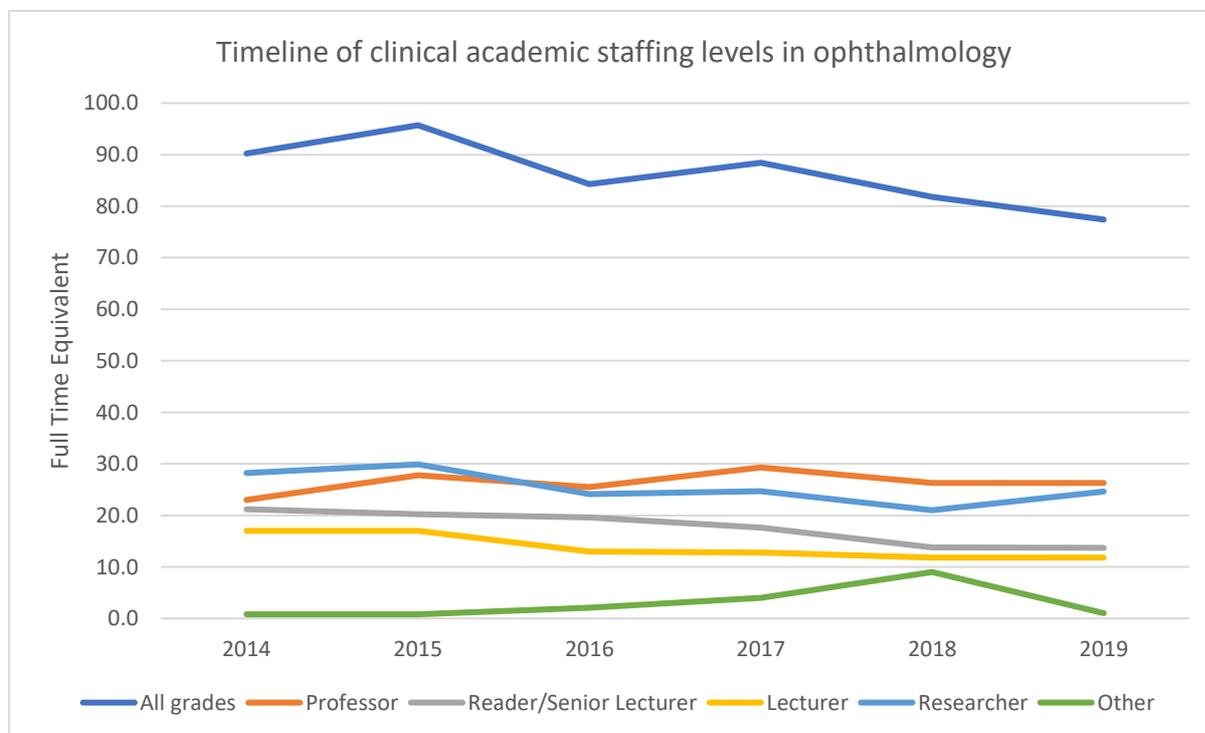


Figure 1. Timeline of clinical academic staffing levels in the ophthalmology speciality (FTE) in England, Wales, Northern Ireland and Scotland from 2014 to 2019 according to different

academic grades. (Data tabulated from the Medical School Council Survey of Clinical Academic Staffing Levels 2019)

Despite this, 69% of trainees who responded cite opportunities for research as a very/moderately important factor in influencing their choice of consultant post. The **next generation** of consultant ophthalmologists clearly **see research as integral to their clinical work and their careers**. The RCOphth is committed to facilitating this.

The RCOphth is committed to actions to reverse the decline in a clinical academic workforce in ophthalmology which will, if unchecked, result in attrition of the 'critical mass' of expertise necessary for ophthalmic research to thrive and potentially, create a generational gap in the workforce through the additional [impacts](#) of COVID-19 on ophthalmic research and academic ophthalmology. Early in the pandemic, the RCOphth made specific [recommendations](#) for mitigating the impact of the pandemic on ophthalmic research and academic ophthalmology and the Academy Of Medical Sciences has highlighted the longer-term generic [risks](#) to medical research careers⁶.

Challenges and Opportunities

The RCOphth's ambitions in relation to academic ophthalmology, through the work of the Academic SubCommittee and its contributions to other College committees, are to:

- **Inspire and train the next generation of academic ophthalmologists in research excellence**
- **Facilitate the transition to research independence in tandem with ensuring the highest quality clinical training**
- **Retain and promote the UK's world leading academic ophthalmology, both in UK research institutions and in the NHS**

Inspiring and engaging academic ophthalmology trainees

The most common route to a career in academic ophthalmology is through integrated academic training fellowships, such as the National Institute for Health Research (NIHR) Academic Clinical Fellowships (ACF) and other jointly funded early career academic posts, which provide academic trainees with the time, financial and training support to develop their research skills and are positively correlated with success in pursuing further funding for higher research degrees^{7,8}.

Securing funding streams for these early career ophthalmology research posts is vital to protecting the pipeline of future clinician scientists. Accrued contractual benefits, pension, maternity or paternity rights must be protected when academic trainees are required to change employers between NHS and higher education institutions to undertake their fellowships⁹. In order to increase the number of ophthalmology trainees applying for and securing competitive research fellowships, **established academic ophthalmologists in the UK as a collective body need to engage with ophthalmic trainees.**

To facilitate this, the Academic SubCommittee commits to

- **delivering high visibility, useful resources on the RCOphth website, including a frequently asked questions (FAQ) summary**
- **seminars or workshops to promote the benefits of a career in academia**
- **educational offerings promoting eye research, grant writing and research techniques, in particular to ensure opportunities to acquire the research experience and skills in the new OST curriculum**
- **maintaining and developing the College's research funding commitments to support trainees aspiring to a career in academia**
- **monitoring the academic ophthalmology workforce as part of RCOphth manpower/workforce planning**
- **contributing to Academy of Medical Royal Colleges work on clinical academia including monitoring academic training awards by specialty**
- **working with the Research Leads in the RCOphth Regional Education Teams to stimulate interest and education in research and to facilitate entry into academic pathways**

Facilitating research training in a 'craft' surgical specialty

The RCOphth is responsible for ensuring that the ophthalmology specialty training programme provides an environment that is receptive to research and a framework that supports trainees on the academic career trajectory. The challenge is that academic trainees with protected research time (e.g. ACF on 75% clinical and 25% research or ACL on 50% clinical and 50% research time) have to achieve the same complement of ophthalmic specialist training (OST) syllabus competencies and acquire the same technical microsurgical skills for achieving Certificate of Completion of Training (CCT) as full time trainees. They have to achieve this whilst, in parallel assembling fellowship proposals to gain funding for higher research degrees (PhD, DPhil, MD or

MPhil) or for postdoctoral research activities. Inflexible clinical training arrangements and placement allocations by clinical departments and programme directors are not infrequent and usually reflect a lack of input from academic trainees themselves¹⁰. This can manifest as:

- a reduction in surgical theatre sessions
- a reduction in Research, Study, Teaching, Audit (RSTA) sessions, which would normally only be applied pro-rata for less than full time (LTFT) trainees or distant clinical placements far away from academic institutions
- fragmented research time (e.g. half day sessions instead of blocks of research time) that precludes completion of core research activities such as laboratory experiments.

As Ophthalmology is a surgically-based or “craft” speciality, maintaining adequate surgical competency amongst academic clinical trainees is essential to build surgical confidence and independence. In order to succeed in academia, clinical trainees not only need to be clinically competent, but they have to excel in research. Integration of clinical domains with intensive enhancement and development of research skills within the academic OST programme is absolutely essential.

To adequately balance both clinical and research activities, the RCOphth commits to:

- **greater flexibility in allocation of clinical placements (e.g. placements closer to academic institutions)**
- **protected research time**
- **protected surgical theatre sessions (eg minimum of two surgical theatre sessions per week) depending on an academic trainee’s needs**
- **robust mechanisms to support and facilitate the trainee’s academic development (e.g. ARCP aligning closely with the requirements of academic trainees)**
- **greater flexibility in managing transitions in training and timing of out-of-programme for research**
- **monitoring progression of academic trainees, including assessment of representation and diversity, so as to identify and address barriers for some groups eg those with caring responsibilities**

Sustaining transition to research independence

A schematic roadmap of the academic ophthalmology career pathway and examples of funding opportunities is shown in Figure 2.

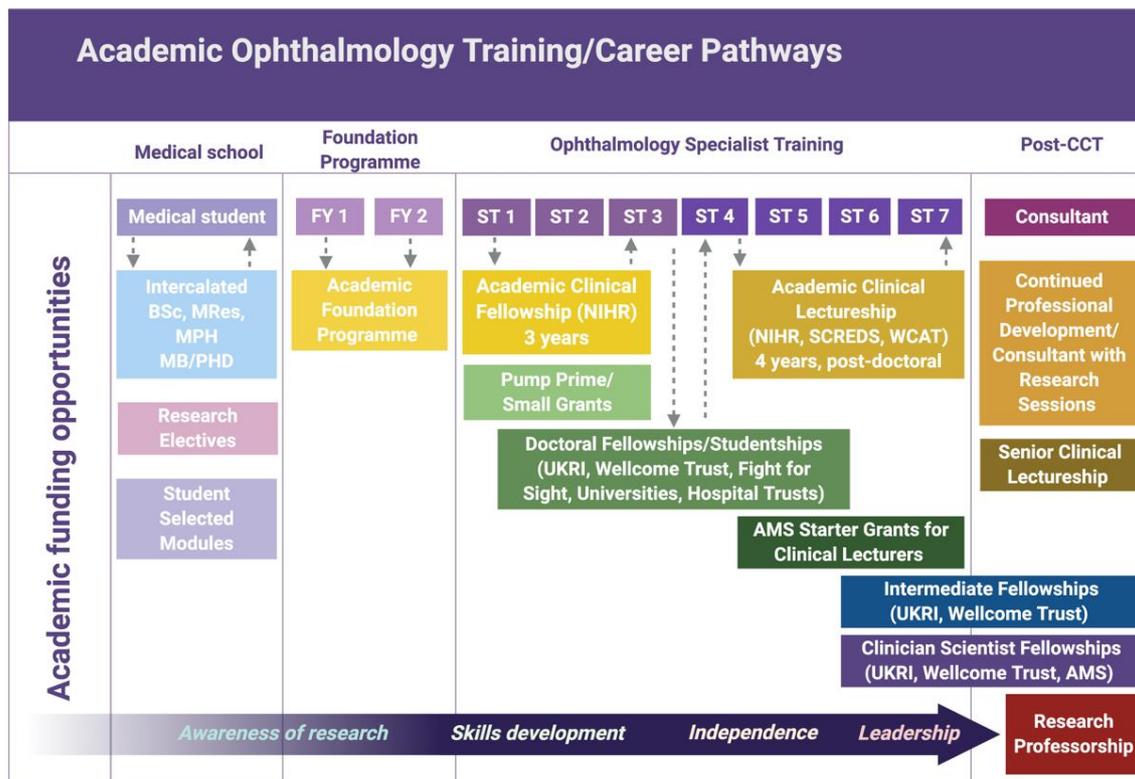


Figure 2. Schematic diagram of the academic ophthalmology career pathway, highlighting the funding opportunities available and the flexible transitions between clinical to research training.

The transition to research independence is a critical time for academic clinicians/postdoctoral lecturers. Key activities may include collecting preliminary data for post-doctoral or higher fellowship applications, starting a new line of investigation that differs from their research supervisors, and beginning to establish a network of international research collaborations. To facilitate this, personal funding, most commonly NIHR, Scottish Clinical Research Excellence Development Scheme (SCREDS) or MRC clinical fellowships or rarely a tenured university/HEI clinical lecturer post must be secured. Further, post-doctoral pump priming grants, such as those available from the Academy of Medical Sciences and other charities/trusts must be obtained. These create protected research time and project costs, provide salary support, and fund collaborative placements abroad to sustain academic ophthalmologists through this critical time. Vision and eyes research can encompass several research themes, such as ageing, inflammation,

neurosciences, infectious diseases, child health, or public health. This is both an opportunity ie academic ophthalmologists can apply to a wide range of funding sources – and a challenge ie academic ophthalmologists are competing with those from other specialties or pressing national clinical priority areas. Postdoctoral clinician scientists in vision science currently receive less start-up funding than their non-clinical PhD scientist counterparts¹¹. The proportion of all ophthalmology trainees who are in NIHR Integrated Academic Training posts (ACF and ACL) posts has declined from 5.7% in 2016 to 4.2% in 2018, which is lower than all other surgical specialties (e.g. 11.1% neurosurgery and 8.9% otolaryngology in 2018), Whilst the total number of ACF and ACL posts in which ophthalmology is a potential allocation has increased from 1.6% to 2.9% between 2014 and 2019 the actual proportion appointed to ophthalmology has not increased commensurately (1.1% appointed in 2014 and 1.5% in 2019). Equivalent data for post-doctoral ophthalmologists outside the IATS scheme are not readily available.

RCOphth commits to addressing this bottleneck by supporting our early-career academic ophthalmologists with

- **signposting to high quality mentoring schemes and mentors**
- **high visibility on RCOphth website (a new ‘Academic and Research’ tab) of high quality resources for developing research ideas and funding applications including the excellent [RCPCH Academic Toolkit](#)¹²**
- **maintaining and developing the College’s research funding commitments to support early career academic ophthalmologists**
- **working to maintain and expand where possible NHR IATS posts in ophthalmology**

Enabling and Retaining senior academic clinicians

Clinical academic life often delivers a tension between a University’s stretching expectations of research and educational excellence and NHS commitments and deliverables. Line management can be blurred, so it remains critical that joint appraisals take place, with the development of personal development plans that are cognisant of the expectations of both higher education and NHS organisations, in keeping with the Follet principles and statutory guidance from [NHS Employers](#).

Furthermore, growing clinical, administrative and managerial responsibilities are the main factors that adversely affect the morale and academic productiveness of senior academic clinicians¹³.

Many academic clinicians are under greater time pressure to deliver revenue-generating surgical services for their ophthalmology departments compared to non-surgical medical departments¹⁴.

Ophthalmology remains the highest volume outpatient speciality in the NHS.

Senior academic clinicians also provide essential mentorship and guidance to inspire a new generation of clinician scientists and this requires time.

Despite research being 'business and mission critical', there remain pockets of deep-rooted cultural resistance, implied "clinical and surgical inferiority" and "income compression" of academic clinicians by some of their non-academic peers and even active discouragement of junior clinicians from pursuing an academic career^{8,11,15}.

It is imperative to continue a live dialogue with a strategy of engagement within the leadership of clinical departments, NHS Trusts, higher education institutions, funding bodies and governmental agencies, so that the added value that senior academic clinicians bring in translating research discovery to clinical practice in ophthalmology is maintained¹⁶.

RCOphth is committed to supporting senior academic clinicians through:

- **Promoting the status of academic ophthalmology in its workplans to deliver the current and future Strategy**
- **Active support for the creation of tenured clinical academic posts in ophthalmology**
- **Active engagement with the UK Government Research & Development Roadmap, and the expected R&D People and Culture Strategy,**
- **Evaluation of trends in academic ophthalmology workforce, including assessing equality, diversity and inclusion**

Footnote:

"Full Time Equivalent (FTE) measures an individual's working hours as a proportion of their standard full time contract. This means that a person who worked 3.75 hours of a 37.5 hour contract would count as 0.1 FTE and somebody who worked 37.5 hours would count as 1.0 FTE.

FTE is based on each individual's contract, which means that full time hours will vary." NHS Digital

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