

ACADEMIC OPHTHALMOLOGY AS A CAREER

Academic Ophthalmology is the combination of ophthalmic clinical practice with academic research. A number of academic ophthalmology departments exist in the UK, led by Professors. The departments usually consist of Readers and Senior Lecturers or senior research fellows, who are frequently consultants but may be non-clinical academics, and academic clinical trainees. Clinical academics often work closely with non-clinical university academics either the same department or elsewhere within universities. Clinical academics undertake research, teaching and administration, along with their clinical work. The research may be patient based (such as clinical trials, epidemiology and health service research), or laboratory based research, but often it is a combination of the two. The staff may be employed by Universities and have an honorary clinical appointment or visa versa but in either case their timetable will typically include clinical and research sessions each week. The proportion of clinical to research work varies but most will work a contract that is 50:50 university to NHS commitments which amounts to 3-4 clinical sessions per week, perhaps including a theatre session and two clinics. The exact ratio of clinical to research time in may depend on the type of funding available,

Clinical medicine is largely based on scientific principles. Modern medical practice encourages evidence based medicine, cost effective delivery of services, individualised medical care and the development/testing of new treatments. These priorities coupled with powerful research technologies and the demand for better treatments has created a need for clinicians who are also trained scientific researchers. The Waldport Report (2005) produced by the Modernising Medical Careers initiative (MMC) and UK Clinical Research Collaboration (UKCRC) made a series of recommendations to address the perceived deterrents to clinical academic careers for clinicians. One of the major recommendations was the development of specialist academic training programs in partnership between universities, local NHS trusts and deaneries.

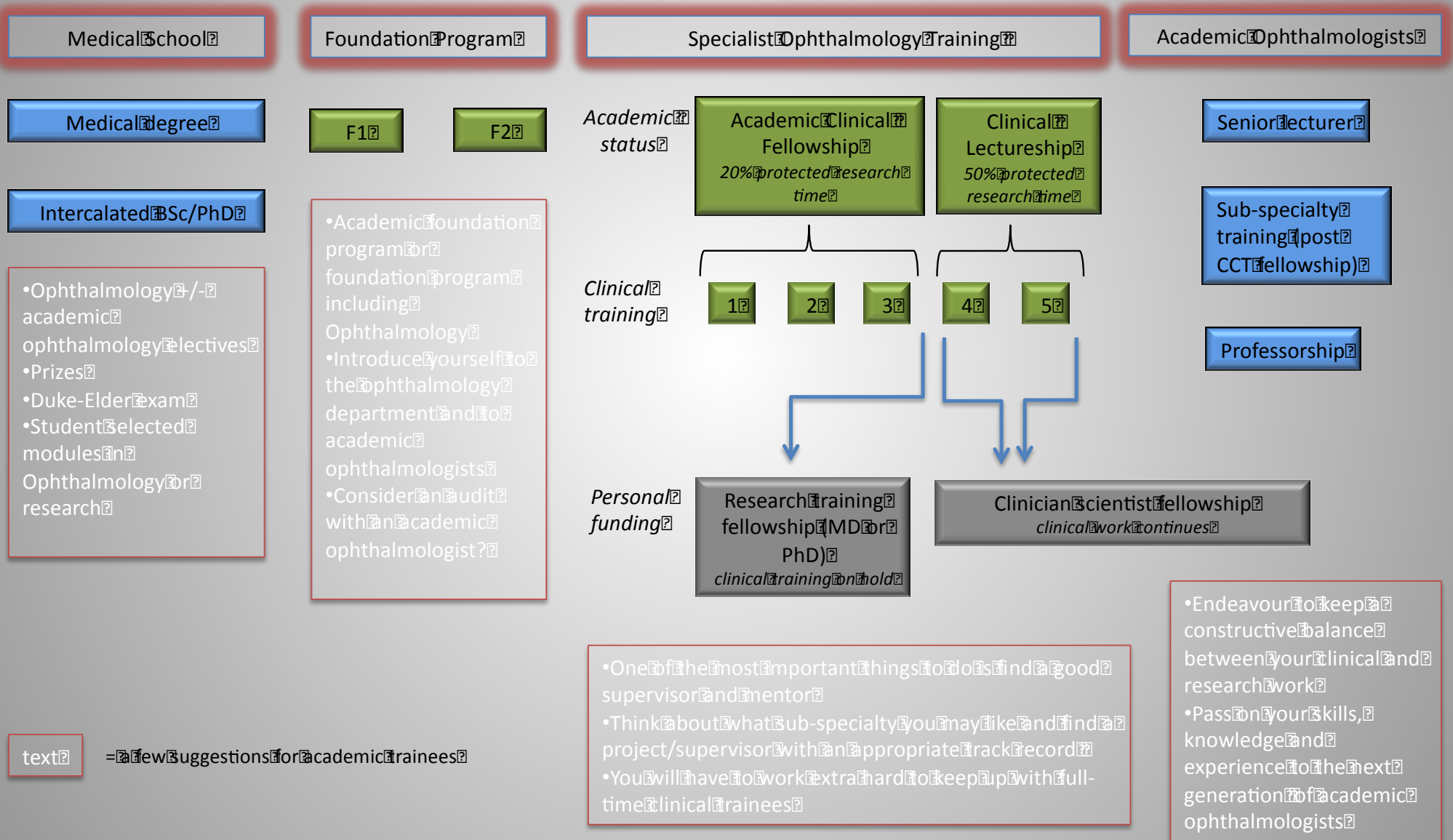
CAREER PATH

Following the Waldport Report, the NIHR Integrated Academic Training pathway was developed (NIHR stands for National Institute for Health Research) This created a new career pathway designed to safeguard workforce planning and create a more formalized and streamlined career development pathway for the training of world-leading academic clinicians.

Clinical academics on the Integrated Academic Training pathway undertake ongoing clinical specialty training in the same way as Specialty Training Registrars (STRs) under the MMC/Gold Guide pathway, or Specialist Registrars (SpRs) under the Orange Guide, but receive funded, protected time to undertake academic training and research projects hosted by their University Medical School. One of the initial aims of the Waldport report was to create flexibility in the training of academic clinicians. Therefore, although a clearer pathway has been created for academic clinicians, it is intentionally flexible allowing entry or exit at many stages during training.

The graphic below, adapted from the 2005 Waldport report represents the NIHR integrated academic clinical training pathway as relevant to Ophthalmology trainees. Some suggestions for career development are detailed in the red boxes.

Integrated academic training in ophthalmology



Further information about academic clinical training is available can be found at www.foundationprogramme.nhs.uk and www.nihrtcc.nhs.uk and the Walport 2005 report can be downloaded from the NIHRTCC site.

Below is some information and suggestions about each stage of academic training from medical school to a final post.....

MEDICAL SCHOOL:

- Clear information and advice should be available to all medical students about academic careers as part of career advice provided by medical schools. If you are considering an academic career your medical school should make this available to you.
- Many medical schools offer courses with special study modules offering exposure to medical research. Try to work with leading clinical academics (preferably in ophthalmology) in addition to research scientists in order to understand the role of clinician scientists. Many medical degrees also offer the chance to undertake a BSc or equivalent. Bursaries and scholarships exist to avoid financial penalty to potential students and these courses can offer an excellent early exposure to research.
- Conversion from an intercalated BSc to a PhD is also being increasingly offered to medical students and may be considered.
- Medical school electives in ophthalmology can offer an exciting glimpse into ophthalmology and academic ophthalmology throughout the world and are strongly recommended for anyone considering a career in ophthalmology.
- Ophthalmology is a competitive specialty. Academic ophthalmology even more so. Any activity, which demonstrates a clear dedication to ophthalmology or academia at an early stage, is likely to benefit the portfolio any aspiring academic ophthalmologist. Many medical schools offer student selected modules and chances to complete clinical audits and even ophthalmology student prizes. Even better, if you can be an author/co-author of a research paper whilst at medical school this will be a great advantage when applying for academic training posts later on. Find out what is available in your local department/medical school and contact the department directly. The Patrick Trevor-Roper Undergraduate Travel Award www.rcophth.ac.uk is open to all undergraduate medical students from the UK and Eire only. There are two awards to be made annually, each for the sum of £550. This money can be used to fund electives in ophthalmology and may be spent on travelling or subsistence.
- The Duke Elder Undergraduate Prize Examination www.rcophth.ac.uk takes place once a year in Medical Schools throughout the country. This is a competitive national EMQ examination run by The Royal College of Ophthalmologists and is highly recommended for all aspiring ophthalmologists, especially aspiring academic ophthalmologists.

FOUNDATION PROGRAM (F1+F2):

Academic foundation programs (AFPs) have been designed to allow the acquisition of clinical training skills and competencies alongside 'exploring' a career in research or teaching. There are currently approximately 450 AFPs across the UK which include subjects as diverse as e-learning and management.

The academic foundation year (usually in F2) offers the first step on the integrated academic training path and provides four months of protected research time either as a block or as a day release program throughout the year. As is the case for all stages of a research clinician's career, trainees are expected to maintain the same clinical skills as their colleagues on purely clinical ophthalmology training programs. This requires the trainee to work 'harder or smarter'. It is important to **note that recruitment to the AFP posts is earlier than the purely clinical national foundation programs** and are typically advertised a year before starting. More information is available at the UKFPO website (<http://www.foundationprogramme.nhs.uk>).

Many academic foundation year trainees will subsequently pursue further academic/clinical training but it is important to remember that trainees may also subsequently enter purely clinical programs, become pharmaceutical researchers or pursue many other varied career paths. An AFP in ophthalmology or academia offers an excellent start to a variety of future careers.

ACADEMIC CLINICAL FELLOWSHIP (ACF):

An ACF in Ophthalmology is a three year program developed by the NIHR comprising 75% specialist clinical training (as an ST1-3) but with funding to 'buy back' 25% of the trainees time. Programs are often changing but there are currently 15 or so ACF posts in Ophthalmology nationally. Successful applicants are awarded a National Training Number (Academic) (NTN(A)) upon appointment to these programmes. It is not necessary to have completed an academic foundation program, but any evidence of dedication to a research career is likely to enhance applicant's success when applying for a competitive ACF. The 25% dedicated research time may be taken as a day release or a dedicated research block and provides time for the acquisition of generic and focussed research skills. ACF programmes may include undertaking an MRes or MSc higher degree. The main purpose of the ACF programme is to prepare for applications for the next phase of the academic career pathway, a research training fellowship that incorporates a PhD, or sometimes MD. These fellowships are often highly competitive and are offered from many sources including the Medical Research Council, Wellcome Trust and NIHR.

RESEARCH TRAINING FELLOWSHIPS (RTF):

When an ACF is successful in being awarded a research training fellowship he/she will then be expected to complete their fellowship (usually full time) whilst often having provision for ongoing clinical experience to allow skills in clinical ophthalmology to be maintained. This generally involves going "out of programme". During the research training fellowship your salary will be provided by the funding body and will usually be matched to that of a clinical trainee, but without on-call banding. Most fellowships will run for 3 years and fellows will be expected to for a PhD, or sometimes an MD. For most trainee clinical academics this period of research is an extremely exciting time, which provides many opportunities to attend meetings, contribute to expert groups, form collaborations and in many cases travel to other research facilities.

CLINICAL LECTURESHIPS (CL):

Following completion of the training fellowship the trainee can then enter a Clinical Lectureship post. This transition is conditional on satisfactory progress in both academic and clinical training, including attainment of a higher degree or educational qualification. Programs are in the early stages to date but there are currently 15 or so CL trainees in Ophthalmology nationally. If the academic trainee is unsuccessful in this transition or decides that they do not wish to continue to pursue an academic career he / she can return to a standard clinical training programme. The CL will provide the trainee with the opportunity to complete his / her clinical training in conjunction with postdoctoral research career development or higher educational training. Typically CLs will have a timetable with 50% research and 50% clinical training time. This period will last up to last 4 years and at the end of this phase the trainee will have completed additional post-doctoral research training in addition to completing his / her clinical training (CCT). Many trainees will apply for clinician scientist fellowship or intermediate fellowships during this period, which can provide funding for 3-5 years and can bridge the gap to a permanent academic/clinical position as a senior lecturer or Professor. There are 13 funding bodies for recognised Clinician Scientist schemes. Clinician Scientist awards (from MRC, Wellcome etc.) are highly competitive, but attaining one of these applies a clear career trajectory towards a permanent academic position.

SENIOR LECTURERS AND PROFESSORS:

Following completion of training and whilst completing intermediate fellowships of clinician scientist fellowships academic Ophthalmologists will secure permanent posts as Senior Lecturers or Professors through collaboration between universities, grant funding bodies and NHS trusts. Many funding arrangements exist and are often initially for a 3-5 year basis but are 'expected' to become permanent by agreement from universities. Further prestigious grants are usually applied for by academic ophthalmologists during their career such as NIHR Senior Investigator awards, Senior Clinical Fellowships and program grants.

Note

It is important to note that the academic training program is a relatively new pathway and in recognition of this, opportunities to join the pathway at all stages are provided. Similarly, if an academic trainee is unsuccessful or decides not to pursue an academic career at any point in the training programme, he / she are able to return to a standard clinical training programme, subject to satisfactory outcomes from joint academic and clinical appraisal. Their training number reverts to an NTN (rather than NTN_a).

SOME Q AND A

When should I start to plan for an academic ophthalmology career?

As early as possible! Ophthalmology is extremely competitive and academic training programs are becoming more and more popular. A common criticism of modern medical training is a lack of flexibility especially at the early stages such that young doctors and medical students are required to decide on career paths at a much earlier stage than in the past. As detailed above, provisions are made for trainees to join academic programs at almost every stage however; it is possible that these opportunities will decline in time. If you are interested in academic ophthalmology, we would recommend that you try to meet with a range of people to discuss your career from senior academics through to clinical academics who are just starting on this career path. Many senior academics will be happy to give you advice, and there is no harm in contacting them.

Will academic ophthalmology exclude private work in my future career?

No. Private clinical work is still possible as an academic Ophthalmologist although many will be very busy people and tend to have less time for private work than those with pure NHS clinical commitments.

What if I decide that academic Ophthalmology is not for me?

It is anticipated that a majority of doctors who start on an academic career track will not end up being Professors. People may decide that it is not for them or they do not succeed in progressing up the ladder. There is always provision within academic training programmes to switch from an NTN_a training numbers to a purely clinical training NTN. If you just “dip your toe in the water” or drop out at anytime along the way this will not have been a waste of time. The almost universal experience is that doctors feel that their academic experiences have enhanced their clinical practice, even if they do not ultimately end up doing a lot of research or teaching.

Why do all academic ophthalmologists I speak to seem to have had different career pathways?

The current academic ophthalmology career pathway is very new. No one has completed the pathway from start to finish yet and previous career progression was far less structured.

WHAT TO THE EXPERTS (AND TRAINEES) THINK?

There is no substitute for a face-to-face meeting with someone in the know. However, in order to get some thoughts from those who currently walk-the-walk, we put some common questions to some academic ophthalmologists and those in academic training. Below are some of their thoughts:



QUESTION: “WHO MAKES A GOOD ACADEMIC OPHTHALMOLOGIST?”

Answer: “Someone who is inquisitive, loves the challenge of scientific endeavour, has good Leadership and mentorship skills and is approachable. Someone who is generous with his or her time.”

Andrew D Dick MD, FRCOphth, FRCS, FRCP, FMedSci
Professor of Ophthalmology
Head of Academic Unit of Ophthalmology
University of Bristol



QUESTION: “HOW DOES YOUR ACADEMIC ROLE INFLUENCE YOUR CLINICAL ROLE AND VISA-VERSA?”

Answer: “It makes me critically appraise the treatments I give patients and visa-versa, seeing patients helps me to direct my research so it is clinically relevant.”

Andrew Lotery MD, FRCOphth
Professor of Ophthalmology
University of Southampton
Editor of EYE



QUESTION: "IS EYE DISEASE PARTICULARLY APPEALING FOR RESEARCH"

Answer: *"Definitely. Eye research is often at the cutting edge of medical research and has many 'firsts' including proof of concept studies. The eye offers unique possibilities for gazing into the CNS with tissue imaging and detailed observation in vivo. There is also an in built control (the other eye!)"*

Mr Jay Self PhD, MRCOphth
Former MRC clinical training fellow
SpR trainee in Wessex Deanery



QUESTION: "HAVE YOU HAD ANY 'EUREKA MOMENTS' IN YOUR ACADEMIC CAREER SO FAR?"

Answer: *"Yes. Seeing the results of an experiment which may change the way we manage inflammatory diseases for patients in the future."*

Mr Richard Lee PhD, MRCOphth
NIHR Clinical Lecturer in Ophthalmology
University of Bristol and Bristol Eye Hospital



QUESTION: "WHY DO YOU LIKE BEING AN ACADEMIC OPHTHALMOLOGIST?"

Answer: *"I never have a routine day. I have a mix of clinical and research work which keeps me stimulated and colleagues tend to refer interesting & challenging clinical cases to solve"*

Mr Parwez Hossain PhD, FRCS (Ed), FRCOphth,
Senior lecturer in Ophthalmology,
University of Southampton



QUESTION: "WHAT DO YOU LIKE THE MOST ABOUT YOUR JOB?"

Answer: "When things are going well, and the funding falls into place, you have the opportunity to really explore new ideas- there is nothing quite so exciting as going into the unknown. I also really enjoy the wonderful partnerships and collaborations you can forge. Often these lead to really deep and lasting friendships with like-minded people. I don't think work can get much better than that!"

Dr Marcela Votruba PhD, FRCOphth
Honorary consultant and senior lecturer
Cardiff University



QUESTION: "WHY DID YOU CHOOSE ACADEMIC OPHTHALMOLOGY"

Answer: "Academic ophthalmology provides a unique balance between clinical and research activities which is always interesting and never monotonous."

Srini Goverdhan MB BS MD PhD MRCOphth
Senior registrar and prospective HEFCE lecturer
University of Southampton



QUESTION: " WHAT ARE THE MOST IMPORTANT SKILLS AN ACADEMIC
OPHTHALMOLOGIST SHOULD HAVE?"

Answer: "Determination to succeed allied to curiosity and an aptitude for original thought."

Professor of Ophthalmology & Matrix Biology
Consultant Ophthalmologist

Manchester NIHR Biomedical Research Centre



**QUESTION: “ DO YOU THINK THE FUTURE IS BRIGHT FOR ACADEMIC
OPHTHALMOLOGY?”**

Answer: *“More medical research is taking place now that at any moment in history and academic ophthalmologists are leading the way in basic science, translational research and clinical trials. As people live longer, ophthalmology's substantial share in diseases of ageing becomes even more important, and this is being reflected by an increased share of research funding.”*

Tiarnan Keenan MB BS MRCOphth
ACF and PhD student
Manchester University

FINAL WORD

Academic ophthalmology can offer an extremely rewarding career. As clinicians we are often at the cutting edge of modern medical care and as scientists at the forefront of medical science. By having a foot in either camp the academic ophthalmologist is uniquely poised to understand the translation of one to the other. The aspiring academic ophthalmologist needs to be enthusiastic and driven to find answers to difficult questions in addition to providing day-to-day clinical care to patients. It is not an easy road, but can offer unique opportunities for autonomy, scientific endeavour and collaboration with like-minded people.

