

## **Academic Foundation Programme University Hospital Aintree**

**Academic Foundation Lead: - Dr Nicola Goodson**

**Medical Education for Foundation Programme:-Dr Raj Kumar & Dr Robin Jones**

**Postgraduate Medical Education lead: - Dr Lisa Davies**

**Integrated Clinical Academic Training – ICAT – Lead: Professor Robert Moots**

**Integrated Clinical Academic Training – ICAT – Project Officer: Mrs Debbie Sweeney**

### **General information**

There are 9 Academic Foundation Programme (AFP) posts at University Hospital Aintree NHS Foundation Trust & The Walton Centre NHS Foundation Trust.

University Hospital Aintree provides both acute and elective secondary healthcare services to North Liverpool, South Sefton and surrounding areas. It provides a number of specialist services and hosts the Regional Trauma centre.

The Walton Centre is a dedicated Neurosciences Centre, providing specialist neurology and neurosurgical care to the North West.

### **The Posts:**

The rotations include medical and surgical specialty attachments as well as a 4 month attachment in General Practice in F2.

#### **During the F1 year:**

AFPs will have a 5 week protected academic block, which is nested into the acute medicine/emergency medicine attachment. During this academic block in F1, the AFP will be supported to plan their research or education project and to start to apply for any necessary ethics, sponsorship, HRA, or other regulatory approvals and gain their Good Clinical Practice training. This ensures that there are no barriers to conducting their planned project during the 4 month academic block during the F2 year. AFPs are generally encouraged to start to write a review article during their F1 year.

#### **During the F2 year:**

AFPs will have a 4 month protected academic block, during which they will complete their academic project (either education or research). In addition, those AFPs in education academic posts, will be supported in studying for the Certificate of Medical Education.

### **Post descriptions:**

At the Aintree site there are 3 academic foundation posts in Medical Education (Tracks 14, 15 &16). These are overseen by the post-graduate medical education lead Dr Lisa Davies.

There are 6 research posts. Each post is linked to a clinical subject area and the research posts and the lead academic supervisors are listed below:

**6 Research Posts:- Listed by specialty and lead supervisor**

Triplet 14: Gastroenterology: Dr Keith Bodger  
 Triplet 14: Rheumatology: Dr Nicola Goodson  
 Triplet 15: Respiratory: Drs Andrea Collins and Dan Wootton  
 Triplet 15: Endocrinology: Professor John Wilding  
 Triplet 16: Neurology: Professor Anthony Marson  
 Triplet 16: Otolaryngology - Head and Neck surgery: Professor Terry Jones

Triplets 14a/15b/16c: Education: Dr Lisa Davies

**Detailed post descriptions**

**Education AFP Posts (Triplet 14 – 15 - 16)**

**Academic Foundation Education Lead: - Dr Lisa Davies**

**Email: [LISA.DAVIES@aintree.nhs.uk](mailto:LISA.DAVIES@aintree.nhs.uk)**

Triplet 14	F1		F1	F1	F2	F2	F2
<b>Track 14a (AFP)</b>	Emergency Medicine		General (Internal) Medicine	General Surgery	Academic - Education	General Practice	General (Internal) Medicine
Additional Post Description	Clinical elements – Emergency Medicine	Academic 5 week Block Education	Haematology	Urology	Education		Gastroenterology
Post Location	Aintree		Aintree	Aintree	Aintree	TBC	Aintree

Triplet 15	F1	F1	F1		F2	F2	F2
<b>Track 15b (AFP)</b>	General (Internal) Medicine	General Surgery	Emergency Medicine		General Practice	General (Internal) Medicine	Academic - Education
Additional Post Description	Respiratory	Orthopaedics	Clinical elements – Emergency Medicine	Academic 5 week Block Education		Diabetes	Education

Post Location	Aintree	Aintree	Aintree	TBC	Aintree	Aintree
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Triplet 16	F1	F1		F1	F2	F2	F2
Track 16c (AFP)	General Surgery	Acute Medicine		General (Internal) Medicine	Specialty	Academic - Education	General Practice
Additional Post Description	ENT	Clinical elements – Acute Medicine	Academic 5 week Block Education	Gastro	A&E Medicine	Education	
Post Location	Aintree	Aintree		Aintree	Aintree	Aintree	TBC

The 3 academic education posts (Triplets 14, 15 and 16) are led by Dr Lisa Davies. During the F1 year there is a 5 week academic block nested into the emergency medicine block. During this time the AFP will be supported in developing an education related project and assisted in finding an appropriate academic/education supervisor for their work. This short period of protected academic time should allow the AFP to start obtaining any regulatory approvals (Ethics, sponsorship and Research and development approval) with the aim of getting ready to conduct their project during their 4 month academic block in their F2 Year.

## **Education**

### **Rotation**

During F1 the trainees will be based at University Hospital Aintree and will have 5 weeks of dedicated time to build a foundation on the basic principles of medical education including teaching, curriculum development, assessment and pedagogic research. During the year, with the support of the Medical Education Unit at the School of Medicine, trainees will be encouraged to plan the design of an educational research project that would be carried out during the F2 year. There will also be an opportunity to undertake a Postgraduate Certificate in Teaching and Learning.

During F2, the post holder will work University Hospital Aintree for 8 months. Trainees will be based at the postgraduate Medical Education department at University Hospital Aintree for 4 months but will have opportunity to work with Simulation instructors at the Aintree Simulation centre as well as the with the undergraduate medical education teams based in the University of Liverpool, School of Medicine.

Training and education opportunities include:

Hands on teaching experience in different educational settings, facilitation of PBL and clinical skills sessions and involvement in anatomy teaching within the Human Anatomy Resource Centre (HARC)

Experience of curriculum development and assessment, direct working with the curriculum and assessment teams to gain experience of curriculum review and organisation, design of assessment (MCQ's and OSCE stations), standard setting and quality assurance. In addition, there will be scope for exploring other areas of medical education including admissions, widening participation and educational policy.

Research project: Trainees will be expected to become involved in a pedagogic research project during their 4 months. This could either be an existing project within the unit or a new project (depending upon ethics approval and funding). Depending upon the project trainees will learn about educational theory, design of educational research, data collection (quantitative and / or qualitative), data analysis and synthesis of findings. The current research expertise within the unit is on professionalism, adult learning, workplace learning and technology enhanced learning.

### Research posts

#### Department of Gastroenterology (Triple 14)

**Academic Foundation Programme Gastroenterology Lead: Dr Keith Bodger**

Email: [KEITH.BODGER@aintree.nhs.uk](mailto:KEITH.BODGER@aintree.nhs.uk)

Triplet 14	F1	F1	F1		F2	F2	F2
Track 14b (AFP)	General (Internal) Medicine	General Surgery	Emergency Medicine		General Practice	General (Internal) Medicine	Academic - Research
Additional Post Description	Haematology	Urology	<i>Clinical elements – Emergency Medicine</i>	5 wee block of Research Gastro		Gastroenterology	Gastro
Post Location	Aintree	Aintree	Aintree		TBC	Aintree	Aintree

### **Rotation**

This two year rotation has 5 weeks dedicated academic time set aside in F1 and 4 months in F2 within the Department of Gastroenterology. The rest of the rotation is with appropriate specialties in University Hospital Aintree including at least one clinical post in Gastroenterology. The overall Foundation Programme will provide the appointee with their Foundation competencies as well as excellent opportunities for research.

### **Departments to which academic posts will be affiliated**

Directorate of Gastroenterology, Aintree University Hospitals NHS Foundation Trust

### **Academic interests of department**

The University Division of Gastroenterology is based on the main University Campus with a member of the academic unit (Dr Keith Bodger, Senior Lecturer and Consultant Gastroenterologist) located at the Digestive Diseases Centre at University Hospital Aintree. The main research focus at the Aintree campus is health services and clinical research in gastroenterology including collaborative work with the Department of Clinical Evaluation located in the clinical sciences centre. The research is supported by research nurse and postgraduate research students (MD/PhD) on site and administrative and research management resource within Professor Pearson's unit.

The Digestive Diseases Centre is a tertiary referral and cancer centre combining both medical and surgical specialties within a single directorate. Medical gastroenterology provided by seven

consultants and the unit has one of the highest levels of endoscopic activity in the country with state of the art facilities. This provides ample opportunities for clinical research.

The clinical and health services research at Aintree has a growing track record for producing high impact research of direct relevance to daily clinical practice. Two recent health technology appraisals and guidelines from the National Institute of Clinical Excellence have cited the work from the group.

Specific research areas include:

- Development and validation of patient reported outcome measures
- Cost-of-illness and cost-effectiveness of rival therapies
- Development and validation of national quality measures in gastroenterology
- Clinical trials of novel therapies for inflammatory bowel disease

### Academic Component

#### a) *Core Academic Training:*

The academic component of the job will comprise 5 weeks during the rotation in foundation year 1 and a further block of 4 months during foundation year 2. During this time the post holder will gain training in research methods (tailored to their interests) and in parallel undertake research in that will be completed during the block of research in F2 and which will be designed to result in a presentation at a major national or international meeting or publication in peer-reviewed journal. The F1/F2 post-holder will be encouraged to access the relevant local courses that provide an introduction to research, ethics and statistics.

#### b) *Possible specific academic areas of involvement:*

The gastroenterology group can tailor academic programmes according to the interests of the individual, including clinical and laboratory-based projects with a number of potential co-supervisors for projects. The F1/F2 post would be particularly suited to projects linked to national quality measures in gastroenterology (e.g. analysis of routinely collected hospital episode statistic data for England) and outcomes research in inflammatory bowel disease (e.g. development and psychometric validation of novel survey instruments) where funded and ongoing work would provide excellent opportunities to undertake a defined piece of work within the available timescale. The Aintree-based research has achieved consistent and prominent success at national and international meetings and the post-holder will be assigned to a defined project.

### **Department of Respiratory Medicine (Triplet 15)**

**Academic Foundation Programme Respiratory Leads: Drs Dan Wotton and Andrea Collins (Respiratory Medicine)**

**Emails:** [dan.wootton@aintree.nhs.uk](mailto:dan.wootton@aintree.nhs.uk) or [D.G.Wootton@liverpool.ac.uk](mailto:D.G.Wootton@liverpool.ac.uk)

And [andrea.collins@aintree.nhs.uk](mailto:andrea.collins@aintree.nhs.uk) or [Andrea.Collins@liverpool.ac.uk](mailto:Andrea.Collins@liverpool.ac.uk)

Triplet 15	F1	F1	F1	F2	F2	F2
Track 15a (AFP)	Emergency Medicine	General (Internal) Medicine	General Surgery	Academic - Research	General Practice	General (Internal) medicine

Additional Post Description	Clinical elements – Emergency Medicine	5 week block of Research Respiratory	Respiratory	Orthopaedics	Respiratory Research		Diabetes
Post Location	Aintree		Aintree	Aintree	Aintree	TBC	Aintree

### Description of Rotations

This two year rotation has 5 weeks dedicated academic time set aside in F1 and 4 months in F2 within the Department of Respiratory Medicine. The rest of the rotation is with appropriate specialties in University Hospital Aintree including at least one clinical post in Respiratory Medicine (either in F1 or in F2). The overall Foundation Programme will provide the appointee with their Foundation competencies as well as excellent facilities and supervision for research

### Departments to which academic posts will be affiliated

Aintree Chest Centre, Aintree University Hospitals NHS Foundation Trust

Institutes within the University of Liverpool Faculty of Health and Life Sciences

Liverpool School of Tropical Medicine

### Academic interests of department

The University of Liverpool Academic Respiratory Unit is based in the Clinical Sciences Centre (CSC) at Aintree University Hospital. The CSC boasts facilities for laboratory research, clinical research including exercise testing (clinical research suite); lecture theatre, seminar rooms, well-equipped library. The Academic posts are supported by research nurses, PhD and MD students, laboratory technician and Scientific Officer. In the main hospital, the clinical laboratories include embedded research areas using a range of sophisticated physiological testing (muscle force measurement, opt-electronic plethysmography and forced oscillatory mechanics) to evaluate function at rest and during exercise.

The respiratory unit comprises two Professors (K Mortimer and G Devereux) and a Senior Clinical Lecturer (A Collins) and a Senior fellow in Respiratory Infection (D Wootton) who together with around 15 NHS respiratory consultants and rotating SpRs, provide general respiratory services to the local population and a supra-specialist service regionally and further afield. Close collaboration and joint appointments have been developed with the Liverpool School of Tropical Medicine.

There are excellent opportunities for academic training at all stages: Academic F1 and F2 posts, and Clinical Lecturers. The group has a strong track record of both academic and clinical achievements, with an international and national reputation for excellence in the areas of respiratory physiology, infection and delivery of innovative evidence-based care. In 2011 we carried out a Respiratory Research Review and identified key themes and strengths. Research is focused around Infection & Inflammation, Airways Diseases & Physiology, Cancer and Global Health. F1 and F2 projects are found within Infection & Inflammation or Airways Diseases & Physiology.

### Clinical research includes:

- Recovery from pneumonia including studies of biomarkers, X-rays in diagnosis, macrophage function and microbiota in determining outcome.
- Home based care for early discharge and improved recovery in pneumonia.
- Use of induced sputum in diagnosis and management of severe asthma and other airways diseases.
- Immunoglobulin function in inflammatory lung diseases
- Effect of smoke on lung redox and the effect of redox perturbations on defence against infection.
- The role of pneumococcal carriage in modulating host defence against infection.
- Viral infections and disruption of pulmonary epithelial defence.
- Exercise tolerance and recovery from cancer treated with chemotherapy and surgery.

### Academic Component

#### a) Core Academic Training:

The academic component of the job will comprise 5 weeks during the rotation in foundation year 1 and a further block of 4 months during foundation year 2. During this time the post holder will gain training in core research methods (tailored to their interests) and in parallel undertake research that will be completed during the block of research in F2 and which will be designed to result in a presentation at a major national or international meeting or publication in peer-reviewed journal.

#### b) Possible specific academic areas of involvement:

The Respiratory group can tailor academic programmes according to the interests of the individual - spanning the whole gamut of research from laboratory science through to clinical science and epidemiology. There will be a choice of senior full-time university academics to supervise projects and either clinical or laboratory-based projects to undertake. There is also an active programme of seminars, journal clubs, courses and updates to which the academic F1/2 post-holder will be encouraged to attend and present at. The academic F1/F2 post-holder will also be supported to attend relevant courses providing an introduction to research methods (whether laboratory sciences, clinical science or epidemiology) and take part in a research project that will lead to a significant outcome during the tenure of the post – such as presentation of their work at a major meeting or publication in peer review journal.

### Neurology AFP Post (Triplet 16)

Academic Foundation programme Neurosciences Lead: Professor Tony Marson

Email: [marjon01@liverpool.ac.uk](mailto:marjon01@liverpool.ac.uk)

Triplet 16	F1	F1	F1	F2	F2	F2
Track 16b (AFP)	General (Internal) Medicine	General Surgery	Acute Medicine	General Practice	Specialty	Academic - Research

Additional Post Description	Gastro	ENT	Clinical elements – Acute Medicine	5 week block of Research Neurology		A&E Medicine	Neurology Research
Post Location	Aintree	Aintree	Aintree		TBC	Aintree	The Walton Centre

## **Neurology**

### **Neurological Science Research Unit Walton Centre for Neurology and Neurosurgery (in conjunction with Aintree)**

#### **Rotations**

This two year rotation has 5 weeks dedicated academic time set aside in F1 and 4 months in F2 within the Neuroscience Research Unit. The rest of the rotation is with medical and surgical specialties at Aintree and in GP. The overall Foundation Programme will provide the appointee with their Foundation competencies as well as excellent facilities and supervision for research

#### **Departments to which academic posts will be affiliated**

Neurological Science Research Unit, School of Clinical Science, University of Liverpool and Walton Centre for Neurology and Neurosurgery

#### **Academic interests of department**

The main research strengths of the Neuroscience Unit are Epilepsy, Brain Infections and Pain.

The Unit is housed in the Clinical Sciences Centre (CSC) adjacent to the Walton Centre for Neurology and Neurosurgery, and has strong links with many University Departments; in particular the research laboratories of the Brain Infections Group are within the Medical Microbiology Division.

The Clinical Sciences Centre boasts extensive state of the art facilities for laboratory research (with extensive suite of laboratories geared for molecular and cellular biology), clinical research (clinical research suite, supported by rheumatology research nurses); lecture theatre, seminar rooms, well-equipped library and full research administrative support – all housed under one roof.

The Neuroscience unit comprises four Professors (G Baker, neuropsychologists, A Marson and T Solomon, neurologists, and Pain specialists), a clinical senior lecturer (A Goebel) two clinical Lecturers), two non-clinical lecturers and numerous clinical fellows and PhD students.

#### **Walton Centre for Neurology and Neurosurgery NHS Trust**

This is the Regional Neuroscience Centre for adults in the Merseyside Cheshire and North Wales Regions; providing secondary and tertiary care to population approximately 3.5 million. It is the UK's only dedicated Neuroscience NHS Trust, with 30 Consultant



Neurologists supported by an extensive network of nurse specialists, covering most of the neurological sub-specialties.

The Walton Centre has 30 acute neurology and neurosurgery beds, 24 rehabilitation beds, plus 12 day case beds on a specialist patient investigation unit, a neuro-intensive care, high dependency unit. Specialities include neurology, neurosurgery, neuroradiology, including interventional neuroradiology, neurorehabilitation, a pain management programme, plus all the neurology subspecialties such as epilepsy, movement disorders, multiple sclerosis, specialist vascular clinic, headache clinic, neurological infectious disease service

Each week there is a postgraduate clinical meeting, as well as a lunchtime lecture. In addition there are neuroradiology meetings, neuropathology meetings, audit meetings, journal clubs, and formal teaching through the regional postgraduate teaching programme.

### **Training Opportunities**

There are excellent opportunities for academic training at all stages in Neuroscience. In 2007 we established an integrated academic training programme in neurology, which incorporates 4 Academic Clinical Fellowships with two Academic Clinical Lecturerships which are mostly NIHR NCCRCF funded.

The Neuroscience Unit has a strong track record of both academic and clinical achievements, including national awards for excellence and innovation, publication of more than 100 papers, award of more than £5 million of grant income (including Research Council funding), over the last 5 years alone. We have a particular strength in nurturing talent, and encouraging and supporting trainees in attracting their own Wellcome and MRC fellowship funding, and have had successes at training, intermediate and senior fellowship level in recent years

### **Research Areas**

#### **Brain Infections – led by Tom Solomon**

Globally viruses are a major cause of neurological morbidity and mortality, yet they relatively neglected in terms of research.

- The viruses we study include insect-borne viruses, and zoonotic (animal) viruses such as Japanese encephalitis. Although they are common in the tropics, some, such as enteroviruses, also occur in the UK; others, such as West Nile virus and dengue, threaten the UK, especially in view of climate change. More recently we have begun studying viruses of major importance in the UK, including herpes simplex virus.
- Our work ranges from epidemiological, diagnostic and clinical studies through to molecular virological, pathogenesis and treatment studies. I study disease in humans, and also use *in vitro* and *in vivo* models.
- We are exploring the role of virus virulence determinants and the host immune response in the pathogenesis (i.e. how the virus causes the disease). A better understanding of this will lead to better treatments. We also conduct research that

supports the implementation of disease control programmes, and improves patient management.

- Research locations: UK, Southeast Asia (Vietnam, Malaysia, India, Nepal), Africa (Malawi)
- Viruses studied: Japanese encephalitis, Dengue, West Nile, Rabies, Enterovirus-71, Herpes simplex virus

### **Epilepsy - Led by Prof A Marson**

- Clinical Trials of Anti-epileptic Drugs
- Health Systems Evaluations
- Pragmatic Clinical Trials
- Neuropsychological effects of epilepsy and antiepileptic drugs
- Cochrane Epilepsy Group
- Genetic approaches to epilepsy drugs and their adverse events
- Pain – led by Prof T Nurmikko

### **Pain – led by Dr Andreas Goebel**

- Role of functional Magnetic Resonance Imaging in understanding Pain
- Intravenous Immunoglobulin in treating complex regional pain syndromes

### **Academic Component**

#### *a) Core Academic Training:*

The academic component of the job will comprise 5 weeks during the rotation in foundation year 1 and a further block of 4 months during foundation year 2. During this time the post holder will gain training in core research methods (tailored to their interests) and in parallel undertake research that will be completed during the block of research in F2 and which will be designed to result in a presentation at a major national or international meeting or publication in peer-reviewed journal.

#### *b) Possible specific academic areas of involvement:*

The Neurological Science Unit can tailor academic programmes according to the interests of the individual - spanning the whole gamut of research from laboratory science through to clinical science and epidemiology, in our three main theme areas of research Brain Infections, Epilepsy, and Pain. There will be a choice of senior full-time university academics to supervise projects and either clinical or laboratory-based projects to undertake. There is also an active programme of seminars, journal clubs, courses and updates to which the academic F1/2 post-holder will be encouraged to attend and present at. The academic F1/F2 post-holder will also be supported to attend relevant courses providing an introduction to research methods (whether laboratory sciences, clinical science or epidemiology) and take part in a research project that will lead to a significant outcome during the tenure of the post – such as presentation of their work at a major meeting or publication in peer review journal.

**Department of Otolaryngology-Head and Neck Surgery (Triplet 16)**

**Academic Foundation Programme Lead Otolaryngology /Head and Neck Surgery: Professor Terry Jones**

Email: [T.M.Jones@liverpool.ac.uk](mailto:T.M.Jones@liverpool.ac.uk)

Triplet 16	F1		F1	F1	F2	F2	F2
<b>Track 16a (AFP)</b>	Acute Medicine		General (Internal) Medicine	General Surgery	Academic - Research	General Practice	Specialty
Additional Post Description	<i>Clinical elements – Acute Medicine</i>	5 week block of ENT/Head and Neck Surgery	Gastro	ENT	ENT/Head and Neck Surgery		A&E Medicine
Post Location	Aintree		Aintree	Aintree	Aintree	TBC	Aintree

**AINTREE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST:**

**Academic Foundation Programme Post in Otolaryngology /Head and Neck Surgery (ORL-HNS)**

**THE RESEARCH PROGRAMME:**

ORL-HNS constitutes one of the parent specialties of Head and Neck (H&N) surgery. Mersey Head and Neck Oncology Group (MHNORG) is a strong research group within the North West Cancer Research Centre – University of Liverpool (NWCRC-UoL), and the Department of Molecular and Clinical Cancer Medicine. The academic component of this post would be conducted under the auspices of the MHNORG, which constitutes ~45 research staff: 2 clinical Professors and 1 Clinical senior Lecturer of H&N Surgery, a Professor of Molecular Oncology, 4 non-clinical Senior Lecturers, 1 non-clinical lecturer, 2 Honorary Professors, 2 Honorary CSLs, 1 ACF, 1 ACL, 3 NIHR H&N Research Nurses plus ~ 25 PhD/ MD students, representing the largest UK centre for postgraduate research training in H&N specialties.

Since 2007, £5.5 million research funding has been secured from *inter alia*, CR-UK, MRC, NIHR, Wellcome & RCEng and industry. Approx. 250 peer-reviewed publications have been published including in Molecular Cell, PNAS, Journal of Cell Biology, Blood, Clinical Cancer Research, BMJ & Lancet Oncology.

The research component of the AF post will take place in the Department of Molecular and Clinical Cancer Medicine (DMCCM), Institute of Translational Medicine, University of Liverpool. Under the auspices of the MHNORG, led by Professor Terry Jones (TMJ), Professor of Head and Neck Surgery,

Honorary Consultant ORL-HN Surgeon, and the NWCRC -UoL, an extensive research programme in Head and Neck Cancer Surgery, currently exists at the University of Liverpool. The academic strategy of the Programme is structured into four research areas.

1. Basic/Translational/Biomarker Laboratory Research
2. Early and Late phase Clinical Trials with an emphasis on personalised medicine
3. The impact of social inequality in the development and outcomes of head and Neck cancer.
4. Clinical & Outcomes Research covering prognosis, surgical techniques and innovation, Quality of Life (QOL) and functional outcomes, prevention, epidemiology.

The H&N translational research Programme – which, in keeping with the University’s Research Strategy, is based around the delivery of personalised medicine and which is driven by research hypotheses generated from the problems encountered in clinical practice - aims to combine the enhanced research focus on H&N cancer provided by the NWCRC-UoL and its excellent research infrastructure with the exceptional clinical resource provided by the Regional H&N Cancer Unit: a combination which is unique in the UK.

#### **TRANSLATIONAL RESEARCH PROGRAMME:**

Over recent times, the emergence of a new discrete disease entity – HPV associated Oropharyngeal Squamous Cell Carcinoma (HPV +ve OPSCC) has had a major impact on head and neck cancer research worldwide. As a consequence of this our research strategy can be broadly divided into HPV +ve and HPV –ve research programmes.

#### **HPV-ve Squamous Cell carcinoma of the Head and Neck (HPV- SCCHN):**

SCCHN is treated using combinations of surgery, radiotherapy (RT) and chemotherapy [either concurrent with RT (CRT) or as an induction regimen (ICT)]. This uniform, untargeted approach ignores the obvious clinical problem of a wide variation in biological behaviour and treatment response, which is seen between tumours emanating from the same and different anatomical sub-sites. Despite advances in surgical and non-surgical treatments the overall five year survival rates for patients presenting with HPV- SCCHN remains stubbornly resistant to improvement at ~60%.

The clinical challenge which needs to be addressed when treating patients with SCCHN is to maximise survival whilst minimising the detrimental effects of the treatment employed.

1. Ionising radiation forms the mainstay of many treatment regimens utilised to treat SCCHN. Even when successful, the acute toxicities associated with radiotherapy can be severe and even life-threatening whilst the long-term toxicities can result in major functionally debilitating consequences. In addition, many tumours are not cured as they are radioresistant.

Therefore, of major translational research importance is the need to

- a. understand the molecular mechanisms of radioresistance in an attempt to identify clinically relevant biomarkers or novel drugable targets and
- b. to develop, and understand better, the mechanism of action of novel radiosensitising agents.

The ultimate aim of this work is to develop novel radiosensitising agents (RSA) which could be

- i. Delivered systemically or topically prior to delivery of primary or adjuvant external beam radiotherapy with or without chemotherapy or
- ii. Topically and peri-operatively following surgical resection of the tumour (e.g. via a transoral laser approach), prior to the delivery of Intra-Operative Radiotherapy (IORT). An approach which is highly novel, especially with respect to the treatment

of H&N cancer, but which takes advantage of our pioneering transoral laser surgery programme.

In both cases the aim would be to facilitate an overall reduction in the dose of ionising radiation required to effect cure, thereby reducing the likelihood of consequent early and long term adverse effects of radiation treatment.

This Programme of work is jointly supervised by TMJ and Professor Mark Boyd, Professor of Molecular Oncology.

#### **HPV+ve Oropharyngeal Squamous Cell carcinoma (HPV+ OPSCC):**

In contrast to HPV- tumours, HPV+ tumours present in younger, fitter patients who smoke and drink less alcohol than patients diagnosed with HPV- SCCHN. Despite presenting with clinicopathological features (e.g. N2+ and extracapsular spread (ECS)) traditionally associated with poorer outcome, paradoxically, HPV+ tumours are more treatment sensitive and cure rates in excess of 80% are commonplace. However, current chemoradiotherapy based treatments are associated with significant long term toxicity – particularly with respect to swallowing function – and up to 15% of patients treated conventionally may expect to require long-term supplementary enterostomy feeding. Thus, the clinical problem in the context of HPV+OPSCC is to develop novel treatment strategies which will maintain the overall advantageous survival rates whilst reducing long-term toxicity.

To this end, PATHOS is a CR-UK funded Phase II/III trial of risk-stratified, reduced intensity adjuvant treatment in patients undergoing transoral surgery for Human papillomavirus (HPV)-positive oropharyngeal cancer. All patients will receive post-operative intensity modulated radiotherapy (IMRT) as part of 2 post-surgery randomisations: Patients assigned to a pathological intermediate risk group (clear surgical margins and no extracapsular spread (ECS)) will be randomised to receive with 50 or 60Gy IMRT. Patients considered high risk (close or involved margins and/or ECS) will be randomised to receive 60Gy IMRT +/- cisplatin.

The phase II (n=148; 74/randomisation) is powered to detect enhanced swallowing function (10 point difference using the MD Anderson Dysphagia Inventory) in patients receiving de-intensified treatment. The non-inferiority phase III (n=800; 400/randomisation) will confirm functional improvement as well as patient safety. Post treatment swallowing function is directly related to IMRT +/- cisplatin tolerance.

PATHOS-T is the CR-UK funded bioresource collection associated with PATHOS. Five geographically distinct fresh tissue biopsies from the primary tumour, 2 from associated involved lymph nodes as well as blood samples pre-treatment, 6 weeks and 6, 12, 18 and 24 months post-treatment will be taken from all trial patients and stored to GCLP standard in Liverpool.

In collaboration with the Centre for Genomic Research in Liverpool, and collaborators in Southampton, Cambridge and London, DNA and RNA will be extracted from the tissue samples. NGS, RNAseq and ChIPseq technology will then be employed to define `omic` fingerprints of swallowing outcome and therefore IMRT+/-cisplatin tolerance. The geographically distinct primary tumour biopsies will allow investigation of the impact of intratumour heterogeneity and the lymph node tissue will allow the identification of expanded clones critical for metastasis development and treatment failure. The sequential blood samples will be used to define correlative liquid biomarkers based on cfDNA and/or exosome analysis. Any putative biomarker identified during the phase II trial will be assessed for clinical utility in the phase III trial.

The aim of this programme of work will be to define pre-treatment tissue and/or blood based biomarkers of IMRT tolerance, metastasis and treatment failure. A successful outcome will ensure

personalised prognostication and treatment allocation for patients presenting with HPV related OPSCC. The successful candidate will have the opportunity to become involved in the conduct of PATHOS, PATHOS-T and/or the associated programme of translational work.

**CLINICAL TRIALS:**

MHNORG boasts a comprehensive portfolio of early and late-phase clinical trials and opportunities exist for the successful candidate to become involved in the conduct of a particular clinical trial and/or the translational research projects associated with it. (For e.g. please see above)

**THE IMPACT OF SOCIAL INEQUALITY IN THE DEVELOPMENT AND OUTCOMES OF HEAD AND NECK CANCER:**

The NWCRC - UoL and the Department of Public Health and Policy (DPHP), together with Liverpool Health Partners (LHP), have formed collaboration - Liverpool Cancer Inequalities Research Network (LCIRN) - to develop an academic programme in Public Health as it relates to the impact of socio-economic inequalities on cancer outcomes - a major issue in Merseyside/Cheshire region. The successful candidate, could, if they chose, embark on a project to investigate the effect of socioeconomic status on healthcare use and clinical and social outcomes in people with H&N cancer. The research, using comprehensive locally-held datasets, will involve the detailed characterisation of pathways to inequalities in the development, diagnosis and treatment of H&N cancer. The ACF will gain technical expertise in clinical epidemiology and data analysis, in addition to research collaboration skills across a range of disciplinary fields. This novel research initiative will combine the recognised strengths of DPHP - including the WHO Collaborating Centre for Policy Research on Social Determinants of Health - and MHNORG, to initiate a unique programme of multidisciplinary research to improve outcomes and reduce health inequalities in H&N cancer patients.

**Department of Rheumatology (Triplet 14)**

Academic Foundation Programme Rheumatology Lead: Dr Nicola Goodson  
[ngoodson@liverpool.ac.uk](mailto:ngoodson@liverpool.ac.uk)

Triplet 14	F1	F1		F1	F2	F2	F2
<b>Track 14c (AFP)</b>	General Surgery	Emergency Medicine		General (Internal) Medicine	General (Internal) Medicine	Academic - Research	General Practice
Additional Post Description	Urology	<i>Clinical elements – Emergency Medicine</i>	5 week block of Rheumatology research	Haematology	Gastro	Rheumatology research	
Post Location	Aintree	Aintree		Aintree	Aintree	Aintree	TBC

**Rotation**

This two year rotation has 5 weeks dedicated rheumatology academic time (which is taken during the emergency medicine block in the F1 year) and 4 months academic time during the F2 year. The rest of the rotation is with appropriate specialties in University Hospital Aintree. The overall Foundation Programme will provide the appointee with their Foundation competencies as well as excellent facilities and supervision for research

### **Departments to which academic posts will be affiliated**

Directorate of Rheumatology, Aintree University Hospitals NHS Foundation Trust

Musculoskeletal Biology Departments 1 &2, Institute of Aging and chronic disease, University of Liverpool.

### **Academic interests of department**

The rheumatology unit comprises two Professors (RJ Moots, R Cooper), two clinical Senior Lecturers (Drs NJ Goodson and ME Anderson), three NHS consultants (with honorary University posts), two Rheumatology Speciality Trainees and a CMT1 post. In addition there are Academic Clinical Fellows in rheumatology working in the department. The Unit provides general rheumatology services to the local population and a supra-specialist service regionally and further afield – with referrals originating from across the UK. The UK National Centre for Behcet's Disease is directed by Prof Moots at Aintree.

The University of Liverpool Academic Rheumatology Unit, part of the Institute for Chronic Disease and Ageing, is based in the Clinical Sciences Centre (CSC) at Aintree University Hospital NHS Foundation Trust. The CSC boasts extensive state of the art facilities for laboratory research (with extensive suite of laboratories geared for molecular and cellular biology), clinical research (clinical research suite, supported by rheumatology research nurses); lecture theatre, seminar rooms, well-equipped library and full research administrative support – all housed under one roof. The Academic posts are supported by research nurses, PhD and MD students, and University of Liverpool laboratory technician and Scientific Officer.

There are excellent opportunities for academic training at all stages: with funding for an intercalated Masters degree, Academic F1 and F2 posts, Academic Clinical Fellow and clinical lecturer. The group has a strong track record of both academic and clinical achievements, including national awards for excellence and innovation, publication of more than 50 papers, award of more than £1 million of grant income (including Research Council funding), over the last 5 years alone.

Research focuses on inflammatory rheumatic diseases with a focus on translational work. There is an active programme of laboratory-based research focusing on innate immunity/immunology in rheumatic diseases. In addition work led by Professor Cooper looking at immunogenetics of myositis and exploring utility and spectrum of myositis antibodies for characterising disease in individual myositis patients

- neutrophil biology in inflammatory arthritis
- immunogenetics of myositis
- digital transcriptomics in inflammatory diseases
- proteomics in systemic sclerosis
- drug discovery, identifying new targets on neutrophils in inflammatory diseases.
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**Clinical research includes:**

- comorbidity in inflammatory arthritis (Dr Goodson)
- Impact of musculoskeletal disease on work outcomes. (Dr Goodson)
- early rheumatoid (and other inflammatory) arthritis (Dr Goodson);
- Scleroderma and Raynaud's (clinical physiology, disease assessment and treatment) (Dr ME Anderson)
- Immunotherapy of rheumatic diseases (clinical trials of biologic therapies, clinical research in autoimmune conditions such as Behcet's disease (Professor R J Moots).
- Myositis and immunogenetics (Professor R Cooper)

## **Academic Component**

### *a) Core Academic Training:*

The academic component of the job will comprise 5 weeks during the rotation in foundation year 1 and a further block of 4 months during foundation year 2. During this time the post holder will gain training in core research methods (tailored to their interests) and in parallel undertake research that will be completed during the block of research in F2 and which will be designed to result in a presentation at a major national or international meeting or publication in peer-reviewed journal.

### *b) Possible specific academic areas of involvement*

The Rheumatology group can tailor academic programmes according to the interests of the individual - spanning the whole gamut of research from laboratory science through to clinical science and epidemiology. There will be a choice of senior full-time university academics to supervise projects and either clinical or laboratory-based projects to undertake. There is also an active programme of seminars, journal clubs, courses and updates to which the academic F1/2 post-holder will be encouraged to attend and present at. The academic F1/F2 post-holder will also be supported to attend relevant courses providing an introduction to research methods (whether laboratory sciences, clinical science or epidemiology) and take part in a research project that will lead to a significant outcome during the tenure of the post – such as presentation of their work at a major meeting or publication in peer review journal.



## Endocrine (Triplet 15)

Academic Foundation Programme Endocrine lead: Prof John Wilding

Email: [John.Wilding@Aintree.nhs.uk](mailto:John.Wilding@Aintree.nhs.uk)

Triplet 15	F1	F1		F1	F2	F2	F2
Track 15c (AFP)	General Surgery	Emergency Medicine		General (Internal) Medicine	General (Internal) Medicine	Academic - Research	General Practice
Additional Post Description	Orthopaedics	<i>Clinical elements – Emergency Medicine</i>	5 week block of Endocrinology Research	Respiratory	Diabetes	Endocrinology Research	
Post Location	Aintree	Aintree		Aintree	Aintree	Aintree	TBC

### Diabetes/Endocrinology/Obesity Clinical Research Unit

#### Rotation

This two year rotation has one month dedicated academic time set aside in F1 and 4 months in F2 within the Department of Endocrinology. The rest of the rotation is with appropriate specialties in University Hospital Aintree including at least one clinical post in Endocrinology (either 3 months in F1 or 4 months in F2). The overall Foundation Programme will provide the appointee with their Foundation competencies as well as excellent facilities and supervision for research

#### Departments to which academic posts will be affiliated

Diabetes & Endocrinology Directorate, Aintree University Hospitals NHS Foundation Trust

#### Academic interests of department

The University of Liverpool Department of Obesity & Endocrinology part of the Institute of Ageing & Chronic Disease, has its clinical base in the Clinical Sciences Centre (CSC) at University Hospital Aintree. The CSC boasts extensive state of the art facilities for laboratory research (with extensive suite of laboratories geared for molecular and cellular biology), clinical research (clinical research suite, supported by endocrinology research nurses, research fellows and dieticians); lecture theatre, seminar rooms, well-equipped library and full research administrative support – all housed under one roof. The Academic posts are supported by research nurses, dieticians, MD students, laboratory technician and Scientific Officer.

The Endocrinology Department at Aintree comprises Professor John Wilding (Head of Department), Professor Geoff Gill, one Reader Dan Cuthbertson), Senior Clinical Lecturer (Dr Uazman Alam) together with five NHS consultants (two with honorary University posts) & three SpRs, provide general diabetes and endocrinology services to the local population and a supra-specialist service regionally and further afield. The Diabetes Centre is adjacent to the Clinical Sciences Centre.

The group has a strong track record of both academic and clinical achievements, including numerous publications in high ranking journals, grant income in excess of £2 million over the past 5 years, and contributions to major clinical guidelines, such as NICE guidelines. Recent funders of our research include Diabetes UK, the Diabetes Research and Wellness Foundation, Asthma UK (for research into obesity and asthma), the Novo Nordisk Research Foundation, and the European Diabetes Research Fund. The Unit is also a major centre for clinical trials in diabetes, endocrinology and obesity, is part of the NIHR Diabetes and Comprehensive Clinical Research Network and has important links with commercial funders of research.

**Research Interests Include:**

*Professor John Wilding*

Clinical Trials in Obesity and Diabetes

Clinical aspects of severe obesity, including effects of bariatric surgery

Role of gut hormones in regulation of appetite and glucose metabolism

Obesity and respiratory disease

*Dr Uazman Alam*

Assessing small fibre neuropathy in diabetes

Lipid Metabolism

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*Dr Dan Cuthbertson*

Metabolism and muscle function in diabetes and ageing

Fatty liver disease & insulin resistance

Endocrine Tumours

There are close links with other groups within the Department including adipocyte biology (Dr Chen Bing, non-clinical SL), appetite control (Dr Lucy Pickavance, non-clinical lecturer), with the

Musculoskeletal Biology (Prof Malcolm Jackson, Dr Anne McArdle) based in the UCD building at RLUH and with the Kisselef Laboratory (Dr Jason Halford and Dr Jo Harrold) in the University Department of Experimental Psychology, which specialises in the study of human appetite.

### **Academic Component**

*a) Core Academic Training:*

The academic component of the job will comprise 5 weeks during the rotation in foundation year 1 and a further block of 4 months during foundation year 2. During this time the post holder will gain training in core research methods and in parallel undertake research that will be completed during the block of research in F2 and which will be designed to result in a presentation at a major national or international meeting or publication in peer-reviewed journal.

*b) Possible specific academic areas of involvement:*

The Endocrinology group can tailor academic programmes according to the interests of the individual - spanning the whole gamut of research from laboratory science through to clinical science and clinical trials. There will be a choice of senior full-time university academics to supervise projects and either clinical or laboratory-based projects to undertake. There is also an active programme of seminars, journal clubs, courses and updates to which the academic F1/2 post-holder will be encouraged to attend and present at. The academic F1/F2 post-holder will also be supported to attend relevant courses providing an introduction to research methods (whether laboratory sciences, clinical science or clinical trials) and take part in a research project that will lead to a significant outcome during the tenure of the post – such as presentation of their work at a major meeting or publication in peer review journal.