Specialised Foundation Programme in Research

Anglia Ruskin University

Prospectus 2024

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Welcome to ARU

As the Research and Innovation Lead at Anglia Ruskin School of Medicine, I am excited to showcase our first Specialist Foundation Program in Research.

As a new School of Medicine, we graduated our first cohort of Foundation doctors in summer 2023. This landmark year also sees our first Specialist Foundation Program offering in Research.

As a School we are committed to improving the health and wellbeing of the local population, which has been traditionally underserved, by research in particular. A vital part of this is the creation of the next generation of research-informed and research-active clinicians. In turn, our multidisciplinary research reflects the needs of the local population and aligns with current NIHR priorities. Our Specialised Foundation Posts in Research are the start of this journey to transform the clinical research landscape in Essex.

As a new medical school, we are in the unique position of being at the forefront of the NIHR's levelling up agenda, and I am excited to be leading the ARU School of Medicine in this adventure.

Dr Jo-Anne Johnson
Associate Professor of Medical Education, Research & Development
ARU School of Medicine Research and Innovation Lead

Introduction

The Anglia Ruskin Specialised Foundation Program is part of the Health Education East of England's Foundation School in East Anglia. We are pleased to invite applicants to apply for a 2024 start in the inaugural year of the programme.

ARU is working with the Mid and South Essex NHS Trust and East of England Foundation School to offer Foundation trainees, who are interested in a potential career in clinical academia, research experience in established research units across Essex and Cambridge.

The Anglia Ruskin School of Medicine opened in 2018 and we had our first cohort of graduates in July 2023. Trainees joining our School of Medicine will have the opportunity to learn and work in our state-of-the-art building located in Chelmsford, Essex.

The School of Medicine is part of the Faculty of Health, Education, Medicine and Social Care at Anglia Ruskin University. We have built strong collaborative relationships with colleagues across the faculty and beyond, working on both the Chelmsford and Cambridge campuses.

We have established effective partnerships with other local institutions and healthcare providers, to offer you opportunities to develop your research and medical skills within dynamic teams of researchers and clinicians who are well-established within local healthcare provision.

Research at ARU

Why should you apply to ARU's Specialised Foundation Programme?

Come to ARU for:

- **High-quality research training.**
- **Access to state-of-the-art School of Medicine facilities.**
- **Exposure to world-leading, high-impact research opportunities.**
- **The opportunity to work with a diverse community of researchers in NIHR priority areas.**
- **The opportunity to be part of a local clinical academic training community.**

At the School of Medicine, we are passionate about developing the next generation of Clinical Academics and research-informed clinicians. We have developed a strong culture in research and innovation within the School of Medicine, utilising links with established research institutes of excellence across ARU. These units of excellence offer research which aligns with current NIHR and Wellcome Trust priority areas, including public health, social science, mental health, acute care and digital health.

This means we can provide trainees with a high-quality clinical research training environment. We have a strong emphasis on individual clinical academic mentorship, to support trainees to continue along a clinical academic training pathway.

ARU hosts a diverse community of researchers and there are plenty of opportunities to showcase research and learn from colleagues, including through the annual School of Medicine Research Conference.

Sixteen of ARU's research areas were classed as generating world-leading research by the Research Excellence Framework (REF) in 2021. ARU conducts world-leading and impactful research. Our research has the potential to innovate and the power to enhance social, cultural and economic well-being at national and global levels. Research at ARU is making a positive difference and tackling global issues Including climate change, dementia and COVID-19.

Research Case Studies

Our annual Research and Innovation Highlights magazine showcases examples of our high-impact research. ARU research is across key themes: 1) Health, Performance and Wellbeing. 2) Safe and Inclusive Communities. 3) Sustainable Futures. Across each theme there are opportunities for innovation and entrepreneurship.

There are many examples of innovative and fascinating research projects taking place at ARU. What follows is just a small selection of them. You can read more about these and other projects in the latest magazine (2022), available to read here.

- Researchers at the Vision and Eye conducted ground-breaking research looking at ways to improve the lives of people with both sight and hearing loss. Professor Shahina Pardhan and her team used data gathered from more than 23,000 adults to investigate the impact on daily life of losing vision and hearing. They found that nearly one in three people with both vision and hearing impairment was suffering from depression. Nearly four times the level compared to people with no sensory difficulties.

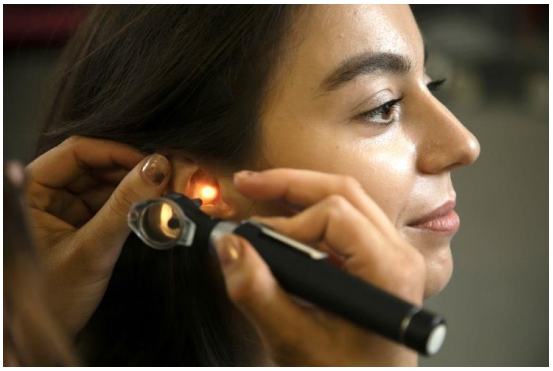
- A Knowledge Transfer Partnership between ARU and a primary care provider proved that artificial intelligence can help patients taking multiple medications to avoid dangerous side effects. Colleagues Dr George Wilson and Dr Cristina Luca were involved in the partnership which focused on the use of anticholinergic drugs and the side effects caused when they are used in combination with other medicines. Using cluster analysis, the artificial intelligence tool scanned the records of over 300,000 patients and referenced them against an NHS repository of risk information about drugs.

- ARU research at Basildon University Hospital has enhanced the principles of the Anchor programme from the Mid and South Essex NHS Foundation Trust. The programme supports citizen-led change. Research led by Dr Oonagh Corrigan and Dr Emma Kaminskiy sought to understand the experiences of staff living and working in Basildon, to provide meaningful recommendations for improving the quality of life in the local area.

- International research led by Dr Dan Gordon at ARU investigated the link between physical activity and improvements in cognition for people with Down syndrome. The data gathered by ARU reveals a clear correlation between exercise and improvements in cognition in every single category of assessment.

- Researchers at ARU are exploring the relationship between music therapy and the brain. The research, led by Professor Jörg Fachner, looks specifically at the impact of neuro-rehabilitation, particularly for patients suffering from complex brain injuries. The study involves a process called hyper scanning.

- Professor Denise Hawkes is leading an evaluation into how public funding is spent in local towns and cities. The project's evaluation process must take into account factors such as impact on the environment and the inclusion of diverse groups. The project exemplifies how academic evaluation can support and grow the local economy. The project has involved ARU working closely with Harlow District Council and showcases ARU's ability to work collaboratively with local organisations and businesses.



The SFP Opportunity at ARU

The Specialist Foundation Programme (Research) at ARU offers a four-month rotation in research. You will be allocated to one of four research groups. Your research rotation will expose you to a range of high-quality research opportunities and highly skilled, enthusiastic and friendly colleagues, each with their own portfolio and formidable record of publishing academic papers. You will be encouraged to become fully immersed in research and contribute to active research projects and outputs.

Your remaining five rotations will be clinical attachments, which will be your opportunity to develop your foundation competences. You will be allocated to one of either Broomfield, Basildon or Southend Hospitals, all of which are part of the Mid and South Essex NHS Foundation Trust (MSEFT).

In all stages of the SFP you will be well supported by a team of academics, researchers and clinicians. In your chosen research rotation, you will have a senior academic supervisor and be offered regular supervision meetings. In your clinical work, you will have a clinical supervisor and education supervisor. You will also have a named clinical academic mentor, who will provide you with career mentorship. You will also have access to pastoral support.

You will be welcomed into ARU's culture of outstanding, innovative research. There will be specific seminars for SFP trainees to introduce you to research methodologies and give you the opportunity to learn alongside other SFP trainees at ARU. You will also have access to research seminars run by ARU's community of research groups and institutes, which will allow you to experience ARU's research firsthand and integrate with other researchers established at ARU.

As a Clinical Academic trainee, you will become part of a local community of clinical academic trainees. You will also have the opportunity to share your experiences with our medical students.

ARU has 12 posts available for the 2024 intake of the SFP. There are positions available within the following four research programmes:

1. The Vision and Eye Research Institute (VERI, ARU Cambridge)
2. Veterans and Families Institute for Military Social Research (VFI, ARU Chelmsford)
3. Plastic Surgery & Burns (StAAR, Broomfield Hospital and ARU)
4. Circulatory Health (CTC Basildon and ARU)

Clinical Placements

ARU's School of Medicine in collaboration with the Health Education England (HEE) East of England (EofE) Deanery have worked collaboratively to develop several exciting and innovative placements for these collaborative Specialised Foundation Programme (Research) rotations.

These rotations and jobs will, with the research component, enhance the successful applicant's medical, clinical and research experience, which will set very good career foundations for the future. If you as a successful candidate wished to pursue a career in the chosen theme, then you would almost certainly be at an advantage in the future. Even if this was not the case the experience gained will be advantageous as you have specific general components and opportunities that will be transferrable to other specialties.

Along with the four themed research programmes at ARU, correspondingly specific themed clinical placements and rotations have been developed to gain the Foundation programme year 1 and 2 competencies with full GMC registration, as well as the competence to practice as a confident doctor. The training programme directors and education staff at the Mid and South Essex (MSE) hospitals (Southend, Mid Essex Broomfield and Basildon Hospitals) have established the following with the Deanery and University (***PLEASE NOTE THAT ALL CLINICAL ROTATIONS MAY BE SUBJECT TO CHANGE***):

1. **The Vision and Eye Research Institute (VERI, ARU Cambridge) – Southend University Hospital**. This Ophthalmology themed programme will provisionally have year one rotations including General Medicine, Stroke Medicine, Acute Medicine, Orthopaedics and Trauma. During one of the three year one placements there will be exposure to Opthalmology outpatient clinics and potentially theatres. Year two will involve the research rotation at ARU and also General Practice, and Accident and Emergency experience.

2. **Veterans and Families Institute for Military Social Research (VFI, ARU Chelmsford) - Mid Essex Broomfield Hospital**. This themed programme will embrace Generalism and have exposure to a number of specialties to help with the research element and set the successful candidate up for a number of career pathways. Year one will include placements in Paediatrics, Urology, Geriatrics and year two will include placements in General Practice, Acute Medicine as well as the research rotation.

3. **Plastic Surgery & Burns (StAAR, Broomfield Hospital & ARU Chelsmford) - Mid Essex Broomfield Hospital.** This Plastic Surgery and Burns programme will be both general and focused. Year one will include placements in Urology, Paediatrics, Trauma and Orthopaedics. Year two will involve the ARU research rotation and Clinical placements in Plastic Surgery/Burns and Accident and Emergency/Acute Medicine.

4. **Circulatory Health (CTC Basildon Hospital & ARU Chelmsford) - Basildon Hospital Cardio-Thoracic Centre.** This Cardiovascular themed programme will include Vascular Surgery with General Medicine and Cardiology and in year two the ARU research rotation with Clincal exposure to Cardiothoracic Surgery and Accident and Emergency.

All of these placements will provide both general and themed specialist exposure as well as the corresponding research component. All placements involve three Foundation Year 1 placements (4-months duration each) with one of these three being in the corresponding themed specialty and the others being a mixture of allied and general exposure to attain competencies from the syllabus.

In year two, once Full GMC registration has been gained upon successful completion at ARCP of year 1, there will be a further two placements in allied and general jobs and a 4-month research rotation at ARU in the specific theme.

Please note that all clinical rotations may be subject to change but it is our intention to provide these specialties or if not available a similar themed specialty or appropriate general placement.

Please also note that all programmes will involve some travel to Chelmsford, for events/workshops and related research rotation activities at the ARU School of Medicine.

Key Staff Member

Mr Shiva Dindyal is **Deputy Director for the East of England (EofE) Deanery Foundation School responsible for the Essex, Bedfordshire and Hertfordshire (EBH) Quadrant**.

Mr Dindyal is a Consultant Vascular and Endovascular Surgeon at Basildon and Thurrock University Hospitals NHS Hospitals Foundation Trust in the Mid and South Essex (MSE) Regional Vascular Unit, as well as Honorary Senior Lecturer at ARU.

Mr Dindyal was born and raised in London and medically trained at Imperial College School of Medicine London (1997 and 2003), where he also gained a Physiology BSc degree in 2000, before completing his Medical and Surgical degrees. He completed his surgical training (General Surgery with a sub-specialist interest in Vascular Surgery) in the London Deanery – North East (including Essex) & Central Thames and a fellowship at the Brighton and Sussex University Hospitals NHS Trust. He was appointed as a Substantive Consultant Vascular and Endovascular surgeon in Basildon, Essex in 2016.

Mr Dindyal is actively involved with ARU in several aspects. He initially was involved with the new medical school year one and two Cardiovascular block development as well as the Medical School admissions interview (MMI) from the first cohort. He has been involved with allied professions with the establishment and teaching of the physician associate training programme locally at MSE and the Surgical Care Practitioner MSc training and project supervision as well as establishing Royal College of Surgeons approval. He is also involved with research at ARU as part of the Biomechanics, Optics, Robotics & Imaging Research Group (BORI) in the Medical Technology Research Centre (MTRC).

Mr Dindyal also has an interest in Medical Education and Surgical Training. He has been involved with Foundation Years (1&2), Core Surgical Training and Higher Specialist Surgical Training of General and Vascular registrars in the East of England (EofE) and London Deaneries. He was previously the Basildon Hospital Foundation Training Programme Director and is now one of the Deputy Directors of the EofE deanery Foundation School responsible for the Essex, Bedfordshire and Hertfordshire Quadrant and helping with establishing these Specialised Foundation Programme (Research) placements and rotations as well as interview selection process.

1. The Vision and Eye Research Institute (VERI, ARU Cambridge*)
Clinical rotations - Year 1: General Medicine, Stroke Medicine, Acute Medicine, Orthopaedics and Trauma. (Also, exposure to outpatient clinics and potentially theatres). Year 2: General Practice, Accident and Emergency.

The Vision and Eye Research Institute (VERI), part of ARU School of Medicine, is a multi-disciplinary collaborative platform for all vision and eye research in different departments and faculties within ARU. These include optometry, ophthalmology, computing sciences, human movement sciences, sports sciences, public health, biomedical sciences, psychology, hearing sciences, and business.

In the REF 2014, The impact of VERI's research was rated as 100% World Class and Internationally Excellent. In REF2021, VERI's research focused on a number of areas including global burden of decreasing the risk of blindness and addressing eye health inequalities globally.

Our world-leading research is in key areas in vision and eye, with a common mission of reducing the risk and impact of global blindness.

VERI unites leading authorities in the field including the NHS, public and private sector stakeholders, to address some of the most pressing challenges facing vision and eye care. Continued support from VERI's key partners and stakeholders has enabled the shaping of strategies and policies with international organisations and policymakers (such as the World Health Organisation and International Agency for the Prevention of Blindness) whilst bringing up-to date research to communities that benefit from VERI's work, not just in the UK but internationally.

*although many of the research and supervisory meetings will be conducted remotely, travel to the ARU Cambridge campus may be required.

Examples of research opportunities for VERI SFPs

VERI has a number of key research areas. Please visit VERI's website to find out more.

Diabetes and diabetic retinopathy

Epidemiology of eye disease

Low vision

Public health

Visual short term-memory

COVID-19

Clinical trials

Glaucoma

Anterior eye

Genetic eye disease

Neuroscience of vision loss

Examples of current projects include:

Reducing inequalities in eye health in the UK. This builds upon our research in diabetic retinopathy. It is known that eye health is poorer in individuals from certain ethnic minority groups. Our research is focused on exploring barriers and enablers, ranging from knowledge and awareness, access to healthcare service, language barriers to everyday practices in South Asian, Black and Chinese communities, not just in the UK but also in China, India, Nepal, Pakistan, Bangladesh and Mexico.

1. We are exploring the experiences of people across all vision and hearing pathways. Specific projects in this area include, exploring continuity of care from certification of vision impairment to support from social services.
2. We work on defining and detecting unmet sensory needs in the UK at population level; developing innovative and appropriate ways to improve the health and wellbeing of people with sensory losses.
3. Leading the Visual Loss Expert Group for the Global Burden of Diseases. We are focussed on delivering up to date prevalence data of blindness and sight impairment on a global level for policy makers such as WHO and other national and international stakeholders.
4. We focus on factors that affect the health and wellbeing of people with vision loss and those with rare inherited diseases.
5. We focus on innovative ways to prevent eye diseases, working with various stakeholders including public health, charities and healthcare professionals.
6. We are seeking innovative ways to detect early signs of cognitive impairment.

7. We are developing innovative ways to link structure and function across the whole visual pathway.

Key Staff

Professor Shahina Pardhan is the Director of the VERI. Professor Pardhan was appointed as the first female Professor of Optometry in the UK (2001).

Professor Rupert Bourne is a Clinical Professor at VERI, leader of the Vision Loss Expert Group in collaboration with the World Health organisation, and NIHR Lead for eye research.

Find out more about the VERI team

Track Record

VERI submitted 2 impact cases to the 2021 REF on decreasing risk of blindness and addressing eye health inequalities globally. In Ref 2021 VERI 's research was labelled as 'thriving' in terms of its quality, 'with world-leading activity in global prevalence of eye disease and evaluation of specific interventions for patient benefit'.

The VERI team have supervised 16 PhD students to completion. Over the past 5 years they have generated over £3 million in income and published over 300 articles. About more of which you can read here.

2. Veterans and Families Institute for Military Social Research (VFI, ARU chelmsford)
Clinical rotations - Generalism and exposure to a number of specialties. Year 1: Paediatrics, Urology, Geriatrics. Year 2: General Practice, Acute Medicine.

The Veterans and Families Institute for Military Social Research (VFI, ARU Chelmsford) is an internationally leading, inter-professional social science research institute that informs and improves the well-being of veterans, service personnel, and their families through the application of world-leading research and evaluation.

The VFI focuses on veterans and their families as a community that experiences relatively unique challenges related to a military career and its positive and negative consequences.

Research and evaluation conducted by the VFI has three central aims:

1. To understand specific challenges faced by veterans and their families.
2. To inform policy and practice to improve their long-term physical, psychological, social, and economic well-being.
3. To translate empirical learning from veterans and families to civilian populations.

The VFI undertakes research of national and international importance that has helped to shape health and social care policy and has been instrumental in improving support and assistance for our injured veterans and their families. The VFI is unique because it applies social science research (mixed methodologies) to understand problems experienced by veterans and families, and thus brings workable solutions and recommendations. Research at the VFI has an impact on the health and well-being of veterans and their families but their research findings are directly translatable to the general population.

Examples of research opportunities for SFPs

Current research in the VFI is split into four broad themes:

- Thriving Families: **Associate Professor of Applied Social Science, Dr Hilary Engward,** applies mixed methodology research (qualitative and quantitative) to understand the role of, and differences within and across, the military and veteran community. Its aim is to inform the development of national

government policy and inform charities and service providers to centralise the family. To achieve this, qualitative and quantitative research is applied. This theme will appeal to those with an interest in the concept of the family and health and social care support and provision across statutory and third sector services. It will provide experience of collaborative research with veteran charity organisations. Examples of research to date include:

- Evaluating the Ministry of Defence's Spouse Employment Support Trial
- Evaluating support for Early Service Leavers
- Caring and Coping: the family experience of living with loss of limb
- Coping and Uncertainty: the family experience with loss of use of limb/s
- Understanding chronic pain: the family perspective
- Find out more about the research in this theme

- Narrative Research: **Associate Professor of Political Sociology, Dr Nick Caddick:** explores lived experiences (narratives) to understand the multiple and complex legacies of war and military service for veterans, other groups impacted by war, and for broader society. This field of work centralises qualitative research and will be of interest to those who want to understand how culture and society informs experience.
  - Find out more about the research in this theme

- Knowledge Exchange and the Centre for Military Gambling Research (in development): **Professor of Public Services Research, Matt Fossey**

- Equalities, Diversity and Inclusion, and the Centre for Military Women's Research: **Associate Professor of Women and Equalities, Dr Lauren Godier-McBard**, uses mixed methodology to develop a better understanding of the health and well-being of women and other minority groups within the UK military and veteran populations.
  Specific research projects include:
  - A comprehensive scoping study of the UK evidence-base pertaining to the well-being of female veterans
  - Investigating gender-specific barriers to mental healthcare
  - Examining the support needs of non-UK veterans
  - This research theme will be of interest to those interested in equalities and access to, and use of, medical, health and social care service
  - Find out more about the research in this theme

SFPs working within these themes will gain experience in innovative, interdisciplinary research, centred on the long-term physical, psychological, social, and economic

well-being of veterans and their families. They have the potential to influence service provision, medical education/training, and national policy. They will conduct innovative, impactful, mixed-methodology social science research, which crosses the boundaries between healthcare, social care, education, politics, and industry. Although centred on the health and well-being of veterans and their families, this work is translatable to civilian populations. The VFI work very closely with Defence Medical Services and are represented as experts to NHS England, the Cabinet Office and Ministry of Defence.

Key Staff

The Director of the VFI is **Professor Matt Fossey**. Professor Fossey is also co-chair of the NATO research group on sexual violence in the military and alongside US colleagues is developing further NATO work on human participation in research.

Professor Mike Almond is the VFI's Clinical Professor. Professor Almond was until very recently a consultant kidney specialist and an RAF medical reservist.

Associate Professor Hilary Engward is Deputy Director of the VFI. Dr Engward is also co-director of the Professional Doctorate Health and Social Care, and Co Principal Investigator for research exploring Professional Advocacy.

Track Record

The VFI leads internationally celebrated research, as reflected in their impact case study, "Enhancing Support and Services for Veterans and their Families Through National Policy Development and Charitable Service Delivery" submitted to REF 2021. The VFI team has over 20 staff with 9 PhD supervisors currently supervising over 20 PhD students across military, veteran, disability, women and equalities research. The VFI expertise also spans health and education studies across medicine, nursing, midwifery, social work and allied health professions.

Since their conception in 2014, the VFI have generated over £6 million in income, and have produced over 120 academic papers, reports and book chapters. The team also includes visiting Professors from Boston University School of Medicine, the Maritime Institute at Memorial University, Newfoundland as well as Imperial College, London. The VFI supports a number of international and domestic interns who work with the team to learn new research techniques and engage with researchers who are at the forefront of military social research.

3. St Andrew's and Anglia Ruskin Research Group (StAAR) St Andrew's Centre for Plastic Surgery & Burns (Broomfield Hospital and ARU Chelmsford)
Clinical rotations - Year 1: Urology, Trauma and Orthopaedics, Paediatrics. Year 2: Plastic Surgery and Burns, Accident and Emergency/Acute Medicine.

The St Andrew's Centre is home to opportunities in Plastic Surgery & Burns at Broomfield Hospital in Chelmsford. It offers a world-renowned specialist Plastic Surgery & Burns service. In 2023, St Andrew's is celebrating Its 50th year as a leading specialist centre.

The St Andrew's regional Centre for Plastic Surgery covers a population of 3.2 million and the regional Burns service a population of 9.8 million; it is therefore one of the largest specialist centres in Europe. The Plastic Surgery Centre covers a huge variety of sub-specialties including Breast Surgery, Trauma, Hand Surgery, Skin Cancer, Head & Neck, Cleft Lip and Palate and Microsurgery in both adults and children. The Burns Centre has an Intensive Care Unit, Children's Burns Ward, Adult Burns Ward, and Burns Outpatient department; it is part of the London and South East Burns Network (LSEBN) and covers a large part of the East of England including London.

The St Andrew's and Anglia Ruskin research group (StAAR) was formed in 2012. StAAR members focus on linking laboratory sciences with clinical outcomes. There are currently 27 research-active Consultant members, as well as Research Nurses, Hand Therapists and Physiotherapists with interests in:

- Breast and Microvascular Techniques
- Burns and Trauma
- Hands and Skin Cancer
- Head, Neck, Cleft Lip and Palate

Examples of research opportunities for SFPs

- Randomised controlled trials for hand surgery outcomes
- Hand surgery validated questionnaire development
- Cohort studies on the duration of skin cancer surgery from the point of developing skin lesion changes and the effect on skin cancer progression
- Cohort studies of the further management of incompletely excised/narrow-margin excised skin cancer

- Burn line sepsis, fluid requirements and blood loss

Key Staff

Professor Ben Miranda - Consultant Plastic and Hand Surgeon, StAAR Research Group Lead
Mr Quentin Frew – Locum Consultant Burns Surgeon, St Andrew's Centre for Plastic Surgery & Burns

Track Record

Since the inception of StAAR with the ARU Postgraduate Medical Institute in 2012, StAAR members have published over 400 papers in peer-reviewed journals, and achieved even more presentations at both international and national levels. StAAR members have published 150 papers in the last 5 years and generated £0.5 million in income. They have supervised 3 doctoral students to completion.

Extract from a StAAR Research Study

What Factors Increase Non-Melanoma Skin Cancer Invasiveness?

StAAR conducted a cohort study, focusing on patients with non-melanoma skin cancers operated on during a 6-month period. Data collected included patient demographics, referral source, surgical, lesion time, surgical technique, histological data, excision margins, and skin cancer risk.

Data from 872 patients with non-melanoma skin cancers were collected. Mean age was 77 years ± 11.8, 542 male and 330 female. The results from this large cohort study further strengthen the results of our pilot study published 2 years prior. Basal Cell Carcinomas (BCCs) and Squamous Cell Carcinomas (SCCs) behave differently, and lesion time has a direct and proportional impact on invasiveness. Excision of skin cancers should be cautious to ensure the deep margin of the skin cancer is clear. Patient comorbidities including hypertension, diabetes, chronic kidney disease and patient age were all found to impact either cancer risk or cancer invasiveness.

We concluded that timely excision of non-melanoma skin cancer is essential, but SCCs should be prioritised over BCCs as they have been demonstrated to be more invasive, over a shorter time period. Addressing lifestyle factors where possible may also reduce disease burden and should form part of our management of these patients.

4. Anglia Ruskin Centre for Circulatory Health (CTC Basildon & ARU Chelmsford)

Clinical rotations - Year 1: General Medicine, Cardiology, Vascular Surgery. Year 2: Cardiothoracic Surgery, Accident and Emergency.

The Essex Cardiothoracic Centre (CTC) is based at Basildon Hospital and offers a wide range of services and support for people who need specialist treatment for heart and lung conditions.

The Essex CTC opened in 2007 and is one of the most modern of its kind in the country, with the latest equipment and technology, including state-of-the-art operating theatres and cardiac catheter laboratories. The Centre offers specialist diagnosis and treatment for people with cardiovascular and respiratory diseases. Patients benefit from the highest quality treatment and care delivered by a team of experienced staff. The Essex CTC has facilities for 100 patients, including a 22-bed critical care unit, a separate cardiology day ward, rehabilitation gym and some overnight facilities for relatives.

Anglia Ruskin Centre for Circulatory Health (CCH) was formed in 2014 via a collaboration of ARU with the Essex Cardiothoracic centre. The CCH focusses on clinical trials within the areas of cardiovascular and thoracic medicine. Research projects are wide-ranging and include intervention (vascular, stroke, interventional cardiology, electrophysiology) and non-interventional (heart failure, imaging, and inherited cardiac diseases). The unit has particular expertise in trialling novel cardiology medical devices.

There are honorary joint clinical academic appointments within heart failure (Dr Henry Savage), electrophysiology (Dr Neil Srinivasan), cardiac imaging (Dr Jason Dungu and Dr Richard Jones) and inherited cardiac disease (Dr Jason Dungu).

There are 3 main areas of expertise with joint clinical / ARU academic appointments. These are i) Structural interventional cardiology ii) Vascular interventional group and iii) Interventional cardiology group. All teams have dedicated research fellows and on-going research programmes.

Structural Cardiology

Dr Christopher M Cook - Consultant Cardiologist, The Essex Cardiothoracic Centre. Senior Clinical Research Fellow, Anglia Ruskin School of Medicine. Dr Cook is a Senior Interventional Cardiology Fellow with specialist interests in the treatment of coronary artery disease and valvular heart disease. He works at the Essex Cardiothoracic Centre and has clinical research interests in coronary physiology, innovation in healthcare and trans-catheter aortic valve implantation (TAVI).

One of the current active research areas of the CTC Structural Cardiology division is focused at addressing the current unmet clinical need of patients with severe aortic stenosis (sAS). Specifically, we aim to find innovative and novel means of identifying and diagnosing patients with severe aortic stenosis who may a) be undiagnosed or clinically 'silent'; and b) benefit from subsequent aortic intervention.

The Addressing the unmet Need of patientS With sevERe Aortic Stenosis (The ANSWER AS study) is based upon the synergy of big data suggestive of an enriched patient population for sAS attending routine ophthalmology appointments, and subsequently aims to harness this diagnostic potential by adopting latest-generation diagnostics ('smart' stethoscopes with AI-enabled diagnostics) to rapidly and autonomously diagnose sAS. Accordingly, ANSWER AS may provide a scalable, economically viable and immediately deployable strategy to opportunistically diagnose sAS in non-cardiac settings.

Under supervision, the SFP will have the opportunity to develop the ethics application and collect pilot data for the ANSWER AS study (and be involved with the project, including publications, thereafter).

Circulatory Research Group and Mid and South Essex Vascular Unit

Mr Ankur Thapar - Consultant Vascular and endovascular surgeon MSE NHS Foundation Trust and Senior Research Fellow, Centre for Circulatory Health. Mr Thapar is also an honorary clinical senior lecturer in surgery.

Research interests: remotely supervised exercise for peripheral arterial disease, diabetic foot osteomyelitis, intraprocedural haemodynamic assessment of lesions using novel investigational devices, history of vascular surgery, systemic reviews.

Projects include:

1. Randomised controlled feasibility trial of ultrasound screening after peripheral angioplasty
2. Randomised controlled feasibility trial of antibiotic eluting bone cement v systemic antibiotics for diabetic foot osteomyelitis.

You will have regular supervisions and become involved in case reports, international presentations, develop as a clinical teacher and researcher and receive career coaching. Recent students have won national prizes, published in Neurology, Stroke and BMJ case reports and have obtained NTNs in surgery and radiology.

Essex CTC Interventional Cardiology Group

Dr Thomas Keeble - Consultant Cardiologist, Essex Cardiothoracic Centre. Associate Professor, Cardiology and Circulatory Health, Anglia Ruskin School of Medicine, UK. Tertiary clinical lead for East of England cardiac network.

Dr Keeble is an interventional cardiologist with a specialist research interest in out of hospital cardiac arrest (OHCA) and coronary physiology. He is currently Chair of the BCIS working group for out of hospital cardiac arrest, and an executive member of the Resuscitation Council (UK) committee.

Within the Essex CTC interventional cardiology group, there are a number of projects in three key interest areas:

1. **Heart attack medicine** – (ST elevation myocardial infarction). We have projects looking at evaluating and understanding the extent of the heart attack during the first few minutes of the admission, whilst we are opening up and stenting the blocked artery. If we can identify those that have larger heart attacks in the catheter lab at admission, we can focus newer therapies and drugs at these patients to try and reduce heart attack size and improve outcomes. Projects involve testing a new clot retrieval system for sucking out clot, and angiogram derived quantification of heart attack size.

2. **Out of hospital cardiac arrest** is the ultimate cardiac illness which if not treated has 100% mortality, and currently in the UK with treatment has a 10% survival rate. We have projects involved in every aspect of the chain of survival from pre-hospital to follow up and rehabilitation. We are piloting novel survival and rescuer support projects, and all of our patients are entered into the Essex

Cardiac Arrest Network registry (ECAN).

3. **Coronary physiology** – the measurement of flow reduction in coronary arteries by atheromatous narrowing, and the resultant change in flow after coronary stenting is an area of flourishing research at the Essex CTC. We have a number of coronary flow related projects which SFP can become involved in.

Under supervision, the SFP will have the opportunity to develop some of these projects (with supervision from senior researchers and research fellows). They will then have the opportunity to collect pilot data and be involved with the project abstracts, publications, and outputs. We hope that SFP will view the Essex CTC as a dynamic and friendly home for their research ideas and work.

Key Staff

The CCH lead is **Associate Professor Thomas Keeble** (Consultant Cardiologist, & Associate Professor at Anglia Ruskin School of Medicine).

Along with Dr Keeble, Dr Cook and Mr Thapar, the wider team consists of an expert and varied mix of cardiovascular clinical researchers involved in coronary, electrophysiological, heart failure, cardiac arrest, peripheral circulatory and valve disease research. This is complimented by more bench-based researchers whose interests include platelet function, vascular biology and microvascular dysfunction.

Dr Grigoris Karamasis is a Consultant Interventional Cardiologist working in Athens, Greece. He completed his MD(Res) at ARU and joined the University as a Senior Research Fellow in 2018.

Dr Henry Oluwasefunmi Savage is a consultant cardiologist who specialises in the management of heart failure and implantation of complex cardiac rhythm devices. He is the lead for heart failure services at the Mid and South Essex Foundation Trust and the Essex Cardiothoracic Centre Basildon. He is an Honorary Senior Clinical Lecturer at ARU.

Dr Neil Srinivasan is a Consultant Cardiologist & Electrophysiologist and Clinical Academic at The Essex Cardiothoracic Centre. He is an Honorary Senior Lecturer at ARU medical school.

Dr Marco Mion is the principal Clinical Psychologist at the Essex Cardiothoracic Centre. Dr Mion is a Clinical Psychologist with a specialist interest in

neuropsychological rehabilitation and post cardiac arrest care.

Dr Havovi Chichger's research group focuses on the molecular mechanisms which regulate vascular function in settings of disease. Dr Chichger is a Senior Lecturer at ARU.

Dr Nicholas Pugh's major research interests include the mechanisms by which zinc acts as an extracellular and intracellular mediator of platelet behaviour. Other interests include the analysis of platelet receptor activity in *in vitro* models of thrombosis.

Track Record

The CCH have published over 100 papers since 2014, and have generated over £2million in grant income since 2014. We have 5 doctoral completions since 2014, and 4 currently in write up or actively recruiting full time.

SFP Application Process

The UK Foundation Programme Office manages the information and national application process for the Foundation Programme.

All Foundation Trainees, including those on the Specialised Foundation Programme, will be expected to acquire the core competencies of foundation training. More information about the core competencies and SFP curriculum can be found on the curriculum section of the UK Foundation Programme website. It contains detailed Information on elements of the SFP such as professional capabilities and modes of assessment. The UKFPO also publishes other key documents for applicants.

The Specialised Foundation Programme provides an opportunity for foundation doctors to develop research, teaching and leadership/management skills in addition to the competences outlined in the Foundation Programme Curriculum.

We strongly encourage you to familiarise yourself with the UK Foundation Programme website because it contains detailed guidance to help you understand the full breadth of the SFP, the application process and timeframes of each aspect of the application process.

Application Process

An application to the Specialised Foundation Programme is made through the national process, via the online Oriel system.

After the Initial application, there will be a shortlisting of candidates against SFP criteria. Following this there will be an interview process.

The East of England Foundation School manages the application process locally. Any queries related to application requirements, eligibility, Oriel, shortlisting, or interview notifications, offers and similar should be directed to Foundation School Enquiries: foundationrecruitment.eoe@hee.nhs.uk.