

# ACF ACCS Programme Details in conjunction with the University of Liverpool

Recruitment to posts starting in August 2021

## Post availability

There are up to two posts available in Intensive Care Medicine.

You can apply at ST3 level in this round of recruitment.

## Overview

You can find generic information about Academic Clinical Fellowships in the North West plus links to the National Institute for Health Research's guidance via <https://www.nwpgmd.nhs.uk/nihr-academic-clinical-fellowships-glance>

## Academic Training

Academic Training will be provided in collaboration with the Faculty of Health Sciences at the University of Liverpool: <https://www.liverpool.ac.uk/health-and-life-sciences/> and <https://www.liverpool.ac.uk/life-course-and-medical-sciences/>

## Research Areas / Research Environment

The Liverpool Critical Care Research Team has developed three different research interests:

1. Cardiovascular dysfunction during severe life-threatening infection  
Inflammatory mediators, namely TNF- $\alpha$  and IL-1 $\beta$ , acutely impair myocardial contractility. Circulating histone concentrations also decrease ventricular contractility and closely correlate with elevated serum levels of troponin T in patients with sepsis. Inflammatory mediators together with adrenergic drive also contribute to common arrhythmias in critically ill patients. Our current research aims to identify echocardiographic and electrocardiographic characteristics of critical illness and to develop clinical and laboratory tests to predict the risk of infection-related cardiovascular dysfunction and arrhythmias at an early stage.

2. Musculoskeletal changes during and after critical illness

Intensive Care Unit Acquired Weakness (ICU-AW) is a common complication of critical illness. Muscle thickness or muscle cross sectional area of muscle can be easily tracked using bedside ultrasound. We have developed a bedside monitoring algorithm using ultrasound to determine the extent of muscle wasting during and after critical illness. Our multi-disciplinary team of physiotherapists, basic scientists, medical doctors and critical care nurses aims to develop

preventive strategies to avoid muscle wasting and to initiate early rehabilitation to build up muscle mass in critically ill patients.

### 3. Coagulopathies associated with infection and surgical procedures

Disseminated intravascular coagulation is a complex condition characterized by dysregulation of the coagulation cascade. Systemic activation of clotting factors leads to the formation of microthrombi in the peripheral vasculature, which cause hypoperfusion, ischaemia and tissue necrosis. Our current research aims to define the time course of each of these changes during critical illness, the relation of DIC to immune changes in sepsis and to investigate new therapeutics for DIC. With the beginning of the COVID-19 pandemic we have extended our experience and skills to explore coagulation changes in this disease.

## Research Facilities

The Critical Care research team (Lead: Prof. Dr. med. Ingeborg Welters) forms part of the Liverpool Centre for Cardiovascular Science

(<https://www.liverpool.ac.uk/health-and-life-sciences/research/lccs/>) and has unique opportunities to combine clinical and basic research. We have a well-established clinical research infrastructure and are one of the top recruiters into clinical critical care studies. The team is part of the Experimental Medicine Subgroup within the Clinical Research Network for Critical Care.

Moreover, our links and ongoing collaborations with the University of Liverpool, the Liverpool School of Tropical Medicine and Liverpool John Moores University offer unique research opportunities spanning from laboratory facilities, machine learning technology, translation into clinical settings, to early and late phase clinical trials.

## Clinical Training

You can find out more about the clinical training programmes in the North West via the following link - <https://www.nwpgmd.nhs.uk/specialty-schools>

Clinical person specifications can be found via the following link - <https://specialtytraining.hee.nhs.uk/Recruitment/Person-specifications>.

## Useful Links

<https://www.oriel.nhs.uk/Web/Vacancies>

<https://www.nwpgmd.nhs.uk/nhr-academic-clinical-fellowships-glance>

<https://specialtytraining.hee.nhs.uk/Recruitment/Person-specifications>

<https://www.nwpgmd.nhs.uk/specialty-schools>

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