

Early Stage Researcher / PhD studentship

LHS/Biosciences

Location: Birmingham

Salary: £21,500 per annum

Grade:

Contract Type: Fixed term, 3 years

Basis:

Closing Date: 28/8/19

Interview Date: 5th or 6th September 2019 (TBC)

Reference: R190342

The Department of Biosciences at Aston University has recently been awarded the EU Marie Skłodowska-Curie funded COFUND Doctoral Programme entitled MemTrain (Cell Membranes in Industrial Processes Training). The Programme is coordinated by Dr Alan Goddard who is a member of the Aston Membrane Protein and Lipid Research Group (AMPL). More information about AMPL can be found at:

[https://www2 aston.ac.uk/lhs/research/centres-facilities/molecular-biomedical-research/ampl/Aston%20Membrane%20Proteins%20and%20Lipids%20\(AMPL\)](https://www2 aston.ac.uk/lhs/research/centres-facilities/molecular-biomedical-research/ampl/Aston%20Membrane%20Proteins%20and%20Lipids%20(AMPL))

Over five years, MemTrain will train 12 Early Stage Researchers (ESRs; within 4 years of Masters qualification) undertaking a PhD in an area of research within the remit of AMPL, each of which is expected to have an intersectoral focus. Possible projects involve determining the roles of biological membranes in biotechnology or medicines discovery and the application of novel methodologies to investigate these membranes. Our 11 industrial partners will contribute to training of the researchers to generate a unique, integrated, learning environment in which graduate students benefit from industrial links, employability and entrepreneurial skills, and will leave as researchers who are highly competitive for jobs within academia and industry, as well as public policy, intellectual property law or as entrepreneurs. We are now recruiting for the following project.

Analysis of membrane lipids and their interaction with proteins by mass spectrometry (Waters Ltd).

Cell membrane lipid composition is critical for membrane functionality. The activity of membrane proteins is dependent on their interaction with surrounding membrane lipids, and membrane lipids also act as signals to other cells through recognition by receptors and antibodies. Membrane lipids can also be modified in stress conditions, for example by oxidation. In order to understand membrane properties, detailed analysis of local lipid environment is

needed, using sophisticated analytical methods such as mass spectrometry. The project will focus on 2 related biological areas: i) *Analysis of antibody recognition of glycolipids relevant to the development of autoimmune diseases of the nervous system*, and ii) *Analysis of membrane lipids associated with membrane transporters and their functional effects*. The project will be a collaboration with Waters Ltd, and will utilize their new generation cyclic ion mobility mass spectrometry (cIM-MS) instrument for enhanced ability to separate and identify membrane lipids and oxidised lipids, and determine their interactions with membrane proteins. The project will run with support and collaboration from scientists at Waters.

Project contacts

Academic: Prof Andy Pitt, Aston University: a.r.pitt@aston.ac.uk, Prof. Corinne Spickett, Aston University c.m.spickett@aston.ac.uk

The ideal applicants will have Masters degrees in biological science, biochemistry or a related discipline, and a strong drive to carry out cutting edge research for a doctoral degree. Each ESR will be expected to undertake research towards a PhD within one of the projects offered through MemTrain. Further information on the role and duties are provided in the Job Description. Further information about the specific projects on offer can be obtained by contacting the supervisors as detailed on the AMPL website or Dr Alan Goddard (a.goddard@aston.ac.uk).

The prospective candidates must not have resided for more than 12 months within the last three years in the UK (prior to the closing date of this call). Furthermore, the candidates need to be in his/her first four years of his/her research career. The four years are counted from the date a degree was obtained which formally entitles the holder to embark on a doctorate either in the country in which the degree was obtained or in the country of employment.

Aston University is committed to the principles of the Athena SWAN Charter <http://www.ecu.ac.uk/equality-charter-marks/athena-swan/>, recognised by a bronze award. We pride ourselves on our vibrant, friendly, supportive working environment and collaborative atmosphere.

Please visit our website <https://jobs aston.ac.uk/Vacancy.aspx?ref=R190342> for further information and to apply online.

As users of the disability confident scheme, we guarantee to interview all disabled applicants who meet the minimum criteria for the vacancy