

Job description

Post title and post number	Research Fellow in Mass Spectrometry Metabolomics - 55216
Organisation advertising Description	Phenome Centre Birmingham, School of Biosciences

Job summary

To contribute to the achievement of the School's research strategy by undertaking specified research activities within an established research programme.

As part of a £8 million award from the MRC, industry and University of Birmingham, we have established a state-of-the-art metabolic phenotyping (metabolomics) facility to conduct medical research including the development of stratified medicine tools. Phenome Centre Birmingham (PCB) comprises eleven Thermo Scientific and Waters liquid chromatography-mass spectrometers (LC-MS), two Bruker 600 MHz NMR spectrometers, liquid handling robots and high specification computational infrastructure to better understand metabolic perturbations in human health, disease and ageing. The School of Biosciences, LES will house the sample preparation, mass spectrometry and bioinformatics sub-facilities within the PCB.

The successful applicant must be highly motivated to contribute to fulfilling the objectives of the PCB with a focus on the development and application of metabolic phenotyping to medical research and to enhance stratified medicine. The job will include study design, sample preparation, data acquisition applying mass spectrometry platforms, project management and training. The job will also involve extensive collaborations with researchers and clinicians within and external to the university (academic, industry, scientific instrument manufacturers).

Main duties

- Perform sample analysis by applying primarily non-targeted (and targeted) LC-MS (and LC-MS/MS) methods for analysis of small molecules in human and human-related samples
- Ensure optimal operation of PCB instrumentation, including routine maintenance and troubleshooting instrumental problems, to meet goals in a timely and efficient manner
- Contribute to the experimental design of research projects in the PCB
- Apply rigorous and effective project planning and research project management, from sample arrival through to report writing
- Maintain accurate and comprehensive records of protocols and procedures applied during sample preparation, data acquisition and the processing of data
- Assist with and advise on sample preparation including robotic systems, with a focus on high-throughput liquid handling
- Be responsible for analytical validation to enhance PCB capabilities
- Develop novel methodologies and techniques to be applied in metabolic phenotyping and stratified medicine to enhance the capabilities and capacity of the PCB
- Assist with informatics analysis of mass spectrometry datasets

- Provide analytical chemistry training (UHPLC and mass spectrometer operation) within PCB, School and University.
- Work with the PCB Operations Manager and research grant holders to achieve the objectives of the PCB
- Contribute to the dissemination of high quality research in peer-reviewed journals, scientific conferences and to the general public
- Provide expert advice to colleagues and students within the disciplines of chemical analysis, metabolic phenotyping and stratified medicine
- Liaise with clinical collaborators providing guidance and advice on the collection and preparation of sample and to assist the PCB Operations Manager and research grant holders in managing the expectations of collaborators.

Skills and experience

- First degree in area of specialism and a higher degree relevant to research area: PhD (awarded) in metabolomics, mass spectrometry or (bio)analytical chemistry.
- Have worked in an industrial or academic research lab with a focus on small molecule analysis and liquid chromatography-mass spectrometry
- High level of analytical chemistry skills, in particular experience in the operation of mass spectrometry platforms
- Work accuracy, highly organised and have an attention to detail are mandatory
- Good team member who integrates easily and communicates very clearly across different fields of science including analytical chemistry, informatics and biochemistry
- Ability to communicate complex information clearly and efficiently
- Ability to assess resource requirements and use resources effectively
- Detailed knowledge of laboratory safety
- Sufficient breadth and depth of specialist knowledge in the discipline and research methods to work within established research programmes
- Good intellectual reasoning
- Able to assume responsibility
- Excellent communication and interpersonal skills for working within the large PCB team