



College/Service: Technical Services

Post/Job Title: Experimental Officer – Mass Spectrometry specialist

Reference number: S35316

Grade: F

Responsible to: Prof Nicolas Smirnoff, Dr Judith Bannerman (Technical Services) and Head of Technical Services.

Job Description

This exciting, full time, Experimental Officer role is available immediately in Technical Services, within the Department of Biosciences in the Faculty of Health and Life Sciences, based at the Biocatalysis Building, Streatham campus, Exeter. The primary responsibility of the role-holder is to operate and manage the Mass Spectrometry Facility. The MS Facility provides an analytical service for Biosciences as well as the wider scientific community and is currently focussed on small molecules. The facility is equipped with LC-triple quadrupole MS/MS, LC-quadrupole time of flight MS/MS and GC-quadrupole time of flight MS/MS instruments enabling a wide range of targeted/quantitative analyses as well as untargeted metabolite profiling/metabolomics. The post-holder will be required to have experience in managing, setting up, running, and troubleshooting instruments of this type. In addition, the role-holder will be required to carry out method development, quality control, data interpretation and analysis as well as keep up to date with developments in MS instrumentation and methods. They should have experience of both quantitative and qualitative data analysis, including non-targeted MS/MS analysis and the characterisation of unknown compounds. There will be a requirement for the role-holder to assist in supervising and training of students, post-docs and staff. The role holder will need to be pragmatic in the management of the facility from project concept, allocation of time management, cost recovery, booking of projects and practical management of workload, to ensure projects are delivered in a timely manner.

The post-holder will also be required to manage the provision of resources: financial, space, equipment and consumables, and will also fulfil the roles of Health and Safety Coordinator for this aspect of the Biocatalysis laboratory space. The post-holder will thus be responsible for the day-day operational management of the Mass Spectrometry Facility and will be expected to take a lead role in increased effectiveness and efficiency of processes and procedures to support the research objectives of the scientific community.

We are looking for an individual with demonstrable experience in relevant areas of mass spectrometry who has exceptional communication and time management skills, who has experience in providing professional technical support in a research laboratory environment. You must be able to work independently, using your initiative to tackle any problems, whilst also being a part of the wider University community.

Key responsibilities

1. Perform analysis of biomolecules of interest to various research groups within and outside of Biosciences using LC-MS and GC-MS. Currently, the facility focuses on small molecules, offering targeted/quantitative analysis as well as untargeted metabolite profiling/metabolomics.
2. To assist in the supervision and training of research students, post-docs and staff.
3. Perform method development and experimental work, working with a range of PIs and research associates to achieve desired experimental outcomes.
4. Be responsible for the routine maintenance and safe and smooth operation of the Mass Spectrometry Facility. To understand the complex and varied research requirements of all staff and students wishing to access the Mass Spectrometry Facility.
5. Manage and provide excellent technical service provision within the laboratory, working in partnership with other Technical Services Managers and sharing best-practice to optimise technical delivery.
6. To liaise with Estates Services, Exeter IT and Technical Services, to work together efficiently and effectively to deliver required infrastructure services to the laboratory.
7. Be responsible for the implementation and ongoing use of laboratory management tools to keep up-to-date asset registers, maintenance and repair records and inventories of equipment and chemicals. Liaise with internal and external providers to facilitate the correct and timely maintenance of equipment, in line with statutory requirements where appropriate.
8. Ensure that current Health and Safety policies and procedures are followed, activities are monitored; improvements are made following on from internal and external audit recommendations; incidents reported; and peer-to-peer H&S inspections executed in partnership with other Technical Services managers.
9. Act as Health and Safety Coordinator to establish and maintain lines of communication regarding laboratory H&S matters with users of the mass spectrometry lab, including taking an active role in departmental H&S committees. In consultation with colleagues regularly monitor the workplace and work activities (including COSHH and risk assessments) to ensure the effectiveness of H&S policies and to ensure that safe systems of work exist and are followed by staff, students and visitors. Advise and assist with completion of COSHH and RAs where necessary.
10. Ensure that all compliance and regulatory requirements are consistently monitored and effectively delivered and problems addressed with respect to the mass spectrometry facility. Ensure the training of all researchers in local regulations and containment level 2 laboratory procedures via comprehensive induction and ongoing training and competency assessment.
11. Take responsibility for financial management of the Mass Spectrometry laboratory budget. Take responsibility for purchasing and the management of stocks for the mass spectrometry laboratory, including liaising with the internal stores team and sales representatives to obtain competitive quotes.
12. Participating in meetings to discuss laboratory issues, to pre-empt potential problems, and to solve any issues arising within the laboratories. Be proactive and solution-oriented and act independently to implement changes in an effective and diplomatic manner.

13. Actively promote collegiality both within and outside of Biosciences. Take a proactive approach to ensuring that all staff and students feel welcome, respected and valued, and are able to work productively and efficiently to meet their individual and research group goals.

14. Organise laboratory and safety inductions for new staff and students in the mass spectrometry laboratory.

15. Be at the forefront of all requests to access the Mass Spectrometry Facility, including but not limited to, estimation of time experiments will take, estimation of time analysis will take, accurately costing in experimental and analysis time onto all grants prior to submission, costing in consumables, controlling bookings and taking a realistic view of what work is possible during busy periods.

Main Duties and accountabilities

Service Delivery

- Create a positive image of Technical Services by being responsive and prompt in responding to requests, ensuring others have the support they need to fulfil their role.
- Provide regular and routine inductions – demonstrating the use of laboratory equipment to staff, students and visitors.
- Define guidance, advice and procedures to service users regarding the availability and use of equipment and resources.
- Be responsible for determining and providing advice at a more senior level with regard to planning the provision of technical support.
- Engage with key stakeholders to ensure all needs are taken into consideration.
- Be a point of contact for colleagues and service users regarding the most appropriate, safe and legitimate use of equipment and resources, explaining detailed risk assessments and critical best practice considerations, providing cost estimates, time estimates and discussing what is practicable.
- Train users, assess their suitability and authorize access to specialist equipment and facilities.
- Assist in supervising users, translating needs to accommodate varying conditions (if applicable) and acting as point of contact to problem solve where changes affect expected conditions and outcomes.
- Provide users with guidance about physical resources and spatial needs, helping to modify unreasonable or impractical ideas to ensure research is conducted to the required standards.
- Be a point of contact for users helping them to refine a number of options with regard to the successful achievement of specified criteria. Be a recognised authority within the institution for the use of highly specialist equipment and instruments for experimental research purposes

Communications

- Receive, understand and convey complex conceptual ideas and information that may be highly detailed, technical or specialist. This may include material that would not be immediately understandable to those outside the area of work, or combines topics drawn from a number of disciplines.
- Provide mentoring to others to assist them in their own learning processes, or to help them develop new and original thought processes to realize projects and pieces of work.
- Provide feedback in a structured manner.

Teamwork and motivation

- Form and communicate a clear vision of what is to be achieved overall by the team; encourage individuals to contribute to common goals to the best of their ability; create a sense of unity, collegiality and common purpose.
- Organise and support team building activities within the group, including the annual retreat.

Liaison and Networking

- Interact at a senior level which influences significant events or decisions across Technical Services; be a member of cross-functional or technical service-wide working teams or groups where the main purpose is to build and develop ongoing relationships to ensure effective communications and effective working; initiate, build or lead ongoing working groups where the purpose of the involvement is to develop a benefit which is useful to a significant part of the service.

Decision Making, Processes and Outcomes

- Work in partnership with the academic leads to make decisions regarding the allocation of resources such as space and purchase of equipment/consumables.
- Work in partnership with the academic leads to make operational decisions to implement research needs including amending procedures and advising on a choice of operational options which will have an impact on the work area and/or work-flow.

Leadership, Planning and Organising Resources

- Work in partnership with the academic leads to prioritise and organise the work and resources of themselves and others.
- Be responsible for operational planning and organisation that will affect the laboratories including management of the group's technical support team; setting of objectives; monitoring progress and keeping to timescales; planning for the future; coordinating and monitoring the implementation of plans.
- Communicate effectively and guide other members of the group's technical support team to achieve key objectives.
- Act of a point of contact to provide leadership and set an example.
- Identify resource needs for specific operations and budgets which includes sourcing and dealing with suppliers and maintaining inventories.
- Contribute to planning at Department or Service level alongside academic and Technical Services colleagues.
- Provide guidance and supervision to team members related to organization procedures and policy.
- Take responsibility for ensuring other members of the group's technical support team understand and are able to apply relevant organizational procedures and policy.
- Be responsible for monitoring data that records how systems, procedures and policy are being used and implemented.
- Receive reports from team members and take appropriate action to rectify solutions which may involve taking direct action or reporting on to a more senior member of staff or line manager where of a critical nature.

Initiative and Problem Solving.

- Resolve problems where there is a range of information or diverse, partial and/or conflicting data with a range of potential options available.

- Apply creativity to devise varied solutions and to approach problems from different perspectives. This may include dealing with several complex problems at the same time.
- Act as point of contact for others in a particular field or subject specialism with regard to unique and rare problems.
- Majority of time is spent trying to resolve unusual and or complex problems and developing new or adapting existing methodologies to suit.

Analysis and Research

- Analyse or research complex ideas, concepts or extensive data from different perspectives; to work out how best to apply existing H&S measures, how it will fit with operations methodologies according to the overall context, objectives and expectations; and to identify relationships between complex interdependent factors. This may involve integrating concepts and methodologies from different disciplines and/or units of activity.
- Design and adapt test situations and methodology to achieve a set of research objectives or desired end-points.

Sensory and Physical Demands

- Routinely demonstrate dexterity, co-ordination using materials, tools, equipment and machinery in accordance with their work. They will use their physical and sensory abilities and skills to perform complex tasks at a level which would require either knowledge of relevant methods or routines.

Working Environment

- Manage and intervene to restructure the work or require others to take precautions and be expected to act rather than refer matters to others.
- Assess the potential degree of risk in the situation and take action in anticipation of that risk, carrying out risk assessments and COSHH assessments.
- Make safety related decisions in a high risk laboratory environment where it is required to follow and enforce safety procedures.
- Actively contribute to continuous improvement strategies.
- Implement, adhere to and promote relevant Work Health and Safety policies/guidelines, University Environmental Sustainability and waste management guidelines/policy and carry out any responsibilities outlined in Safety Management Plans and H&S audit recommendations.
- Take responsibility for carrying out audits of working practice to ensure compliance with H&S guidelines and legislation.
- Report and make recommendations to others with regard to modifications, alternations and actions necessary to ensure safe working practice in the event of an accident or serious incident.
- Regularly liaise with senior H&S staff within and outside of the organization to keep up to date with the latest updates and changes to H&S legislation.

Pastoral Care and Welfare

- Show sensitivity to those who may need help or, in extreme circumstances are showing signs of obvious distress – initiating appropriate action by involving relevant people.
- Give pastoral care and guidance where standard procedures do not always exist; following standard welfare procedures for the University where they do exist; maintaining confidentiality; building trust; judging when to listen, when to give advice or guidance and when to refer the individual for professional help.
- Be fully aware of the support networks for both themselves and their team.
- Encourage and promote behaviour consistent with University's values and standards, equality and diversity standards and guidance, and create a positive work environment.

Personal and Team Development

- Proactive personal and professional development including completion of mandatory training, skills courses and specialist training.
- Provide training and guide others on specific tasks, issues or activities; giving advice; guidance and feedback on the basis of their own knowledge or experience; and delivering in house training where appropriate. This will occasionally involve coaching and mentoring members of the work team formally or informally.
- Keep up-to-date technically and apply new knowledge.

Knowledge and Experience

- The role-holder will apply a breadth and depth of experience showing full working knowledge and proficiency of their own area of expertise; acting as a point of reference to others; demonstrating continuous specialist development, acquiring and refining skills and expertise in new or related areas through undertaking and encouraging internal and external development activity.

This job description summarises the main duties and accountabilities of the post and is not comprehensive. There is a clear expectation that the post-holder will support other areas of Technical Services and will undertake other duties of similar level and responsibility.

Person Specification

Essential	Desirable
Attainments/ Qualifications	
Educated to degree level or equivalent in Chemistry, Biochemistry, Environmental Science, Biology or equivalent experience. Professional registration or willingness to work towards registration with a relevant professional body.	MSc, PhD and/or H&S qualification.
Skills and Understanding	
Demonstrable ability to manage, operate and maintain mass spectrometry equipment, carry out routine maintenance, method development, data analysis and to provide estimates of time and cost. Proven problem-solving ability and leadership skills. Excellent time management and organizational abilities. Excellent planning skills, with ability to manage own workload, set priorities and work to strict deadlines, remaining calm under pressure. Excellent interpersonal skills. Demonstrable experience of working well as part of a team. Ability to organize and manage the duties of others.	Technical expertise in designing and implementing novel research using a wide range of techniques of relevance to a mass spectrometry laboratory.

<p>Integrity and discretion.</p> <p>Ability to effectively engage both internal and external stakeholders.</p> <p>Commitment to staff development and training.</p> <p>Excellent oral and written communication skills.</p> <p>Excellent IT skills, including MS applications.</p>	
Prior Experience	
<p>Ability to undertake analysis of biologically relevant molecules using LC-MS and GC-MS analysis as well as the full range of preparatory work required to run such analyses.</p> <p>Experience with quantitative and qualitative data analysis of MS and MS/MS data and the characterisation of unknown compounds.</p> <p>Experience of managing containment level 2 laboratory facilities supporting the day-to-day operations of multiple research groups.</p> <p>Experience of managing and distributing stocks.</p> <p>Experience of managing the day-to-day operations of a complex research laboratory.</p> <p>Experience of providing reports and management information.</p> <p>Demonstrable experience of budget management and cost recovery.</p> <p>Knowledge and experience of operating within a Health & Safety role.</p>	<p>Evidence of participation in leadership and management courses</p>
Behavioural Characteristics	
<p>Ability to work unsupervised and to use initiative.</p> <p>Organised and methodical.</p> <p>Proactive approach to solving problems.</p> <p>Ability to enrich the research environment.</p> <p>Adaptable and flexible approach to working practices.</p> <p>Researcher focused and an exceptional team player.</p> <p>Positive and enthusiastic individual.</p> <p>Liaison and diplomatic skills.</p>	

Other requirements relevant to this role

For further information, please contact Prof. Nicolas Smirnov N.Smirnov@exeter.ac.uk or Dr Judith Bannerman (Technical Services Business Partner j.a.s.bannerman@exeter.ac.uk).