



Job Description

Job title	Research Associate
Department/School	Mathematical Sciences
Job family	Education and Research
Grade	7
Reporting to	Principal Investigator (PI): Dr Haiyan Zheng
Responsible for	There may be a requirement for: day to day supervision of other staff e.g. technical staff or, co-supervision of doctoral or undergraduate students.
Location	University of Bath premises

Background and context

We are seeking a highly motivated and talented researcher to work with Dr Haiyan Zheng and Professor Chris Jennison on a research project funded by AstraZeneca, a global science-led biopharmaceutical company.

This project aims to develop novel statistical methodologies for the design and analysis of basket trials, wherein multiple patient subgroups sharing a common disease trait (e.g., genetic aberration) are evaluated simultaneously under one overarching protocol. Basket trials can provide substantial advantages including enhanced screening efficiencies, recruitment time saving, and operational streamlining. Potential gain in statistical efficiency is possible by enabling borrowing of information between subtrials (subgroups). To date, a large majority of basket trials have been conducted in oncology settings, wherein the new treatment is evaluated at a chosen dose. This limits the wider uptake of such efficient designs in non-oncologic therapeutic areas beyond oncology.

We shall set the focus onto a generic setting, wherein each subtrial comprises multiple dose levels of the treatment alongside a control group. Key objectives include (1) refining the modelling strategies for borrowing of information across the dose-response curves specific to the subtrials, (2) developing optimal designs given the dose-response models, (3) enabling mid-course adaptations in the dose-finding basket trials. Output from this research project will provide practical tools (novel methodology, software applications, etc.) to improve the efficiency and flexibility of master protocol clinical trials in the era of precision medicine.

The post-holder will be a member of Dr Zheng's research group at the Department of Mathematical Sciences, University of Bath. They will be offered a tailored development programme to grow their knowledge and career as a medical

statistician. This appointment comes with the opportunity of a 2-3 month research visit to AstraZeneca (Cambridge, UK). The post-holder will leverage all the benefits to build their own collaboration network.

Job purpose

To undertake research work under the supervision of the PI and Co-I for the advertised project funded by AstraZeneca. Specifically,

- To conduct high-quality research on theoretical and methodology aspects of statistics, with applications to modern clinical trials,
- To publish scientific papers in peer-reviewed statistical and medical journals,
- To create easy-to-implement statistical software such as R packages and Shiny Apps
- To present the research at seminars, workshops and conferences

Provisional start date: February 2025 or as soon as possible thereafter.

Main duties and responsibilities

	Responsible to the PI for (as appropriate to discipline):
1	Conduct individual and/or collaborative research projects. Contribute to the design and execution of the project e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners. Generate, collect and analyse existing data related to the project using qualitative and/or quantitative techniques.
2	Write-up results of research and contribute to the publication of results in high-quality peer-reviewed academic literature.
3	Disseminate results of research project as appropriate to the discipline through activities such as <ul style="list-style-type: none">• overseas research visits• conference presentations• public engagement activities
4	Participate in departmental/group meetings and prepare and deliver presentations/seminars to project team, internal and external stakeholders or funders.
5	Assist with the supervision of postgraduate students and undergraduate project students and the assessment of student knowledge.

6	Continually update knowledge and understanding in field or specialism to inform research activity.
7	Identify sources of funding and provide assistance with preparing bids to funding bodies. Develop ability to secure own funding e.g. travel grants.
8	Contribute to the development of research objectives and proposals for own or joint research projects, with assistance of a mentor, if required.
9	Disseminate knowledge of research advances to inform departmental teaching.
10	<p>As a member of Research Staff at the University, you will be encouraged to take up a minimum of 10 days' professional development pro rata per year. You should use this time to spend on activities that will benefit your career development and your personal growth. Examples include: attending workshops, career development coaching, mentoring, training courses, participation in networks, attending conferences, writing fellowship or funding applications, and representing the research staff community on committees or working groups.</p> <p>The University, as a signatory to the Concordat for the Career Development of Researchers, is committed to its principles. We aim to provide a supportive and inclusive environment, where researchers' contributions are recognised and valued, and we provide opportunities to enable research staff to develop their full potential.</p>
	You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.

Person Specification

Criteria	Essential	Desirable
Qualifications		
Undergraduate degree (e.g. BA, BSc, BEng)	√	
PhD degree* in subject area of direct relevance for the project; or	√	
Professional/Industrial/Creative Doctorate in subject area of direct relevance for the project (e.g. DBA, MD, EdD, PsyD, EngD, DA); or		
Professional qualification (e.g. Chartership) and relevant experience equivalent to that of a PhD; or		
Professional experience in relevant discipline equivalent to that of a PhD		
Experience/Knowledge		
Post doctoral experience		√
Demonstrated significant depth and breadth of specialist knowledge of subject matter to contribute to research programmes and to the development of departmental research activities	√	
Demonstrated awareness of latest developments in the field of research and in research design	√	
Demonstrated potential to publish in high quality, peer reviewed journals	√	
Skills		
Ability to prepare research proposals, to conduct individual research work and to disseminate results		√
Ability to organise and prioritise own workload to meet required deadlines	√	
Ability to write research reports and to effectively disseminate outcomes	√	
Excellent oral, interpersonal and written communication skills	√	

Proficiency in appropriate techniques (as appropriate to discipline)	√	
Proficiency in IT skills (as appropriate to discipline)	√	
Attributes		
Commitment to working within professional and ethical codes of conduct	√	
Innovation and developing creative solutions	√	
Commitment to excellence in research	√	
Enthusiasm and self-motivation	√	
Tenacity – working to achieve own and team objectives and to overcome obstacles	√	
Ability to be an effective team worker	√	
Commitment to safe working practices	√	

*If you have not yet been awarded your PhD, you will need to have at least submitted your thesis in order to be offered this role (if successful). This offer would be subject to you passing your viva with or without minor corrections and your PhD being awarded within your six-month probation period. Please note that an offer may be withdrawn, or probation failed, if a PhD viva is not passed or passed with major corrections. The University's normal [probationary requirements](#) apply in all other respects.