

Job Description

Job Title:	Research Associate in Statistics
Department/Division/Faculty:	Statistics Section, Mathematics Department, Faculty of Natural Sciences
Campus/Location:	South Kensington Campus
Job Family/Level:	Research Job Family, Research Associate* (Research salary scale)
Responsible to:	Professor David van Dyk
Key Working Relationships (Internal):	Professor David A van Dyk and other members of Statistics Section
Key Working Relationships (External):	Members of the CHASC International Center for Astrophysics
Contract type:	Fixed Term, full time for 24 months

Purpose of the Post

The position is funded by the Engineering and Physical Sciences Research Council in collaboration with the National Science Foundation (US) to conduct research in collaboration with the CHASC International Center for Astrostatistics. Work will focus on developing Bayesian methods for fitting sophisticated astrophysical models to complex data collected with high-tech instruments. This often involves a sequence of statistical analyses and methodological development will focus on properly accounting for errors and carrying uncertainty forward within such sequences of analyses, paying particular attention to assessment of model and systematic uncertainties. Particular applications will include analysing the morphology of extended astrophysical images, accounting for uncertainty in instrumental effects such as point spread functions, and accounting for classification errors when analysing populations of sources.

Key Responsibilities

Research Duties:

- To take initiatives in the planning and execution of research
- To direct the work of small research teams including undergraduate and postgraduate students
- To identify and develop suitable techniques, and apparatus, for the collection and analysis of data
- To develop statistical methodology, computer code, and software for the analysis of data
- To conduct data analysis
- To ensure the validity and reliability of data at all times
- To maintain accurate and complete records of all findings
- To write regular internal reports
- To write reports for submission to research sponsors
- To present findings to colleagues and at conferences
- To draft publications and prepare them for submission to refereed journals
- To contribute to writing bids for research grants
- To provide guidance to staff and students
- To take responsibility for organising resources and effective decision making in support of research
- To attend relevant workshops and conferences as necessary
- To develop contacts and research collaborations within the College and the wider community
- To promote the reputation of the Group, the Department and the College.
- To actively participate in the research programme of the Group
- To publish in high quality journals and to present data at national and international meetings

- To participate in Group research meetings and internal seminars
 - To collaborate with other allied scientists within Imperial College and elsewhere in London and abroad, as appropriate
 - Assist in the supervision of undergraduate and postgraduate research students and research assistants as required
 - To comply with the College, Division, and Unit safety practices and to attend courses on safety when appropriate
- Any other duties as may be deemed reasonable by Head of Section and/or Head of Department

Other Duties

- To undertake appropriate administration tasks
- To voluntarily undertake limited teaching duties in joint agreement with the Department
- To attend relevant meetings
- To undertake any necessary training and/or development

Where Imperial or funder conditions necessitate, you will be required to complete timesheets for your work on projects in a timely manner.

*Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant within the salary range, £36,694- £39,888 per annum.

Person Specification

Requirements	Essential (E)/ Desirable (D)
Candidates/post holders will be expected to demonstrate the following:	
Education	
Research Associate: Hold a PhD (or equivalent) in Statistics, Biostatistics, Astrophysics, or closely related discipline	E
Research Assistant: Near completion of a PhD (or equivalent) in Statistics, Biostatistics, Astrophysics, or closely related discipline	E
Experience & Knowledge	
Research interests in a relevant area of statistical science	
Extensive experience developing statistical method in collaborative scientific setting.	E
A good publication record commensurate with career stage	E
Experience in giving talks at internationally recognised conferences and workshops	E
Clear evidence of outstanding promise and originality in research	E
A specialist knowledge in developing and deploying statistical methods	E
A broad and strong background in statistics, particularly in statistical computation, Bayesian methods, and/or astrostatistics or closely related areas	E
Skills & Abilities	
Ability to carry out original research and to produce published research papers	E
Ability to conduct a detailed review of recent literature	E
Ability to identify, develop and apply new concepts, techniques and methods	E
Ability to keep accurate records of research results and activity	E

Ability to exercise initiative and judgement in carrying out research tasks	E
Creative approach to problem-solving	E
Excellent verbal communication skills and the ability to deal with a wide range of people	E
Excellent written communication skills and the ability to write clearly and succinctly for publication	E
Ability to organise own work with minimal supervision	E
Ability to prioritise own work in response to deadlines	E
Ability to interact in an interdisciplinary research environment	E
Ability to communicate complex information clearly	E
Ability to direct the work of a small research team and motivate others to produce a high standard of work	E
Excellent computing skills, particularly in R, Python, or C	E
Other	
Willingness to work as part of a team and to be open-minded and cooperative	E
Flexible attitude towards work	E
Discipline and regard for confidentiality and security at all times	E
Willingness to undertake any necessary training for the role	E
Willingness to travel both within the United Kingdom and abroad to conduct research and attend conferences/workshops and other meetings	E
Willingness to work out of normal working hours (including weekends) if the requirements of the project demand	E

Further Information

*Candidates who have not yet been officially awarded their PhD will be appointed as a Research Assistant within the salary range £36,694 - £39,888 per annum

Please note that job descriptions cannot be exhaustive, and the post-holder may be required to undertake other duties, which are broadly in line with the above key responsibilities.

Imperial College is committed to equality of opportunity and to eliminating discrimination. All employees are expected to follow the [7 Imperial Expectations](#) detailed below:

- 1) Champion a positive approach to change and opportunity
- 2) Encourage inclusive participation and eliminate discrimination
- 3) Communicate regularly and effectively within and across teams
- 4) Consider the thoughts and expectations of others
- 5) Deliver positive outcomes
- 6) Develop and grow skills and expertise
- 7) Work in a planned and managed way

Employees are also required to comply with all College policies and regulations paying special attention to: Confidentiality, Conflict of Interest, Data Protection, Equal Opportunities, Financial Regulations, Health and Safety, Information Technology, Smoking, Private Engagements and Register of Interests. They must also undertake specific training and assume responsibility for safety relevant to specific roles, as set out on the [College Website Health and Safety Structure and Responsibilities](#) page.

The College is a proud signatory to the San-Francisco Declaration on Research Assessment (DORA), which means that in hiring and promotion decisions, we evaluate applicants on the quality of their work, not the journal impact factor where it is published. For more information, see <https://www.imperial.ac.uk/research-and-innovation/about-imperial-research/research-evaluation/>

Imperial College London

The College believes that the use of animals in research is vital to improve human and animal health and welfare. Animals may only be used in research programmes which are ultimately aimed towards finding new treatments and making scientific and medical advances, and where there are no satisfactory or reasonably practical alternatives to their use. Imperial is committed to ensuring that, in cases where this research is deemed essential, all animals in the College's care are treated with full respect, and that all staff involved with this work show due consideration at every level. [Find out more about animal research at Imperial.](#)

We are committed to equality of opportunity, to eliminating discrimination and to creating an inclusive working environment for all. We therefore encourage candidates to apply irrespective of age, disability, marriage or civil partnership status, pregnancy or maternity, race, religion and belief, gender identity, sex, or sexual orientation. We are an [Athena SWAN Silver Award](#) winner, a [Disability Confident Leader](#) and a [Stonewall Diversity Champion](#).

April 2022