



## JOB DESCRIPTION

<b>Job Title:</b>	Post Doctoral Research Associate in Theoretical Physics
<b>Department / Unit:</b>	Physics
<b>Job type</b>	Fixed term, full time
<b>Grade:</b>	7
<b>Accountable to:</b>	
<b>Accountable for:</b>	N/A
<b>Purpose of the Post</b>	
<p>To undertake research in Quantum Thermodynamics at RHUL to fulfil milestones and deliverables of Leverhulme research grant: " Unconventional Statistical Physics". This includes analytical calculations of theoretical predictions, designing and running of numerical experiments and comparison with theory, and as part of a team, writing up results.</p>	
<b>Key Tasks</b>	
<p>To be responsible for :</p> <ul style="list-style-type: none"> <li>• Modelling of specific quantum systems and calculation of theoretical predictions relevant to the project.</li> <li>• Design and running of numerical experiments on a Graphical Processor Unit for simulating the physical systems considered.</li> <li>• Analysis of the obtained numerical data and comparison with theoretical predictions as well as existing experimental data from the literature and from collaborations</li> <li>• Scientific monitoring of the relevant literature and announcements.</li> <li>• Participants will need to be recruited from the undergraduate population at the University to take part in the project.</li> </ul> <p>To maintain a permanent record of numerical experimental details, to analyse and archive data generated from numerical experiments and write up the results.</p> <ul style="list-style-type: none"> <li>• Data will need to be analysed to generate results.</li> <li>• The results will need to be interpreted in the context of the relevant literature.</li> </ul> <p>To contribute to the preparation and presentation of findings of research activity to colleagues and at scientific meetings.</p> <ul style="list-style-type: none"> <li>• Results will be disseminated in scientific meetings (conference abstracts will need to be written and submitted from time to time). The post-holder will have an opportunity to present findings at scientific meetings.</li> </ul>	

To contribute to writing, submission and revision of manuscripts to be published in appropriate peer-reviewed journals, collaborating with others as necessary.

- Results and interpretation will be documented in papers that will be prepared for submission to scientific journals for peer-review and publication.

To contribute to the overall activities of the research team and the department as appropriate.

- The post-holder will be required to contribute to scientific discussion in regular laboratory meetings, advise doctoral students about planning and preparation of their own experiments, and offer advice and opinion on the analysis and interpretation of results.

To contribute to the induction and direction of other research staff and students if so requested by the Principal Investigator.

- New staff and students that may join the laboratory in the future will need to be introduced to practicalities of using specific equipment and software for experiments.

To carry out any other duties as are within the scope, spirit and purpose of the job as requested by the Principal Investigator.

Duties and responsibilities may be amended by the Principal Investigator as necessary, in consultation with the post-holder.

Any other duties as required by the line manager or Head of Department that are commensurate with the grade.

To undergo continued personal professional development

### **Other Duties**

The duties listed are not exhaustive and may be varied from time to time as dictated by the changing needs of the College. The post holder will be expected to undertake other duties as appropriate and as requested by their manager.

The post holder may be required to work at any of the locations at which the business of Royal Holloway is conducted.

- To undertake appropriate administration tasks
- To attend relevant meetings
- To undertake any necessary training and/or development.
- Maintain safe workplace practice and procedures in accordance with the requirements of Health and Safety legislation
- Maintain an up to date knowledge of relevant statutory Health and Safety legislation and recommendations and attend safety training as required.
- To observe and comply with all College policies and regulations

### **Internal and external relationships**

The following list is not exhaustive but the post holder will be required to liaise with: Students, other members of staff within the school/department and College, academics in other institutions and, where relevant, industrial or professional contacts