### JOB DESCRIPTION

<table>
<thead>
<tr>
<th><strong>Job Title:</strong></th>
<th>Research Associate in Theoretical Particle Physics</th>
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<tbody>
<tr>
<td><strong>Department / Unit:</strong></td>
<td>Physics</td>
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<tr>
<td><strong>Job type</strong></td>
<td>Professional Services</td>
</tr>
<tr>
<td><strong>Grade:</strong></td>
<td>7</td>
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<tr>
<td><strong>Accountable to:</strong></td>
<td>Prof. Stephen West</td>
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<tr>
<td><strong>Accountable for:</strong></td>
<td>N/A</td>
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**Purpose of the Post**
- To carry out research activities in the field of Astro-particle Theory focusing on the theory and phenomenology of dark matter.
- To contribute to the development of new ways to detect dark matter utilising cutting edge developments in quantum sensors.
- To collaborate across institutions as part of consortia.

**Key Tasks**
- Perform research in astroparticle theory with an emphasis on topics related to dark matter and dark matter detection techniques.
- Compose research manuscripts for peer-reviewed publication.
- Prepare and present findings of research activity to colleagues and at scientific meetings.
- Contribute to the preparation of grant applications, research presentations and publications as requested.
- Undergo continued personal professional development.
- Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio.
- Pilot, refine and optimise mathematical and computational techniques with limited supervision from the PI.
- Take a leading role in overcoming methodological problems that arise during the project lifespan, and keep the PI up-to-date with the project’s progress.
- Formulate and test new hypotheses arising from the data, where relevant.
- To provide guidance to staff and students.
- To attend relevant workshops and conferences.
- To take part in the supervision of graduate students where appropriate.
- To promote the reputation of the group, Department and College.
Other Duties

- To undertake appropriate administrative tasks.
- To attend relevant meetings.
- To undertake necessary training.
- To undertake specific safety responsibilities relevant to individual roles, as set out in the College procedures.
- 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.

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.

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.
- Other members of the RHUL dark matter group.
- Collaborators at partner institutes as part of the QUEST-DMC and QSHS projects.
**Job Title:** Research Associate in Theoretical Particle Physics

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<thead>
<tr>
<th>Knowledge, Education, Qualifications and Training</th>
<th>Essential</th>
<th>Desirable</th>
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<tbody>
<tr>
<td>PhD in relevant subject area (or near completion of)</td>
<td>X</td>
<td></td>
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<tr>
<td>Proven knowledge of research techniques and methodologies</td>
<td></td>
<td>X</td>
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<tr>
<td>Demonstrable comprehensive knowledge in the subject area</td>
<td>X</td>
<td></td>
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<tr>
<td>Experience of working in industry in a research capacity</td>
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<td>X</td>
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<thead>
<tr>
<th>Skills and/or Abilities</th>
<th>Essential</th>
<th>Desirable</th>
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<tbody>
<tr>
<td>Ability to teach/demonstrate research methods and techniques</td>
<td>X</td>
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<tr>
<td>Excellent communication skills</td>
<td>X</td>
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<tr>
<td>Proven ability to analyse and write up data</td>
<td>X</td>
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<tr>
<td>Ability to present complex information effectively to a range of audiences</td>
<td>X</td>
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<tr>
<td>Use of webpage software to create engaging copy and images</td>
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<td>X</td>
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<tr>
<th>Experience</th>
<th>Essential</th>
<th>Desirable</th>
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<tr>
<td>Evidence of a publication record in good quality publications</td>
<td>X</td>
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<tr>
<td>Experience of supervising undergraduate students</td>
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<td>X</td>
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<td>Evidence of contributing to research bids</td>
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<td>X</td>
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<tr>
<td>Practical experience of applying specialist skills and techniques required for the role</td>
<td>X</td>
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