

**OUR REWARD PRACTICES/  
JOB DESCRIPTION:  
Experimental Officer**

Date created:

Date created

Date updated:

08/11/2019

<b>Generic role title:</b>	Technician
<b>Job family:</b>	Technical
<b>Reference number:</b>	STM-086-19
<b>Grade:</b>	Grade 6
<b>Salary Scale:</b>	£28,331 - £32,817 <i>per annum</i>
<b>Contract:</b>	Ongoing Full time
<b>School/Department:</b>	School of Physical Sciences
<b>Location:</b>	University of Kent, Canterbury campus
<b>Line manager:</b>	Head of Technical Services or their nominee
<b>Immediate line reports:</b>	N/A
<b>Anticipated start date:</b>	02 March 2020

**Job purpose**

Undertake specialist technical, teaching and research support to deliver the goals and milestones of the School's Centre for Astrophysics and Planetary Science Impact Group on projects related to space and materials science. Specifically the role entails managing, operating, developing and maintaining the Group's Light Gas-Gun facilities and associated equipment.

**Key accountabilities**

This section details the main accountabilities (or responsibilities) of the job, together with a selection of indicative duties. Other duties, commensurate with the grading of the post, may also be assigned from time to time.

	<i>Frequency</i>
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1.	Manage and operate the University of Kent's Light Gas-Gun to further enhance the research programme of academics, both within the School of Physical Sciences and external research collaborators, whilst conforming to all required Health and Safety regulations.	Daily
<b>Example duties:</b>		
1.1 Prepare and setup the Light Gas-Gun as directed by an academic within the Impact Group or their nominee.		
1.2 Responsible to perform shots and the routine cleaning of the gun, and report any problems to Impact Group academics and/or the Head of Technical Services.		
1.3 Assist staff and students in the impact laboratory in the correct and safe use of apparatus, instrumentation and equipment.		
1.4 Deal with staff and students' general requirements and enquiries and ensure all safety documentation is current and up to date.		
2.	Responsible for ordering replacements parts and consumables as needed from Research grants held by academics using the University's "value for money" principles to keep the Light Gas-Gun available for research and teaching purposes.	<i>Frequency</i> Weekly
<b>Example duties:</b>		
2.1 Ensure reactive maintenance work is completed, and any follow-on work has been identified and reported back to the Impact Group academics or their nominee.		
2.2 Ensure spares that are needed to complete work are ordered and any follow-on work is noted and scheduled with approval.		
2.3 Manage, maintain and update all service record for equipment used in the Impact Laboratory.		
2.4 Ensure that all electrical equipment has been PAT electrical tested.		
3.	Support delivery of the research and teaching including general preparation of equipment and materials to ensure that all equipment is available as required for the efficient operation of the shot programmes.	<i>Frequency</i> Weekly
<b>Example duties:</b>		
3.1 Prepare instrumentation (high speed cameras, pressure transducers etc.) used for research and teaching. Undertake care, maintenance and servicing of the light gas-gun instruments and equipment, liaising as necessary with suppliers.		
3.2 Estimate forward requirements for materials, estimating ordering needs, finding best suppliers and producing orders for authorisation.		

3.3	Responsible for managing the smooth day-to-day secure and safe operations of the laboratory as directed by the Impact Group academics.	
3.4	Provide advice and assistance to members of the research group and undergraduate students on matters of safety, techniques and use of instrumentation/apparatus in the impact laboratory to maintain a safe environment.	
4.	Work with staff and international collaborators to carry out shot programmes to produce world class research.	<i>Frequency</i>
		Weekly
<b>Example duties:</b>		
4.1	Researchers, with input from the role-holder, will write up their research findings for publication in leading peer-reviewed international journals.	
4.2	Ensure that any new/modified methodologies utilised for any research programmes are written up as standard operating procedures for the laboratory.	
4.3	Continuously assess the Light Gas Gun operation and make any necessary modifications required to enhance the efficiency and effectiveness of it.	
4.4	Assist in any future development of the Light Gas Gun facilities, as agreed with researchers, using clearly defined aims and objectives.	
5.	Communicate project progress regularly and compile data acquired in a form to allow rapid transformation of documented research results into high quality research papers.	<i>Frequency</i>
		Monthly
<b>Example duties:</b>		
5.1	Report on progress regularly to the grant holder(s) and the rest of the research group at the scheduled monitoring meetings with collaborators.	
5.2	Assist where appropriate in the publication of research papers. Significant contributions will be acknowledged with joint authorship.	
6.	Supervise the teaching and demonstration of the Light Gas-Gun including general preparation of equipment and materials to ensure that all equipment is available as required for the efficient operation of the shot programmes.	<i>Frequency</i>
		Weekly
<b>Example duties:</b>		
6.1	Supervise undergraduate project students in the lab as needed. Giving general advice and performing shots as directed by the academic project leader.	

6.2 Supervise, and train where requested, postgraduate students in the lab. Giving general advice and training on the light gas-gun and associated tasks and performing shots as directed by the academic project leaders.

6.3 Assist with teaching programmes and script marking as required.

### Internal & external relationships

This section indicates with whom the job holder comes into contact and liaises/ communicates with on a regular basis, and for what purpose.

**Internal:** All SPS Staff and Students, Science Supplies and members of other Science Schools, Estates Department, Health, Safety and Environmental Unit.

**External:** Suppliers, Local Schools, Other Universities, Visiting International Researchers

### Health, safety & wellbeing considerations

This job involves undertaking duties which include the following health, safety and wellbeing considerations:

Please review accompanying HIF form and delete as appropriate, only listing any hazards outlined as implicit within the role- further definitions of the hazards can be found on the HIF

- Handling primers and black-powder to produce shotgun cartridges
- Working with vacuum equipment (rotary pumps and vacuum lines)
- Transferring of high pressure gases (100 Bar) from external cylinders
- Working at heights (when setting up the vertical firing gun)
- Regular use of hand-held tools and equipment
- Working in confined spaces (i.e. setting up targets inside a 1m<sup>3</sup> chamber)
- Prolonged physical/manual work/manual handling
- Regular use of Screen Display Equipment
- Working with chemicals (including requirement to wear nitrile gloves, lab coat, safety goggles).
- Working with cryogenics (CO<sub>2</sub> ice, LN<sub>2</sub> and low temperature, -140° C, freezers)
- Working with Class-2 lasers (as part of the velocity measurement system)
- Working in a busy lab environment with other people
- Pressure to meet important deadlines

### Person specification

The person specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Applications will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in an application, or cover letter (where applicable), which back-up any assertions made in relation to each criterion.

<b>Qualifications / training</b>	Essential	Desirable	Assessed via*
A PhD (obtained, or near completion) in Physics, Engineering or related subject or equivalent experience		✓	A
An undergraduate degree (BSc./MPhys./MEng. or equivalent) in a Physics or Engineering discipline or equivalent experience	✓		A

<b>Knowledge, skills and experience</b>	Essential	Desirable	Assessed via*
Practical knowledge light gas-guns.	✓		A, I
Knowledge of vacuum equipment and gauges	✓		A, I
Familiarity with handling shotgun primers and black-powder for making shotgun cartridges	✓		A, I
Familiarity with measurement and test equipment such as DVMs, oscilloscopes and temperature probes		✓	A
Knowledge of PC-based acquisition software (i.e . <i>LabView</i> )		✓	A
Good IT skills, particularly Microsoft Office packages	✓		A
Excellent oral and written communication skills, giving the post-holder the ability to deal confidently with a range of people at all levels.		✓	A
Careful and meticulous manual handling skills (for assembly of sabots and shotgun cartridges).	✓		A
Be willing to assist in the production of scientific papers for publication in peer-reviewed journals	✓		I
Able to supervise Undergraduate project students in the Impact Lab and to help with their projects	✓		I

<b>Additional attributes</b>	Essential	Desirable	Assessed via*
Commitment to deliver equality, diversity and inclusivity in recruitment	✓		I

\*Criterion to be assessed via:

A = application form or CV/cover letter

I = interview questions

T = test or presentation at interview