

JOB DESCRIPTION

A3260

<p>Job Title: Senior Research Associate (for particle physics distributed computing at Lancaster)</p>	<p>Present Grade: 7</p>
<p>Department/College: Physics Department</p>	
<p>Directly responsible to: Prof R W L Jones</p>	
<p>Supervisory responsibility for: -N/A</p>	
<p><u>Other contacts</u> Internal: The Lancaster High Energy Physics Group, ISS staff External: GridPP and ATLAS Distributed Computing team members</p>	

Major Duties:

This post combines the support of a large computing and data-access farm with many processors and also a considerable storage resource running distributed computing middleware (over 9000cores and ~4PB disk). The facility is integrating with a shared High End Computing (HEC) facility serving users across the campus. The post will support the use of the facility by experimental particle physics users, both in Lancaster and worldwide; and a broad range of academic users in Lancaster of the HEC. The post will require the holder to have a good understanding of and to interact with the experiment's computing framework for the ATLAS experiment at the Large Hadron Collider; and of the opportunities and the challenges of evolving computing hardware and software technologies. The post will undertake research into prototypes using these technologies to assess the options, and will communicate the findings to colleagues in the UK and worldwide, and through conferences and papers. The post will work with the HEP group system administrator, an existing support post and with central staff running the HEC. There will also be interaction with similar posts at the other sites as part of the GridPP project, which is UK-wide. The post will also be required to project aid in the procurement of additional hardware, which will include negotiating deliveries and time scales, organising teams of people and negotiating with end users to ensure new hardware meets all stakeholder requirements. The post will be expected to contribute to and expand the research of the GridPP collaboration.

The post will

- Monitor and maintain the distributed computing hardware run by the Lancaster HEP group;
- Install and validate the required operating systems and middleware for distributed computing operations;
- Ensure that the available capacity and actual usage is correctly reported through distributed computing publishing systems;
- Attend technical meetings, GridPP collaboration meetings and some external meetings. This may require the occasional international travel.
- Help with the selection of the correct technical solutions to allow the development of the facility, and play a part in the vendor selection.
- May be asked to help with middleware technical developments according to need and the post-holders skill-set. The post provides opportunity for the applicant to research leading edge technologies. For example, there is an interest in containerisation to improve the flexibility of grid operations.
- Present independent research at national and international meetings.
- Convey technical information to colleagues at national and international meetings.
- Write research publications for international conferences and/or journals.
- Lead, direct and develop independent research in computing technologies and particle physics.
- Lead and develop research collaborations with colleagues outside their immediate research team and department.
- Peer review research for national and international journals.
- Work with colleagues to initiate and develop links with industry.
- Contribute to knowledge exchanges with industry.
- Write detailed project proposals, reports and procurement assessments.
- Write detailed planning and infrastructure requests for senior management as needed.
- Contribute to grant proposals for infrastructure funding.
- Engage in internal department administration/committees
- Postholder will be responsible for leading the development of procurement frameworks for HEC/distributed computing.
- With colleagues, shape and direct computing resources and strategic plan for HEC/Distributed computing.
- Project manage and coordinate purchasing agreements and contracts for HEC/distributed computing equipment.
- Coordinate project teams and assign timescales.
- Negotiate contracts and purchasing requests.
- Prioritise and direct spending for computing resources.

