JOB DESCRIPTION
ALPHA-g Project Scientist

Job Family: Applied Science | Date: Sept. 22, 2017

BASIC FUNCTION: The primary function of the position is to provide hands-on technical and project management efforts at CERN to help ensure the successful completion of the ALPHA-g CFI Project resulting in a functioning third-generation antimatter apparatus (ALPHA-g Apparatus) for the study of gravitational forces on antihydrogen and high precision microwave spectroscopy of antihydrogen

ORGANIZATIONAL RELATIONSHIPS:

The position reports directly to the University of Calgary's ALPHA-g CFI Principle Investigator ("CFI PI", currently TRIUMF Affiliate Scientist Professor Robert I. Thompson). The incumbent will be stationed at CERN near Geneva Switzerland, so significant portions of the supervision will be handled remotely. The incumbent will also work closely with the Geneva-based ALPHA-g Deputy Spokesperson (currently, Dr. William Bertsche).

PRINCIPLE RESPONSIBILITIES:

- Ensure the success of the ALPHA-g CFI Project by making leading contributions with the project management, administration, and hands-on technical and scientific work on the construction commissioning, and operation of the ALPHA-g Apparatus.
- Provide hands-on technical and scientific support to the ALPHA team throughout the phased construction, commissioning, and operation of the ALPHA-g Apparatus
- Interfacing with CFI PI, the ALPHA-g Project Administrator, and U Calgary Research Services team, provide a presence at CERN to continuously monitor the progress of the ALPHA-g project against project benchmarks and to ensure proper processes and documentation are being followed to comply with regulations and requirements of CFI and agencies providing matching funding.
- Ensure CFI PI is kept abreast of any developing challenges, opportunities or issues related to the design, construction, assembly and commissioning of the ALPHA-g systems.
- Ensure ALPHA-g delivered capabilities match those outlined in the CFI proposal and those of the collaboration.
- Working with the ALPHA Safety Offer, responsible for the safe and proper use of equipment and materials related to the construction, commissioning, and initial operation of the ALPHA-g Apparatus.

Safety on the Job -Worker Responsibilities: From WorkSafeBC's "Safety on the Job is Everyone's Business"
- Know and follow health and safety requirements affecting your job.
- If you don't know how to do something safely, ask for training before you begin work
- Work safely, and encourage your co-workers to do the same
- Correct any unsafe conditions or immediately report them to your supervisor
- Immediately report any injury to a first aid attendant or supervisor
- Take the initiative. Make suggestions to improve health and safety

SUPERVISION RECEIVED:

The incumbent works under broad direction from his/her direct supervisor or his/her delegates. Most work is performed independently but with regular consultation with CFI PI. Decisions involving major design

changes or impacting specifications are discussed with and reviewed by CFI PI and relevant ALPHA senior scientists with responsibility for the relevant aspect of the project.

SUPERVISION EXERCISED:

This position has no direct reports, but may provide technical oversight or guidance to technicians, postdocs, and ALPHA students working on ALPHA-g related projects.

KNOWLEDGE AND SKILLS:

- Experience leading a research initiative or project
- Healthy publication record in sub-atomic physics or related fields
- High level of effective time/project management, organizational, supervisory skill, personal initiative & teamwork, accuracy and strong attention to detail
- Advanced knowledge of design, assembly, commissioning, and optimization of experimental physics systems in relevant areas such as cryogenics, ion and atom trapping, particle detection, particle beam transport, vacuum technology, monitoring systems, microwave technologies, and laser systems
- Ability to work under pressure, to multi-task and to deal multiple simultaneous priorities in an effective, efficient manner
- Ability to communicate effectively with internal and external stakeholders at all levels of multiple organizations (UCalgary, CERN, ALPHA Collaboration)
- Proficiency in working with automated DAQ and Control software and hardware
- Willingness and ability to learn to work with relevant UCalgary and CERN online administrative and reporting systems
- Proficiency in Microsoft Office programs
- Proficiency in working with sub-atomic physics simulation and analysis programs is an asset
- Proficiency or experience with PeopleSoft, CERN CET/EDH systems, or similar administrative software is an asset
- Ability to communicate verbally and in writing in English is a requirement of this position
- Ability to communicate verbally and in writing in French would be viewed as an asset.

NUCLEAR ENERGY WORKER: The position does not require the incumbent to be trained as a NEW nuclear energy worker.

MINIMUM QUALIFICATIONS AND EXPERIENCE:

PhD in Physics or Engineering with relevant experience in leadership of an experimental project.

CRITICALITY OF POSITION:

- Success of this role will significantly impact the success of outcome of ALPHA-g project
- Work focuses on all aspects of the ALPHA-g CFI Project, and thus will require simultaneous expertise and activity on financial, technical, managerial and collaborative aspects of the project
- Multiple simultaneous deadlines throughout the year (ex. financial year-end, institutional reporting, documentation for CFI and other funder reporting,…))
- Work requires the management of competing interests with satisfactory outcomes for all involved. ALPHA-g exists within the 50-person ALPHA collaboration and the ability to work collaboratively with all members will be vital. Significant impact on success of project
- High impact of error. Position responsible for dealing with multiple complex issues