

**QUEEN'S UNIVERSITY SUPPORT STAFF
POSITION SUMMARY**

DEPARTMENT: SNO Institute, Physics
POSITION NUMBER: 00500534
TITLE: Software Developer

**INCUMBENT
GRADE:** 8

JOB SUMMARY:

Reporting to the Project Director, working with the particle astrophysics (SNOLAB) group in the Department of Physics at Queen's University in Kingston, the incumbent will be responsible for developing, maintaining, and distributing analysis, simulation and other software in support of the DEAP dark matter experiment, a novel detector currently being installed at SNOLAB.

KEY RESPONSIBILITIES:

- Work with technical and scientific personnel on the project, and will have primary responsibility for developing, maintaining and distributing analysis and simulation software.
- Design, code, test and debug algorithms for analyzing data, including documenting all algorithms and protocols
- Implement, test, document and debug tasks to run on data acquisition systems.
- Develop and maintain a programming style guide, and provide programming and software installation assistance to research personnel.
- Develop, maintain, and distribute analysis and simulation software in support of the DEAP dark matter experiment.
- Assist in commissioning and ongoing software support for the DEAP detector process control system, a system that interfaces the detector hardware (gauges and sensors and actuated valves and other controllers) to monitor the detector status and to change the detector configuration.
- Ensure that both software and hardware are functioning correctly, calibrated corrected, and working as expected.

REQUIRED QUALIFICATIONS:

- A University degree in computer sciences or equivalent.
- Consideration will be given to an equivalent combination of education and experience.
- Experience in programming in C or C++. Experience with database software, software distribution, or controls software will be considered as assets.

SPECIAL SKILLS:

- Excellent oral and written communication skills
- Ability to work independently and as part of a team
- Familiarity with C++ and database software
- Knowledge of statistics
- Ability to learn new information quickly
- Strong analytical and problem solving skills in order to understand problems in system design and development

DECISION MAKING:

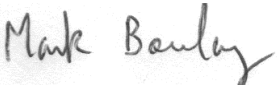
- Make decisions towards the development and maintenance of the programming style guide, and determine whether software submitted by participating scientists conforms to that guide.
- Assess software implementation and provide guidance to the participating scientists on coding efficiency.
- Determine that the overall software package has been sufficiently modified to require a new distribution to be made available to the collaboration, and will define and perform checks to decide if the software is performing adequately.

	<u>YES</u>	<u>NO</u>
1. Is this position technical in nature in a lab or lab-related area?	X	<input type="checkbox"/>
2. Does this position support a research project?	X	<input type="checkbox"/>
If yes, indicate name of project: DEAP-3600 Dark Matter Experiment		
3. Does this position report directly to a Principal Investigator (PI)?	X	<input type="checkbox"/>
If yes, indicate name of PI: Mark Boulay, Queen's		

SUPERVISORY RESPONSIBILITIES:

	<u>YES</u>	<u>NO</u>
Does this position have any supervisory responsibilities?		X

SIGNATURES:

	Date
Incumbent 	Sept 17, 2012
Supervisor	
Department Head	