

## Job Posting

### Underground Engineer/Technician Technical Lead Programmer

**Objectivity**, a Sudbury Ontario based technology development and transfer consultancy, is currently looking to staff a project office for the delivery of a **Ventilation on Demand (VOD)** demonstration project. Working with local industry, research and supplier sponsors, and under the auspices of the Center **for Excellence in Mining Innovation (CEMI)**, this 1 year project must demonstrate the science and financial benefits of applying VOD to underground mines.

The project requires a multi-disciplinary team of engineers, computer programmers and mathematicians to work together to provide industry with a better understanding of the key drivers and obstacles to reducing the costs of designing and operating ventilation networks while maintaining safe working conditions.

The ideal candidates will have strong written and verbal communication skills, strong computer capabilities, have an understanding of underground ventilation and be naturally curious.

The main goal of the project is to collect data underground which will be used to calibrate financial/engineering models. The engineering models include a commercial discrete event simulator and a ventilation network solver. The main programming task consists in creating the visualization, data analysis and dataflow code to link the two engineering models together.

### Underground Engineer/Technician

Reporting to the project manager the Underground Engineer/Technician will be responsible for the collection of ventilation data in two of Sudbury's mines. Approximately 40% of the candidate's time will be spent at or in the partner mines. The successful candidate will have common core training and experience working underground, with experience in performing ventilation measurements. An aptitude with electronic instrumentation is an added benefit.

In addition to data collection the Engineer/Technician will also work with the technical leads and programmers to insure that data is properly integrated into the financial and technical models.

#### Key areas of responsibility:

- Work with technical lead to define data acquisition process
- Review, define and communicate safe working practice to team members
- Plan and Coordinate field/lab work (perform as applicable)
- Organize internal, external resources to deliver work tasks
- Works to develop relationship with site personnel to help with project delivery
- Assists with work performance as required.
- Insures data integrity
- Provides timely reporting
- Assists with modeling and scoping for programmers

## Technical Lead

The technical lead is responsible for the science required to implement the financial and engineering models used to determine the cost/benefits of the VOD program.

Ideally the candidate has a degree in Physics and/or Mathematics and a strong capability to work with data analysis programs (If you know R that would be great). Ability to clearly communicate and guide members of the team are also critical assets.

### Key areas of responsibility:

- Insure that the science of the work is correct
- Perform literature (academic, patent, etc) review
- Design test criteria
- Design field/lab work
- Perform field/lab work (as required)
- Insure data integrity/validity
- Provide modeling expertise
- Data modeling to design data storage
- Develop algorithms
- Provide technical/scientific presentations to stakeholders

## Programmer

Working with the technical lead develop and implement algorithms to both transfer data between existing engineering applications and develop the detailed analysis and reporting required by the project. Capabilities of developing detailed delivery specifications from abstract discussions is a key skill for this project. Please be ready to demonstrate samples of your work.

### Key skills:

- C++, python
- Object-oriented analysis and design experience
- Knowledge of Linux
- Knowledge of UML
- Graphics programming (vtk preferred)
- Visual modeling experience
- Knowledge of design patterns
- Good communication skills
- Use of svn/git, wiki, etc

Please submit your resume in confidence, or any questions about the project to: [jobs@objectivity.ca](mailto:jobs@objectivity.ca)

Please use the title of the position in the email title.