Bioinformatics postdoctoral position:

Tools and algorithms to characterize populations using high-throughput sequence data

Location: Department of Biology and Faculty of Computer Science, Dalhousie University, Halifax, Nova Scotia, Canada, and Bedford Institute of Oceanography, Fisheries and Oceans Canada

Description: We are seeking a postdoctoral fellow to develop new methods to characterize intraspecific biodiversity using next-generation sequencing data. The project will focus on the development of analytical pipelines that can analyze NGS data generated from genotyping by sequencing approaches such as restriction site-associated DNA sequencing (RAD-seq) and multiplex amplicon panels. Specific elements will include:

- Development of tools to identify promising single nucleotide polymorphisms (SNPs) from RAD-seq analysis and amplicon sequencing.
- SNP validation, screening, and population genetic parameter estimation and analysis
- Development of new techniques, likely using Bayesian regression, to associate genetic SNP variation with environmental and phenotype information and provide graphical views of the data
- Application of software to new data sets from various fish populations

The postdoc will be expected to take the lead in application and method development, validation of pipelines and testing of classification approaches. Other personnel on the project will assist with some of these tasks.

Qualifications:

Essential

- PhD degree in Bioinformatics, Computer Science or related field
- Experience with programming languages and software development

Desirable

- Experience with scripting languages such as Perl or Python

- Knowledge of statistics and/or machine-learning techniques, in particular the R language
- Familiarity with next-generation sequence data analysis
- Experience with existing analysis tools (STACKS, GATK, Bowtie, etc.)

Position: The position is initially funded for two years, starting ASAP. Remuneration will be $47,500 per year, plus benefits.

To apply for the position, please submit a PDF file consisting of a one-page cover letter describing your relevant experience and interests, a CV, and the names of at least two references, to Robert Beiko (beiko@cs.dal.ca).