

Candidate Information

Position:	Data Analyst/R Programmer in Fisheries Science Computation
School/Department:	School of Biological Sciences
Reference:	18/106932
Closing Date:	Wednesday 5 December 2018
Salary:	£33,199 - £36,261 per annum
Anticipated Interview Date:	Monday 17 December 2018
Duration:	available until 30 October 2019

JOB PURPOSE:

Develop and implement R and FLR-based modelling for management strategy evaluation (MSE) of measures to protect by-catch fish in European waters, using the models as operational models in conjunction with international case-study partners using fisheries survey data and stakeholder input. Assist partner institutions in implementing the MSE, including management of versions and code.

MAJOR DUTIES:

1. Develop fisheries and marine community models using tools based on R and FLR, using high performance computation and coding in R (and possibly other scripting languages, e.g. MATLAB, Python etc.)
2. Extract, condition and filter data from (mainly ICES) data base files, relevant to and for the purpose of stock assessment and management, taking responsibility for data security and proper data management.
3. Disseminate the results of this work through contributions to joint publications, presentations at conferences and scientific meetings, project meetings and events for stakeholder engagement.
4. Maintain the project's computer systems, code and data in good order and compliance with QUB, EU and legal requirements for data management and maintain multiple version control (e.g. with version control software) among the partner organisations.
5. Ensure the effective maintenance of information and documentation, e.g. systems specifications, disaster recovery plans, maintenance schedules and computer programs for these systems.
6. Liaise productively with project colleagues, in other EU member state research institutes and with stakeholder representatives, contributing to the achievement of milestones and deliverables of the project on schedule.
7. Provide specialist/professional advice, information and assistance to users to resolve problems and to maximise service quality, efficiency and continuity.
8. Build and maintain an effective working knowledge and understanding of fisheries management, MSE and issues regarding by-catch and vulnerable and data-poor species, relevant computation methods and related ecology and mathematics as part of professional development.

Planning and Organising:

1. Responsible for planning own work and collaboration with other model building efforts across an international collaboration, within the boundaries set by the project management framework (the project contract).
2. Manage personal time for model building, maintenance and dissemination activities.
3. Contribute as appropriate to ensuring that milestones and deliverables are achieved on time (in conjunction with project management team).

Resource Management Responsibilities:

1. Responsible for good maintenance of file system, software, code and data belonging to the QUB-based component of the project and manage the dissemination and version control of the project's models (implementations) among partner institutions.
2. Help to co-ordinate and support use of the models within the project in other institutes.

Internal and External Relationships:

1. Report to Dr Keith Farnsworth (QUB project Principle Investigator).

2. Collaborate with the whole project team, especially with other modelling professionals and with the overall project P.I. Dr Anna Rindorf of the Danish Technical University.
3. Support stakeholder engagement and maintain proper procedures for data access and transfer across institutions (e.g. following ICES and international data agreements).

ESSENTIAL CRITERIA:

1. Hold a 2.1 (or above) University Honours Degree (or equivalent) in a subject with demonstrated significant programming component/scientific computing.
2. A minimum of 3 years' experience working in a computing environment in a role that involves program development/scientific computation.
3. Experience in programming R scripts to a professional technical standard (not just using R for statistics).
4. Experience of programming for scientific computation to a professional standard using two or more of the following;
 1. R
 2. C
 3. C++
 4. Fortran
 5. Java
 6. Other 3rd generation language
 7. scripting language: Matlab, or equivalent, or Python, or related.
5. Knowledge and understanding of Statistics and mathematical model evaluation / sensitivity / uncertainty analysis and data conditioning.
6. Understanding of Fisheries Science, its terminology, data sources and the way these are used and managed.
7. Ability to communicate scientific and engineering ideas and information in a clear, precise and concise way.
8. Ability to communicate technical information with clarity and effectiveness.
9. Self-motivated, precise, dedicated and dependable, collaborative and communicative.
10. Willing/able to travel throughout the UK and Ireland and abroad, as necessary.

DESIRABLE CRITERIA:

1. MSc or PhD in scientific computing, or in natural resource management.
2. Previous experience in a Fisheries Science role.
3. Experienced use of FLR or near equivalent fisheries MSE tool.
4. Experience of modelling for Fisheries management using FLBEIA, or equivalent.
5. Experience in Software project management or having taken a leading role in software development with responsibility for code maintenance and independent working.
6. Working with high performance computer systems, including parallel computation functions, especially (but not limited to) in R.
7. Management Strategy Evaluation. Stock assessment, data limited stock methods and FLR, FLBEIA, F-cube models.
8. Knowledge and understanding of Statistics to include applications of Bayesian methods and maximum likelihood estimation, multivariate analysis and time-series analysis.