

Candidate Information

Position:	Research Fellows –Bioinformatics
School/Department:	Biological Sciences
Reference:	19/108057
Closing Date:	Wednesday 12 February 2020
Salary:	£33,797 per annum
Anticipated Interview Date:	Thursday 5 March 2020
Duration:	Available until 31 July 2021

JOB PURPOSE:

To be highly productive, ambitious and collaborative members of the Fish Genetics Research Group led by Prof. Paulo Prodohl in the Institute for Global Food Security at the School of Biological Sciences.

The positions are linked to the SFI-DEL multi institute Investigators Award “Wild farmed interactions in a changing world: formulation of a predictive methodology to inform environmental best practice to secure long-term sustainability of global wild and farm fish populations”. This is a multidisciplinary study that capitalises on the existence of unique field common garden experiment facilities, comprehensive multi-generation (50 years) archive biopsy material, and both, in-house modern ‘omics and High-Performance Computing (HPC) equipment infrastructure. The group employs novel analytical advances in population genomics, transcriptomics, epigenomics and quantitative genetics to understand the complex effects of wild-farm hybridisation on the dynamics of quantitative traits and fitness in wild populations. The successful applicants will have responsibilities in independent research, supervision, planning, day-to-day lab management, collaborations and outreach.

MAJOR DUTIES:

1. Develop, plan and deliver an area of personal research and expertise, and undertake research under supervision within the research programme aimed at understanding the genetic architecture of hybridization between farm and wild salmon. Computational workflows/pipelines will include analysis of genomics, transcriptomics and epigenomics datasets for solving complex biological questions as well as develop novel analytical tools for improved data analysis.
2. Develop and implement, with support, a highly ambitious personal career development plan in the course of the post.
3. Maintain up-to-date knowledge of the field of interest at the cutting edge and communicate same to the group.
4. Carry out analyses, critical evaluations and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research.
5. Present regular progress reports on research to members of the broader research group, other groups within the Centre/University, to external audiences nationally and internationally to disseminate and publicise research findings.
6. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
7. Assist grant holder in the preparation of funding proposals and applications as well as project progress reports to external bodies.
8. Prepare competitive applications for own funding such as travel grants, project grants and fellowship applications.
9. Carry out routine administrative tasks associated with the research projects/group to ensure that projects are completed on time and within budget and that the group functions efficiently. These might include organisation of project/group meetings and documentation, financial control, stock management/procurement, risk assessment of research activities and development of SOPs.
10. Carry out routine administrative tasks associated with the day-to-day running of the research group in a communal lab setting.
11. Carry out, as appropriate, school/undergraduate/post-graduate student and visiting researcher training and supervision, demonstrating, tutoring or lecturing duties within the post holder's area of expertise and under the guidance of a member of academic staff.

12. Participate in local research-related activities such as journal clubs, training sessions, seminar series etc.
13. Assist in assessment of research communications and data, particularly within the group.
14. Additional research and/or laboratory related duties including outreach activities, within the general range of the post and competence of post holder.

Planning and Organising:

1. Plan for specific aspects of research programme. Timescales range from 1-6 months in advance and may contribute to overall research group planning.
2. Plan for access to, and use of, research resources (including University HPC infrastructure), laboratories and workshops where appropriate.
3. Plan own day-to-day activity within framework of the agreed research programme as well as communal activities (e.g. meetings) where appropriate.
4. Coordinate and liaise with other members of the research group and collaborative research groups regarding work progress and stock management.
5. Assist in training other group members on effective planning and organisation.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner including liaising with vendors and collaborators.
2. Provide guidance as required to support staff and any post-graduate/under-graduate students and visiting researchers who may be assisting with work of the group.

Internal and External Relationships:

1. Liaise on a regular basis with supervisor, colleagues, students and collaborators.
2. Communicate appropriately and effectively with lab colleagues on topics such as latest research findings/results within the group and field.
3. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
4. Travel to, and present at scientific meetings and work in collaborative laboratories when necessary.
5. Join external networks to share information and ideas and help develop and maintain external collaborations, as appropriate.
6. Contribute to the School/Centre outreach programme.

ESSENTIAL CRITERIA:

1. Have or about to obtain a PhD in Bioinformatics, Computational Biology, Systems Biology, Population Genomics, Evolutionary Biology or a related areas
2. 3 years recent relevant research experience
3. Programming skills in one of the following languages:
 - R language
 - Perl
 - Python
 - C/C++
 - Shell scripting
4. Experience with the analysis of high throughput genomics datasets.
5. Experience in one or more of the following two areas:
 1. Transcriptomics
 - RNA-seq data processing
 - Gene expression analysis
 2. Genomics/Epigenomics
 - ChIP-seq ATACseq or methylation analysis (WGBS sequencing data) analysis
 - Analysis of whole genome sequencing data
6. Recent high-quality original research publications in reputable peer-reviewed journals, commensurate with career stage
7. Methodical approach to project management and meticulous in regards to experimental procedures and record keeping.
8. Highly ambitious, motivated, efficient, organised and show a commitment to, and interest in, research topic.
9. Competent in maintaining knowledge of cutting-edge of field of expertise
10. Competent in giving effective and informative oral and poster presentations.
11. Ability to build contacts and participate in internal and external networks.

12. Competent in communicating stipulated research skills essential to the post in CV/job application.
13. Strong ability to work from own initiative.
14. Excellent team working skills in multiple internal and external team settings.
15. Leadership qualities.
16. Excellent problem-solving skills.
17. Irregular hours including evening, weekend and other out-of-hours working will be a component of the research at times.
18. Must be willing to travel to national and international meetings and collaborative laboratories

DESIRABLE CRITERIA:

1. Experience in one or more of the following languages:
 - Unix OS and HPC infrastructure
 - proprietary genomic tools such as Partek Genomics and Geneious
 - Open-source bioinformatics software
2. Experience in one or more of the following languages:
 - Microarray data
 - Denovo transcriptome assembly
 - Denovo genome assembly
 - RNA editing, mutations, annotations
 - CNV segmentation
 - Gene splicing analysis
 - Metagenomics
 - Micro-RNA analysis