

**Candidate
Information
Booklet**

IRC220207

**Principal Scientific Officer -
Pathogen Genomics Bioinformatician**

**Agri-Food and Biosciences Institute
Northern Ireland (AFBI)**

**Completed Application Forms
must be returned to HRConnect
no later than 12 noon (UK time)
on**

Monday 21st August 2017

Agri-Food and Biosciences Institute Northern Ireland (AFBI)

Communication between HRConnect and you

HRConnect will issue electronically as many competition communications as possible, you should therefore check your email account to make sure that you don't miss any important communications in relation to this competition. There may, however, still be a necessity to issue some correspondence by hard copy mail.

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BACKGROUND

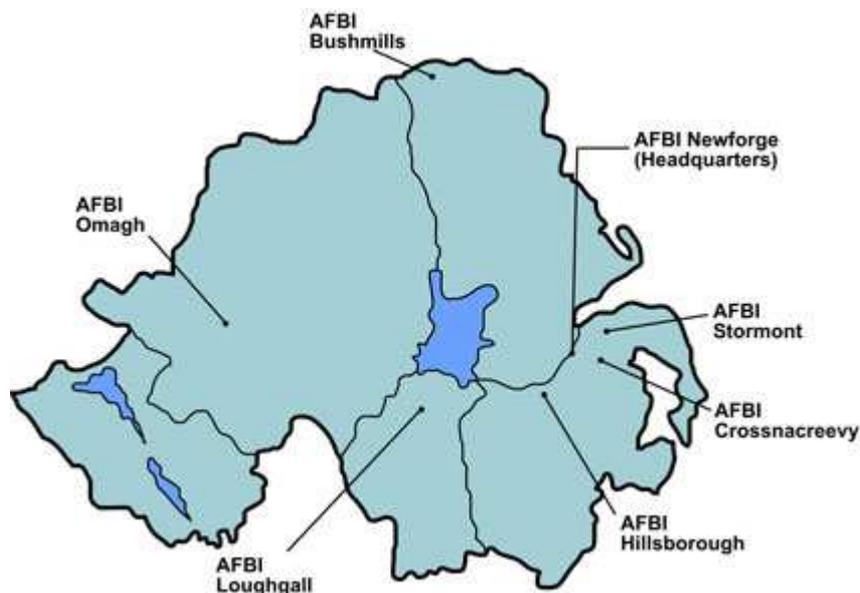
AFBI is one of the world's leading providers of scientific research and services to government, non-governmental and commercial organisations.

AFBI was established on 1 April 2006 as a Non-Departmental Public Body sponsored by Department of Agriculture, Environment and Rural Affairs (DAERA). It is responsible mainly for the provision of statutory and scientific programmes in the areas of agri-food, animal and plant health, fisheries and the environment, providing access to specialist expertise and providing facilities to Industry and Public Sector bodies for contracted scientific services. AFBI has a staff complement of approximately 650 people, with a budget of approximately £55million across its 7 specialised sites throughout Northern Ireland.

Location

AFBI is based at seven sites across the province, with its Headquarters at Newforge Lane, Belfast.

The AFBI sites are located at Newforge Lane, (Belfast), Crossnacreevy, Hillsborough, Stoney Road (Stormont), Loughgall, Bushmills and Omagh.



ABOUT THE AGRI-FOOD AND BIOSCIENCES INSTITUTE

AFBI is an internationally-facing multidisciplinary scientific organisation, based at seven locations in Northern Ireland. In line with our mission of “using scientific excellence to advance the local and global agri-food sector”, the Institute has developed a reputation for being an influential, internationally-recognised, centre for innovation in agri-food and biosciences, providing high quality and locally-relevant science to all of its customers. AFBI’s science is outcome-driven and aimed at solving important practical problems for a wide range of local, national and international customers in the public and private sectors.

Our staff carry out world class scientific research, surveillance, and analytical and diagnostic testing for a wide range of customers in the fields of animal health and welfare, sustainable agricultural systems, plant science, food innovation and safety, environmental protection, fisheries and aquatic ecosystems, and agricultural and rural economics.

Our “2020 Strategy” includes plans for an ambitious programme of capital investment in AFBI’s infrastructure, including improved facilities at AFBI Hillsborough and a new Veterinary Sciences Main Building, which will give us one of the most modern laboratory and ancillary estate infrastructures of any agri-food research institute in Europe.

As the Northern Ireland government’s main research and statutory testing provider in the areas of agri-food, fisheries and the environment, AFBI plays a major role in the Northern Ireland knowledge economy. AFBI’s scale, relationships with a wide range of international research organisations and close links with local industry mean that it is ideally placed to carry out research that is of both global and local impact.

ABOUT THE VETERINARY SCIENCES DIVISION

The Institute has two scientific divisions, Sustainable Agri-Food Sciences Division (SAFSD) and Veterinary Sciences Division (VSD), which are supported by the Finance and Corporate Affairs Division (FCAD). The post of Principal Scientific Officer (PSO) - Pathogen Genomics Bioinformatician is based within Veterinary Sciences Division (VSD). VSD currently employs approximately 260 veterinary, scientific, technical and support staff across its four Branches (Bacteriology, Chemical and Immunodiagnostic Sciences, Disease Surveillance and Investigation, and Virology).

Major programmes of work within VSD are animal health and welfare, and food safety. VSD investigates diseases of farm animals, poultry and fish and provides a specialist animal disease diagnostic service to the agricultural industry. It carries out statutory work and provides an emergency response capability on behalf of government. It also conducts underpinning research and development (R&D) on animal diseases and food safety issues relevant to the local industry. This work is funded by DAERA, other government bodies and the private sector. More specifically, VSD supports government policy and industry by providing laboratory testing and scientific expertise in:

- Emergency responses and contingency planning for epizootic disease outbreaks and food-chain problems
- Targeted (active) surveillance for animal diseases, including local, national and EU disease control and eradication schemes
- Scanning (passive) surveillance for animal disease agents, including zoonotic infections
- Chemical and microbiological food surveillance, including veterinary drug residue testing
- Underpinning R&D in animal diseases and food safety
- Provision of specialist advice to government and industry
- Technology transfer to industry

The main areas of work of the four VSD Branches include:

Bacteriology Branch

Bacteriology Branch is located in a modern building which houses suites of laboratories at bio-containment levels 2 and 3. The Branch work programme includes statutory, analytical and research work on the major bacterial pathogens of animal and public health significance. Much of this work underpins important DAERA animal disease control programmes in areas such as bovine tuberculosis, brucellosis and salmonellosis. Other work areas include food-borne zoonoses, antimicrobial resistance and paratuberculosis. The skill base within the Branch comprises traditional and specialist bacteriology methods, molecular diagnostics, test development, molecular epidemiology, experimental infection models, immunology, genetics, experimental design, wildlife ecology, veterinary epidemiology and biometrics. Multi-disciplinary approaches to bovine tuberculosis and the detection and control of *Campylobacter* are currently major research focuses of the Branch. Bacteriology Branch incorporates the National Reference Laboratories (NRL-

UK-NI) for Brucellosis and the NRL-UK-NI for *Salmonella*. Laboratory tests in support of statutory disease control are accredited and audited to ISO17025 and projects are managed and audited to ISO9001 certification standard. The Branch has a major international reputation for research and innovation, and works with a range of external industry and academic collaborators. Research funding sources include DAERA, the research councils, and the EU.

Chemical and Immunodiagnosics Sciences Branch (CISB)

The Chemical and Immunodiagnostic Sciences Branch undertakes a wide programme of mainly statutory work in the animal disease and chemical residues/contaminants areas. The Branch has EU NRL status for illegal veterinary drug residues, and provides screening and confirmatory analysis for a wide range of veterinary drug residues, marine biotoxins, pesticides, mycotoxins and heavy metals. Tests are carried out for residues in meat products from cattle, sheep, pigs, poultry, shellfish and fish, milk and eggs, as well as animal feeding-stuffs. This work is supported by basic and strategic research that has resulted in the development of novel analytical methods for a wide range of compounds. A large volume of serological testing is carried out in CISB on behalf of DAERA and industry customers. This work includes serological testing in support of DAERA's brucellosis eradication programme, surveillance for exotic diseases such as enzootic bovine leucosis, bluetongue virus and highly pathogenic avian influenza, equine viral serology, avian viral and *Mycoplasma* serology, and testing required for the export/import of animals. The Branch also encompasses a transmissible spongiform encephalopathy (TSE) testing unit. The Branch provides DAERA and FSA with an emergency response in the event of outbreaks of major epizootic diseases, marine biotoxin incidents, and misuse of veterinary drugs, pesticides or chemical contaminants.

Disease Surveillance and Investigation Branch (DSIB)

The animal disease diagnostic services provided by the AFBI Stormont and Omagh laboratories safeguard animal and public health by identifying the causes of disease in submitted material and promote the competitiveness of the agri-food industry. Surveillance for notifiable, zoonotic (transmissible to humans) and emerging diseases forms an important part of this work. A comprehensive range of laboratory tests is available to assist in the diagnosis of animal disease and to provide detailed information on the health status of herds and flocks. Specialist advice on animal diseases is given to the agricultural industry and veterinary profession. A high throughput of diagnostic work allows AFBI to identify outbreaks of notifiable diseases, new or emerging diseases, changes in patterns of endemic diseases and conditions appropriate for further research. These activities underpin the animal health status of Northern Ireland. DSIB also operates the AFBI Cattle Health Scheme which provides voluntary eradication of certification disease control programmes. Benefits of this scheme include improved disease control, improved profitability, advice on biosecurity and certification of cattle health status with regard to bovine viral diarrhoea (BVD), infectious bovine rhinotracheitis (IBR), leptospirosis, neosporosis and Johne's disease.

Virology Branch

The work of the Virology Branch is aimed at improving the diagnosis and control of viral diseases of farmed animals (pigs, poultry, cattle, sheep and aquaculture) in support of DAERA policy objectives on animal health and welfare of N. Ireland livestock. Through its research programme, the Branch aims to develop or improve diagnostics for a range of virus infections, particularly exotic viruses which pose a potential threat to the local industry; to provide or improve vaccines for the control of viral diseases; and to investigate new disease syndromes of potential viral etiology, with the aim of providing new diagnostics and control measures. The Branch has responsibility for the molecular confirmation of major infectious / epizootic diseases in animals and provides a range of support services to other branches such as tissue culture and the animal services unit. Virology staff provides expert scientific advice to DAERA on animal health issues including the statutory testing programmes for animal diseases, emerging animal health risks and emergency responses to epizootic disease incidents. The skill base within the Branch comprises traditional and specialist virology methods, molecular diagnostics, test development, experimental infection models, immunology, experimental design and access to veterinary epidemiology and biometrics. The Branch has a major international reputation for research and innovation, and works with a range of commercial, government and university research organisations. Research funding sources include DAERA, commercial companies, research councils, and the EU.

BACKGROUND TO THE POST

The post of PSO - Pathogen Genomics Bioinformatician is one of three new posts being created within AFBI as part of an investment in Genomics Strategy which is aimed at driving the further development of the genomics capability of the Institute. This new post represents an exciting opportunity for an individual to join AFBI at a pivotal time to enable AFBI to harness the potential of genomics across the diverse data streams and remits of AFBI and to establish a new cross-cutting genomics platform to drive the development of AFBI in forthcoming years.

This Principal Investigator (PI) vacancy offers the opportunity to join a well-established, multi-disciplinary team of PIs based in the Bacteriology Branch at VSD Stormont. This PI will also be expected to collaborate productively with PIs and researchers in the Virology Branch and with other Branches across AFBI who have similar pathogen genomics and bioinformatics needs spanning animal health and welfare and plant health domains. Given AFBI's research linkages and collaborations, such as through its membership of the Centre of Innovation and Excellence in Livestock (CIEL), its current international collaborations in the UK, Ireland and other European countries and those it is building in the USA, Canada and China, there is extensive opportunity to lead or be productively involved in exciting forefront research.

These work areas develop and undertake a wide range of molecular- and genome-enabled tests and analyses with a focus on supporting the control of infectious diseases in livestock and wildlife and surveillance, including molecular characterization of antimicrobial resistant (AMR) bacteria. Such approaches include pathogen discovery, pathogen detection, pathogen characterization and epidemiological tracing, including phylogenetics analyses. There is also research interest in understanding and exploiting the population genetics of pathogens, plants and animals, including livestock, fish and wildlife populations. Collaborative quantitative and molecular genetics research continues to be undertaken to better understand the genetics of host resistance to infectious diseases.

AFBI already has several DAERA Assigned Work Programme-funded workflows that incorporate this 'modernising microbiology' agenda and include the transition from molecular or genome-enabled tests and analyses to genomic testing, notably in bovine TB, brucellosis and other bacterial pathogen outbreak investigations. Several current DAERA- and externally-funded research projects have genome-enabled components, as do other project bids that are under review currently.

More specifically, work within VSD includes the following **work areas**:

1. Development and deployment of molecular epidemiological typing techniques for major veterinary and food-borne pathogens, most notably for bovine tuberculosis. Application of these tools provides important new insights into disease epidemiology, ecology and evolution and provides high-resolution tools for investigating outbreaks and investigating aspects of the control programme, disease ecology and epidemiology.
2. Development and deployment of molecular tests in support of pathogen characterisation. For example, molecular methods to determine *Salmonella* spp. designation complement more traditional serotyping methodologies. In addition, PCR-based methods to detect the mobile DNA elements and plasmids associated with AMR in a variety of pathogens are performed. In future, much of this work will be delivered by pathogen whole-genome sequencing (WGS) and associated bioinformatics which will capture data for use in determining pathogen species, phenotype and epidemiology.
3. Deployment of microsatellite DNA profiling technologies in cattle and wildlife. The former is used by external customers and DAERA to determine unique identities for animals tested and to inform on parent/progeny relationships, and is accredited to the ISO17025 standard. The latter is increasingly used to support efforts to characterise the ecology and behaviour of wildlife species affected by zoonotic diseases like bovine tuberculosis.
4. Data management of associated genotypic data. With particular reference to maintenance of large molecular epidemiological datasets, mapping, detailed reporting of trends, outbreak investigations and rational selection of specific samples for future collaborative studies.

Facilities

The work area is supported by well-equipped, specialist, molecular biology laboratories capable of analysing host and pathogen DNA (genotyping). The Branch has a PCR suite, equipped with PCR workstations and instruments. The area also has Sanger DNA- and pyro-sequencing facilities, microsatellite genotyping facilities and now has a bench-top 'next-generation' sequencing instrument and dedicated server capable of supporting pathogen whole-genome sequencing and allied analyses. IT facilities are managed by a dedicated AFBI Biometrics team and AFBI can secure approved access to detailed animal-level location, movement and test data. In addition, high specification bio-containment level 3 facilities exist for experimental infection of large animals.

JOB DESCRIPTION

There is currently one full-time position to be filled. This post will be a permanent post. A reserve list will exist and will be held for a period of 12 months from the date of interview, to cover any further vacancies which may arise.

Salary

The salary for the post will be within the range £47,749 - £52,334 within which pay increases will be on an incremental basis provided staff performance reports are satisfactory.

Starting salary will normally be at the minimum of the scale except for existing AFBI staff for whom starting salary may be determined by either promotion or re-grading terms, if these are more favourable.

In exceptional circumstances only, consideration may be given to starting at a higher point on the salary scale for applicants with additional relevant experience and/or qualifications. The relevance and extent of the additional experience will be determined by AFBI at the time of offer of appointment.

Annual Leave

In addition to the usual public and privilege holidays, there is an annual leave allowance of 25 days, increasing to 30 after five year's satisfactory service.

Working Hours

The successful candidate will normally be required to work 5 days each week, totalling 37 hours. On occasions the duties may include some evening and weekend working. AFBI operates a flexi working system.

Location

The successful candidate will be based at AFBI Stormont, however, they may, on occasion, also be expected to work at other sites in Northern Ireland as required

Travel

The post may will some travel throughout the locally and internationally and for this reason the successful candidate will require access to a form of transport that will permit them to meet the requirements of the post in full.

Probation

The post holder will serve 12 months probation in the new post. This will commence from the date of appointment. At the end of the probation period a formal review will be conducted to determine if the posting will be made permanent.

Further Information

Further information about the post may be obtained from William Campton by email on william.campton@afbini.gov.uk, or by telephone on 028 90525732.

If you have any queries about the competition process you should contact HRConnect on 0800 1 300 330, or email: recruitment@hrconnect.nigov.net.

KEY RESPONSIBILITIES

There is currently one vacancy for a Principal Scientific Officer (PSO, Pathogen Genomics Bioinformatician). This PSO will be based in the Bacteriology Branch at VSD and will report to a Senior Veterinary Research Officer and Head of Bacteriology Branch (G6) within VSD. This position represents a unique opportunity, given the access within AFBI to exceptionally well-recorded data, excellent infrastructure and close linkages that exist with the agri-food sector.

This post is an exciting opportunity for a skilled and experienced Bioinformatician or Computational Biologist to lead and manage a high-priority, high-impact, innovative AFBI project to develop pathogen genomics and bioinformatics pipelines to accelerate AFBI's 'modernising microbiology' agenda. The successful candidate will have a major cross-cutting role in linking with other AFBI scientists in a diversity of disciplines including those within VSD with considerable expertise in epidemiology, including molecular, genomic and genetic epidemiology, pathogenesis and molecular immunology of major veterinary pathogens. The impact of the work is likely to be considerable within the local industry providing the post-holder with tangible achievements within and beyond academia.

The post-holder will lead the establishment and development of pipelines to deliver pathogen WGS and allied bioinformatics outputs to support existing service delivery and research and which can develop further to become increasingly self-sufficient and self-financing. This will deliver the capability within AFBI to more fully index genetic variation, allowing pathogen detection and characterisation with increasing speed and resolution. When further integrated with advanced mathematical modelling this powerful approach is expected to provide unprecedented insights into disease transmission, including the analysis and visualization of microbial transmission networks. The successful candidate will be required to manage, analyse, exploit and achieve outputs using the huge amounts of genome data produced by WGS and high-density genotyping.

The PSO will help develop comprehensive hardware and software systems that integrate multiple bioinformatics tools for the analysis and characterisation of pathogen WGS data. Downstream outputs from these data will include:

1. Phylogenetic analyses for pathogen population structure and epidemiology;
2. Comparative genomics to elucidate genetic variation underpinning specific pathogen phenotypes such as AMR and host range;
3. Characterisation of host and pathogen gene expression in infection models (eg transcriptomics);
4. Metagenomic analyses of complex environmental and biological (eg gastrointestinal) samples for characterisation of known and novel pathogens.

MAIN DUTIES AND RESPONSIBILITIES

The main duties and responsibilities of the post will include:

1. Establishment and day-to-day management of Bioinformatics capacity for the Pathogen Genomics programme

To deliver the Project Leader and Principal Investigator role, to plan, lead, resource and provide overall management of a programme to establish, maintain and develop pathogen WGS and bioinformatics workflows to support existing and future needs within VSD and more widely across AFBI. Key activities include: establishing and expanding in-house bioinformatics capabilities and infrastructure, performing exploratory, routine and advanced bioinformatics analyses, identifying new opportunities where bioinformatics can bring value to AFBI, and reporting and discussing findings with colleagues across disciplines. Topics of particular interest are: explaining phenotypic differences through comparative genomics and transcriptomics; pathogen re-sequencing, *de novo* genome sequencing, assembly and annotation; comparative genomics; genomics-based species and strain identification; interactions with international genomics databases; pathogen discovery; determining species and strain abundances using microbiome and meta-genomics techniques; and facilitating the exploration of -omics data by fellow researchers etc.

To contribute increasingly to the identification of current and future needs and opportunities for AFBI to increase its presence and impact in pathogen genomics and bioinformatics.

2. Delivery of research and development programmes

The post-holder will be responsible for planning, managing and delivering productive research projects, on time and to budget. They will be required to interact effectively at a senior level with potential DAERA and other external research funders and will play an important role in maintaining and expanding the research base of the Branch through securing such research funds.

The successful candidate will be required to lead a programme of research across a broad range of areas including the detection, characterisation, tracking and control of microbial pathogens of animals, the food supply chain and the environment using molecular biology, genetics and genomics tools, bioinformatics analyses and meta-data analyses. To deliver high quality and timely bioinformatics analyses to help solve complex problems as part of multi-disciplinary teams including molecular biologists, veterinary epidemiologists, application specialists, etc.;

The post-holder will be expected to lead scientific and technical staff and to develop and maintain productive collaborative links with research and other groups both within AFBI and locally, nationally and internationally. They will

be expected to be expert with scientific developments in their specialist area and to demonstrate continued professional development.

3. Secure funding and work with funders

The successful candidate will be required to lead in the preparation of bids to secure research funding from DAERA, EU, industry and other funders, as appropriate, and to establish and maintain good relationships with funders. To manage the contractual and financial commitments associated with research projects and contracts. To ensure that allocated budgets are handled in a fully auditable manner, compliant with AFBI governance procedures, and to supply appropriate financial data to project funders when required to do so. To collaborate effectively across Branches and Divisions on relevant areas of bioinformatics and pathogen genomics.

4. Establish and maintain linkages with other research groups

To establish and maintain linkages with other relevant research groups in the UK, Republic of Ireland and internationally to ensure that, where possible, research is carried out collaboratively and that AFBI's research is recognised internationally. To identify and capitalise on potential externally-funded and relevant bioinformatics and pathogen genomics collaborations with external experts.

5. Delivery of statutory and analytical work programmes

The post-holder may also be required to oversee the delivery of aspects of the statutory and analytical work programme to required standards and timescales.

6. Expert scientific advice

To provide expert scientific advice to DAERA Veterinary/Policy leads, other government and external customers on bioinformatics and pathogen genomics and issues related to animal disease to AFBI senior management and relevant stakeholders as required.

7. To undertake data interpretation, the publication of results and scientific paper/report writing and dissemination of research findings

The post-holder will be required to produce high quality scientific papers to a standard necessary to ensure publication in high impact peer-reviewed scientific journals, to prepare reports (e.g. press articles, quarterly/annual reports, industry reports, and other material) as required to ensure effective technology transfer of relevant results, and to meet the contractual requirements of research programmes. To communicate the outcomes of research projects to industry, stakeholders and to the scientific community, and to provide a lead and response to policy on issues arising from research programmes, when appropriate.

8. Manage staff and resources

To manage (and assist with the management of) research, technical and other staff as appropriate, in compliance with all relevant AFBI health and safety, quality assurance, financial, work-force management and governance practices. To manage work-force, finances and other resources to establish WGS-based pipelines and bioinformatics support workflows to meet current needs and plan to meet future needs. To assist with the management of all aspects of the Section and related work areas as necessary, and to take full management responsibility for the leadership and due diligence of the staff and resources. Manage and deliver a pathogen bioinformatics-driven research programme and contribute effectively to the statutory analytical programme under ISO9001:2000 and ISO17025:2005, respectively, as required.

9. Support the Head of Bacteriology Branch

To support and assist the Head of Branch (HOB) as a senior manager, Project Leader and PI, including deputising for the HOB, inputting to Branch strategic planning, ensuring adequate corporate governance is in place, budgetary planning and control, staff management and responding to queries from AFBI senior managers and DAERA Veterinary/Policy leads. To establish and undertake the day to day management of bioinformatics and pathogen genomics and associated research programmes.

10. Student supervision

The post holder may be required to supervise/co-supervise postgraduate and undergraduate students involved in research programmes.

11. To undertake continuous professional development

To maintain an up-to-date knowledge of scientific literature and commercial developments in relevant areas and to demonstrate personal development in all relevant areas of managing research programmes, staff and resources. To maintain and communicate to colleagues an awareness of developments in bioinformatics and pathogen genomics and the relevance of such developments to this post.

12. To provide staff training in pathogen WGS and bioinformatics

The post-holder will be required to identify and respond to the training needs of relevant staff in bioinformatics and pathogen genomics and take responsibility for mentoring and training the relevant colleagues in accessing and interpreting bioinformatics results.

13. To fulfil other duties

The post holder may be required to fulfil other duties and responsibilities as determined by management including as part of the Institute's response to major epizootic disease, food-chain or other emergency situations. They may also be required to teach university or other students, deliver talks to groups of industry representatives and carry duties under the Animals Scientific Procedures Act. Applicants should be aware that they may also be expected to deal with blood samples and/or animal tissue samples which may be contaminated with transmissible diseases.

The job description is not intended to be rigid and inflexible. Rather, it should be regarded as working guidelines within which the post-holder will work.

The successful applicant will be required to travel locally, nationally or internationally in order to perform the duties of the posts. They will also be required to occasionally work outside of normal office hours including weekends.

The above is not meant to be an exhaustive or prescriptive list but to provide a good indication of the main duties of the post. The emphasis on particular duties will vary over time according to business needs.

ELIGIBILITY CRITERIA

Applicants **must** by the closing date for applications have:

1. A primary degree in computational biology, microbiology, biochemistry, veterinary medicine, biological science or a related natural science discipline.

AND

2. A PhD in the area of pathogen bioinformatics and pathogen genomics.

OR

A taught MSc in Bioinformatics or Computational Biology.

AND

3. A minimum of 2 years post-MSc or post-PhD experience in undertaking productive research in pathogen whole-genome sequencing and bioinformatics.

AND

4. Experience of using industry-standard bioinformatics tools, such as BWA, Samtools, GATK, Velvet or equivalents.

AND

5. Proven experience in working in a UNIX/Linux environment along with experience in programming, such as Java, Python, Perl, C++, R, shell etc., in the context of bioinformatics sequencing pipelines.

SHORTLISTING CRITERIA

In addition, applicants should be aware that after an eligibility sift, should it be necessary to shortlist candidates to go forward to interview, the following shortlisting criteria will be applied and in the following order:

1. A proven ability to have contributed significantly to peer-reviewed publications published in peer-reviewed ISI listed scientific journals* and other outputs commensurate with career stage.
2. Proven track record of initiating and managing research studies in pathogen genomics and bioinformatics.
3. Proven ability to win research funds from competitive research calls in pathogen genomics and bioinformatics and computational biology.

* Candidates must provide evidence of shortlisting criterion 1 by submitting a fully cited bibliography (authors, paper title, journal title, volume and page numbers) of all refereed and non-refereed publications. Candidates can provide this information within the application form itself, or if necessary, it can be sent by the closing date for applications as a separate attachment to: recruitment@hrconnect.nigov.net

The bibliography should be marked with the relevant competition reference number (IRC220207), competition title and your full name.

In providing evidence for each of these criteria it will be essential that candidates draw upon specific examples of work they have undertaken to illustrate the extent to which they possess the experience and skills required. It will not be sufficient simply to list the duties and responsibilities of posts held.

Relevant or equivalent qualifications: Applications will also be considered from applicants with relevant formal qualifications considered by the selection panel to be of an equivalent or higher standard to those stated. Give the type of qualification and date awarded. If you believe your qualification is equivalent to the one required, the onus is on you to provide the panel with details of modules studied etc so that a well informed decision can be made.

Please note:

- **You should ensure that you provide evidence of your experience in your application form, giving length of experience, examples and dates as required.**
- **It is not sufficient to simply list your duties and responsibilities.**
- **The panel will not make assumptions from the title of the applicant's post or the nature of the organisation as to the skills and experience gained.**
- **If you do not provide sufficient detail, including the appropriate dates needed to meet the eligibility criteria, the selection panel will reject your application.**
- **ONLY the details provided by you in your application form (the employment history and eligibility criteria) will be provided to the selection panel for the purpose of determining your eligibility for the post.**
- **Further information on the Core Competences for this grade can be accessed through www.nicsrecruitment.gov.uk**

PERSON SPECIFICATION

Candidates will be expected to demonstrate the skills and competencies set out in the Essential Criteria. In addition, they will also be required to demonstrate the skills and competencies set out in the Northern Ireland Civil Service (NICS) competency framework at **Level 4** for the purpose of personal and professional development.

What is the NICS competency framework?

The competency framework sets out how all NICS employees should work. It puts the Civil Service values of integrity, honesty, objectivity and impartiality at the heart of everything they do, and it aligns to the three high-level leadership behaviours that every civil servant needs to model as appropriate to their role and level of responsibility: Set Direction; Engage People and Deliver Results. Competencies are the skills, knowledge and behaviours that lead to successful performance. The framework outlines ten competencies, which are grouped into three clusters as set out below. The competencies are intended to be discrete and cumulative, with each level building on the levels below i.e. a person demonstrating a competency at level 3 should be demonstrating levels 1 and 2 as a matter of course.

The Northern Ireland Civil Service competency framework can be accessed through www.nicsrecruitment.gov.uk.

It is important that all candidates familiarise themselves with the competency framework as this forms the basis of the assessment / interview criteria as outlined below. You should refer to the behaviours listed under level 4 of the relevant competence areas.

CORE COMPETENCES

The Core Competence Framework, which is grade specific, describes what people need to do in order to be effective at work. It is not enough to just have the knowledge and skills to do our jobs. Competence is about what people actually do, it is about how you apply or demonstrate the knowledge and skills whilst carrying out your tasks. Demonstrated competence is observable and measurable.

Principal Scientific Officer is analogous to Grade 7 in the NICS.

The selection process will include a presentation and a competence based interview.

PRESENTATION

Before the competence based interview, candidates will be required to deliver a presentation, lasting no more than 5 minutes, the subject of which will be provided to candidates in the invitation to interview letter.

Candidates should fully prepare their presentation in advance of the interview and no preparation time will be provided on the day of interview. Your presentation should be delivered via PowerPoint and you will be asked to submit it to HRConnect by a specific date prior to your interview. Full details will be provided should you be invited to interview.

Following the presentation, the panel may elect to ask questions on the presentation.

The presentation will be used to assess against the Professional Knowledge and Skills and Leading & Communicating competencies.

Marks available: 15

INTERVIEW CRITERIA

Candidates will be expected to demonstrate the skills and competencies set out in the Essential Criteria and shortlisting criteria. In addition, they will also be required to demonstrate competency in Professional Knowledge & Skills pertaining to this post together with the skills and competencies set out in the Northern Ireland Civil Service (NICS) competency framework at Level 4 for the purpose of personal and professional development.

1. Professional/Specialist/Technical Ability

Demonstrates an in-depth knowledge and understanding of current developments and best practice in pathogen genomics and bioinformatics. Develops and updates professional/specialist/technical knowledge and skills to meet objectives and improve performance. Applies knowledge and skills in the collection, collation, manipulation, analysis and interpretation of scientific data. Applies knowledge and skills in writing scientific papers and technical reports.

Marks available: 30 Minimum standard: 18

2. Seeing the Big Picture

Seeing the big picture is about having an in-depth understanding and knowledge of how your role fits with, and supports, organisational objectives and the wider public needs. For all staff, it is about focusing your contribution on the activities which will meet Departmental and Programme for Government goals and deliver the greatest value.

Marks available: 10

3. Making Effective Decisions

Effectiveness in this area is about being objective, using sound judgement, evidence and knowledge to provide accurate, expert and professional advice. For all staff, it means showing clarity of thought, setting priorities, analysing and using evidence to evaluate options before arriving at well reasoned, justifiable decisions.

Marks available: 10

4. Leading and Communicating

At all levels, effectiveness in this area is about leading from the front and communicating with clarity, conviction and enthusiasm. It is about supporting principles of fairness of opportunity for all and a dedication to a diverse range of citizens.

Marks available: 15 Minimum standard: 9

5. Collaborating and Partnering

People skilled in this area create and maintain positive, professional and trusting working relationships with a wide range of people within and outside the NICS, to help to achieve business objectives and goals. At all levels, it requires working collaboratively, sharing information and building supportive, responsive relationships with colleagues and stakeholders, whilst having the confidence to challenge assumptions.

Marks available: 10 Minimum Standard: 6

6. Building Capability for All

Effectiveness in this area is having a strong focus on continuous learning for oneself, others and the organisation. For all staff, it is about being open to learning and keeping their knowledge and skill set current and evolving.

Marks available: 10

7. Delivering at Pace

Effectiveness in this area means focusing on delivering timely performance with energy and taking responsibility and accountability for quality outcomes. For all staff, it is about working to agreed goals and activities and dealing with challenges in a responsive and constructive way. It is also about leaders providing the focus and energy to drive activities forward through others and encourage staff to perform effectively during challenging and changing times.

Marks available: 10

Total Marks Available: 110

Over Pass Mark: 66

COMPETENCE BASED INTERVIEWS

Selection panels will design questions to test the applicant's knowledge and experience in each of the above areas and award marks accordingly.

INTERVIEWS

It is intended that interviews for this post will take place in AFBI Newforge, Belfast during week commencing 25th September 2017.

INTERVIEW GUIDANCE FOR APPLICANTS

If this is your first experience of a competence-based interview, bear in mind that it does not require you to:

- Talk through previous jobs or appointments from start to finish;
- Provide generalised information as to your background and experience; or
- Provide information that is not specifically relevant to the competence the question is designed to test.

A competence-based interview does however require you to:

- Focus exclusively, in your responses, on your ability to fulfill the competences required for effective performance in the role; and
- Provide specific examples of your experience in relation to the required competence areas.

In preparation for the interview you may wish to think about having a clear structure for each of your examples, such as:

- Situation – briefly outline the situation;
- Task – what was your objective, what were you trying to achieve;
- Action – what did you actually do, what was your unique contribution;
- Result – what happened, what was the outcome, what did you learn.

The panel will ask you to provide specific examples from your past experience in relation to each of the competences. You should therefore come to the interview prepared to discuss in detail a range of examples which best illustrate your skills and abilities in each competence area. You may draw examples from any area of your work / life experiences.

SELECTION PROCESS

The Merit Principle

Appointments to AFBI are made under the 'merit principle', where the best person for any given post is selected in fair and open competition.

Making your application

The application form is designed to ensure that applicants provide the necessary information to determine how they meet the competition requirements and the eligibility/shortlisting criteria.

Guidance for Applicants

- The space available on the application form is the same for all applicants and must not be altered.
- We will not accept CVs, letters, additional pages or any other supplementary material in place of or in addition to completed application forms.
- Applicants must complete the application form in either typescript font size 12, or legible, block capitals using black ink.
- Applicants must not reformat application forms.
- Information in support of your application will not be accepted after the closing date for receipt of applications.
- HRConnect will not examine applications until after the closing deadline;
- Do not use acronyms, complex technical detail etc. Write for the reader who may not know your employer, your branch or your job.
- Write down clearly your personal involvement in any experience you quote. Write "I" statements e.g. I planned meetings, I managed a budget, I prepared a presentation. It is how you actually carried out a piece of work that the panel will be interested in.
- The examples you provide should be concise and relevant to the criteria. This is very important as the examples which you provide may be checked out at interview and you may need to be prepared to talk about these in detail if you are invited to interview. It is your *unique* role the panel are interested in, not that of your team or division.

Application Form Submission

- Please refer to the Candidate Information Booklet before completing an application.
- **All** parts of the application form **must** be completed by the applicant before this application can be considered. Failure to do so may result in disqualification.
- All applications must be received by the advertised closing date. Late applications or applications received by fax or by email will not be accepted. Applicants using Royal Mail should note that 1st class mail does not guarantee next day delivery. It is also the responsibility of the applicant to ensure that sufficient postage has been paid to return the form to

HRConnect. HRConnect will not accept any application where they are asked to pay any shortfall in postage.

- Only the employment history, eligibility and shortlisting sections will be made available to the panel.
- Applicants are encouraged to submit online applications wherever possible. However, all requests for hard copy application packs are welcomed and all applications will be treated equally regardless of whether they are hard copy or online.
- When completing the online application, your information is saved as you move through the pages. You may leave the application at any time, providing you have clicked on the 'Save & Continue' button. Once your application has been submitted the option to edit will no longer be available.
- Please note - the session timeout for the online application is 40 minutes, if you do not save or change page within this time you will automatically be logged out and any unsaved work will be lost.
- Please do not attempt to reformat application forms as this will result in disqualification.

Changes in personal circumstances

Please ensure HRConnect are informed immediately of any changes in personal circumstances.

Communication between HRConnect and you

HRConnect will issue electronically as many competition communications as possible, you should therefore check your email account to make sure that you don't miss any important communications in relation to this competition. There may, however, still be a necessity to issue some correspondence by hard copy mail.

Transgender Requirements

Should you currently be going through a phase of transition in respect of gender and wish this to be taken into consideration in confidence to enable you to attend any part of the assessment process please contact HRConnect. Details of this will only be used for this purpose and do not form any part of the selection process.

Further appointments from this competition

Where a further position in AFBI is identified which is considered broadly similar to that outlined in this candidate information booklet, consideration will be given to filling the position from this competition. The merit list resulting from this competition will be valid for a period of up to one year.

Disability Requirements

We will ask on the application form if you require any reasonable adjustments, due to disability, to enable you to attend any part of the assessment process.

Details of any disability are only used for this purpose and do not form any part of the selection process. If you have indicated on your application that you have a disability and are successful in the selection process and are being considered for appointment, you may be required to outline any adjustments you consider necessary in order for you to take up an appointment. If you wish to discuss your disability requirements further, please contact HRConnect.

Equal Opportunity Monitoring Form

Please note, this form is regarded as part of your application and failure to complete and return it will result in disqualification.

For guidance on completing the Monitoring Form and to read the NICS Equal Opportunities Policy Statement to which AFBI adheres please refer to page 32.

Applications are particularly welcomed from Roman Catholics and Females as these groups are currently under-represented within AFBI.

AFBI is an Equal Opportunities Employer.

All applications for employment are considered strictly on the basis of merit.

Assessment Information

It is HRConnect policy that all candidates invited to attend for assessment bring sufficient documentation to satisfy the eligibility/shortlisting criteria and the Nationality and Vetting requirements. Further details regarding acceptable documentation will be issued with an invitation to attend for assessment.

You should ensure that these documents are readily available.

Employment Requirements

HRConnect must ensure that you are legally entitled to work in the United Kingdom.

Entry to the United Kingdom is controlled under the Immigration Act 1971. Everyone who does not have the right of abode is subject to immigration control. You should check whether there are any restrictions on your stay or your freedom to take or change employment before you apply for a post. If you are invited to interview we will ask you to provide documentation confirming that you are entitled to work in the UK, under the terms of the Asylum and Immigration Act 1996.

Advice on entitlement to work may be obtained from the Home Office website, www.ind.homeoffice.gov.uk.

Nationality Requirements

There are no nationality requirements for AFBI posts.

Vetting Procedures

1. Baseline Personnel Security Standard

For this post the level of vetting is a Baseline Standard. For this check you will be required to provide the following:

- a) Your passport OR
- b) A document verifying your permanent National Insurance number (e.g. P45, P60 or National Insurance card) AND your birth certificate which includes the names of your parents (long version).
- c) Other acceptable documents are listed on www.ind.homeoffice.gov.uk.
- d) A specimen signature at any assessment event and have this validated against passport, driving licence, application form etc.

We will organise a Criminal Record Check on all applicants to be carried out by AccessNI. The category of AccessNI check required for this post is:

Basic Disclosure Certificate

You should not put off applying for a post because you have a conviction. We deal with all criminal record information in a confidential manner, and information relating to convictions is destroyed after a decision is made.

For more information, the address of the AccessNI website is: <http://www.accessni.gov.uk/>. Those applicants who are being considered for appointment will be contacted by HRConnect, normally after interview/test, and will be asked to complete the AccessNI application form. Please note that a request to complete this form should not be seen as a guarantee of an offer of appointment. Failure to complete the application form and return it within the specified time will be regarded as 'no longer interested in the position' and your application will be withdrawn.

Criminal Record information is subject to the provisions of the Rehabilitation of Offenders (NI) Order 1978.

Order of Merit

The selection panel will assess candidates against the interview criteria. Those candidates who meet the required standard(s) and pass mark will be deemed suitable for appointment. The selection panel will then list those suitable for appointment in order of merit with the highest scoring applicant ranked first. HRConnect will allocate a candidate (or candidates) to a vacancy (or vacancies) in the order listed. The order of merit is valid for one year.

GENERAL INFORMATION

Pensions

New entrants who join the Agri-Food and Biosciences Institute (AFBI) are eligible to join the NICS pension scheme.

Further details can be found on the Principal Civil Service Pensions Scheme (Northern Ireland) website at:

www.finance-ni.gov.uk/civilservicepensions-ni

or

if you are unable to access the website please contact Civil Service Pensions as follows:

Civil Service Pensions
Waterside House
75 Duke Street
Londonderry
BT47 6FP
Tel: 02871 319000
Email: cspensions.cpg@dfpni.gov.uk

Feedback

AFBI is committed to ensuring that the processes used to recruit and select staff are fair. We are consequently committed to providing feedback in respect of decisions taken in determining eligibility/shortlisting as well as at interview. Feedback in respect of eligibility/shortlisting will be communicated automatically to those candidates who fail to satisfy any criteria. All requests for feedback are welcome.

THIS INFORMATION PACK DOES NOT FORM PART OF
CONDITIONS OF EMPLOYMENT

Please apply online or post your hardcopy completed application form to the HRConnect Recruitment Team:

HRConnect
PO Box 1089
2nd Floor
The Metro Building
6-9 Donegall Square South
Belfast
BT1 9EW

NOTE: Late applications or applications received by fax or email will not be accepted.

Contact details:

If you have any queries regarding the competition process please contact HRConnect at the address above or by;

Email: Recruitment@HRConnect.nigov.net
Tel: 0800 1 300 330
Fax: 028 9024 1665

Equality, Diversity and Inclusion

Policy Statement

The Northern Ireland Civil Service Equality, Diversity and Inclusion Policy statement to which AFBI adheres is set out below:

“The Northern Ireland Civil Service (NICS) has a strong and clear commitment to equality, diversity and inclusion. It is our policy that all eligible persons shall have equal opportunity for employment and advancement in the NICS on the basis of their ability, qualifications and aptitude for the work. Everyone has a right to equality of opportunity and to a good and harmonious working environment and atmosphere where they are treated with dignity and respect. We aim to provide opportunities for all sections of the community and continue to strive to create an inclusive working environment in which difference is recognised and valued. Bringing together people from diverse backgrounds and giving each person the opportunity to contribute their skills and experience will help us to respond more effectively to the needs of the people we serve”.

We all want to work in an harmonious workplace where we feel valued, respected and included, irrespective of gender, including gender reassignment, marital or civil partnership status, race/ethnic origin, religious belief or political opinion, disability, having or not having dependants, sexual orientation and age.

In order to provide a high quality service to the people of Northern Ireland the NICS needs to attract, recruit, develop and retain the very best people at all levels. Our approach is based on three key principles:-

Equality – we promote equality of opportunity by seeking to remove barriers, eliminating discrimination and ensuring equal opportunity and access for all groups of people.

Diversity – we accept each person as an individual. Our success is built on our ability to embrace diversity – and we believe that everyone should feel valued for their contributions. By working together we will deliver the best possible service for our staff, customers and stakeholders.

Inclusion – we create a working culture where differences are not merely accepted, but valued; where everyone has the opportunity to develop in a way that is consistent with, and adheres to NICS values of impartiality, honesty, integrity and objectivity. Our aim is to be an organisation where people feel involved, respected and connected to our success.

It is the responsibility of all staff to be aware of and to apply this policy. Both Management and Trade Union Side are fully committed to the policy and will endeavour to ensure its full implementation.

Equal Opportunities Monitoring

Equality monitoring is the process of collecting, storing and analysing information that is relevant to and necessary for the purpose of promoting equality of opportunity between different categories of persons. This section sets out what information is collected, the reasons for doing so and what it is used for.

You should note that the Monitoring Form is regarded as part of your application and failure to fully complete and return it will result in disqualification. The Monitoring Form will be processed separately and neither the form nor the details contained in it will be available to those considering your application.

Monitoring equality and diversity in the workforce enables the NICS to examine how our employment policies and processes are working and to identify areas where these appear to be impacting disproportionately on certain groups of staff.

Legislative Context

This section explains the reasons for gathering this information by setting out the legislative background.

Gender

The Sex Discrimination (NI) Order 1976 (as amended) makes it unlawful to discriminate against an individual on the grounds of his or her sex. Information on gender is also provided in the annual statutory monitoring the, as required by the Fair Employment and Treatment (NI) Order 1998. Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between men and women generally.

Age

The Employment Equality (Age) Regulations (NI) 2006 make it unlawful for employers and others to discriminate on grounds of age. Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons of different ages and age groups.

Community Background

The Fair Employment and Treatment (NI) Order 1998 outlaws discrimination on the basis of religious belief or political opinion. The Order also requires the NICS to submit an annual monitoring return to the Equality Commission for Northern Ireland. This takes the form of a statistical return, providing information on the gender and community background composition of all people working in the NICS at the 1st January each year.

Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons of different religious belief and political opinion. Following guidance issued in July 2007 by the Equality

Commission for NI the NICS has decided to use “community background” information as a proxy for political opinion.

Disability

The Disability Discrimination Act 1995 (the DDA) provides protection for disabled persons against discrimination on the grounds of disability.

The DDA defines disability as a “physical or mental impairment, which has a substantial and long term adverse effect on a person’s ability to carry out normal day-to-day activities.”

This definition is interpreted as follows:-

Physical Impairment: this includes, for instance, a weakening of part of the body (eyes, ears, limbs, internal organs etc) caused through illness by accident or from birth. Examples would be blindness, deafness, paralysis of a leg or heart disease.

Mental Impairment: this includes mental ill health and what is commonly known as learning disability, and social functioning.

Substantial: put simply, this means the effect of the physical or mental impairment on ability to carryout normal day to day activities is more than minor or trivial. It does not have to be a severe effect.

Long-term adverse effect: the effect has to have lasted or be likely to last overall for at least 12 months and the effect must be a detrimental one. A person with a life expectancy of less than 12 months is of course covered if the effect is likely to last for the whole of that time.

A normal day to day activity: this is something which is carried out by most people on a fairly regular and frequent basis such as washing, eating, catching a bus or turning on a television. It does not mean something so individual as playing a musical instrument to a professional standard or doing everything involved in a particular job.

What sort of effect must there be?

The person must be affected in at least one of the respects listed in the DDA: mobility; manual dexterity; physical co-ordination; continence; ability to lift, carry or otherwise move everyday objects; speech; hearing or eyesight; memory or ability to concentrate, learn or understand; ability to take part in normal social interaction and form social relationships; or perception of risk of physical danger.

What happens if the effects are reduced by medication or other treatment?

Broadly speaking, the effects that matter are those that would be present if there was no medication or treatment taking place. The exception is people who wear spectacles or contact lenses when what matters is the effect that remain while the spectacles or contact lenses are being used.

Are there any types of condition covered by special provisions in the DDA?

Yes, because some people with particular conditions might not otherwise be counted as disabled. These are provisions covering:

Recurring or fluctuating conditions such as arthritis, where the effects can sometimes be less than substantial, which are treated as continuing to have a substantial adverse effect so long as that effect is likely to recur;

Conditions which progressively deteriorate, such as motor neuron disease, which count as having a substantial effect from the first time they have any effect at all on ability to carry out normal day to day activities even if it is not substantial, so long as there is eventually likely to be a substantial adverse effect; and

People with cancer, HIV, or multiple sclerosis are deemed to be disabled people from the point of diagnosis, regardless of whether or not they have any symptoms.

Are any conditions not covered?

Yes, the following conditions specifically do not count as impairments:

Addiction to or dependency on alcohol, nicotine or any other substance (unless resulting from the substance being medically prescribed);

Seasonal allergic rhinitis (e.g. hay fever) unless it aggravates the effect of another condition;

Tendency to set fires, or steal, or physically or sexually abuse other persons;

Exhibitionism and voyeurism;

Severe disfigurements consisting of tattoos, non-medical body piercing or attachments to such piercing are not treated as having substantial adverse effects.

What if someone has recovered from a disability?

Much of the DDA also applies to people who have had a disability in the past (for example, someone who was disabled by mental ill health) but have now fully recovered. People who were registered disabled under the Disabled Persons (Employment) Act (NI) 1945 both on 12 January 1995 and 2 December 1996 will be regarded as having had a disability in the past if they do not in any case fall within the definition of the DDA.

Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons with a disability and persons without.

Race

The Race Relations (NI) Order 1997 makes it unlawful to discriminate on grounds of colour, race, nationality or ethnic or national origin. Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons of different racial group(s).

Sexual Orientation

The Employment Equality (Sexual Orientation) Regulations (NI) Order 2003 makes it unlawful for employers and others to discriminate on the grounds of sexual orientation. In order to monitor the effectiveness of NICS policies

information is gathered on sexual orientation. Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons of different sexual orientation.

Marital Status

The Sex Discrimination (NI) Order 1976 (as amended), makes it unlawful to discriminate against married persons and civil partners in employment. Section 75 of the Northern Ireland Act 1998 requires public authorities in carrying out their functions in NI to have due regard to the need to promote equality of opportunity between persons of different marital status.

Dependants Status

Section 75 of the Northern Ireland Act 1998 requires public authorities, in carrying out their functions in NI, to have due regard to the need to promote equality of opportunity between persons with dependants and persons without.

Confidentiality of Monitoring Information

The following general principles will be applied to all individual monitoring information:-

- individual monitoring information will be afforded a high degree of confidentiality;
- misuse of monitoring information will be viewed as a disciplinary offence; and
- individual monitoring information will only be disclosed to members of staff or officials of a trade union, members of which are employed in the NICS, if it is necessary to do so for the appropriate discharge of their duties and responsibilities.

In addition to the above internal safeguards on the protection of equality monitoring information generally, the confidentiality of community background monitoring information is protected through Regulations made under the Fair Employment and Treatment (Northern Ireland) Order 1998 (FETO). These make it a criminal offence, subject to specific exceptions, for an employer or employee to disclose information on the community background of an individual which has been obtained, or is used, for the purpose of monitoring under FETO.

As with other forms of personal data, the obtaining, use, storage and disclosure of monitoring information is covered by the Data Protection Act 1998 (DPA). Monitoring information is held on computer and is protected by a high level of security. Access to this data is restricted to those NICS staff, employees of HRConnect and Trade Union officials whose duties make it necessary for them to have it. Misuse of monitoring information is viewed as a disciplinary offence.