



Job title	Bioinformatician	Job family and level	Research and Teaching Level 4A/4CTG/4
School/ Department	School of Life Sciences/DeepSeq	Location	DeepSeq Lab, D106, Medical School

Purpose of role

The purpose of this role will be to analyse Next Generation Sequencing data sets which have been primarily produced within the DeepSeq facility as well as manage data storage, pipelines and servers within the facility. The role holder is expected to plan and conduct their own work in conjunction with facility users. The role holder will use open source available software and tools but may also need to modify methodologies and scripts and create new pipelines and tools as required to enable accurate and timely data analysis.

The role holder will provide appropriate support and advice to facility users to allow them to make full use of their data, therefore the person appointed should be able to communicate effectively on both a biological and bioinformatics level. The successful applicant will be responsible for writing up their work and providing clear documentation for new pipelines for the production of end user summaries or for their own publications.

The facility currently houses Illumina MiSeq and NextSeq platforms and routinely runs Oxford Nanopore Technologies MinION, GridION and PromethION platforms. In addition, we produce 10x Genomics Chromium Single Cell datasets and regularly runs the Bionano Saphyr for optical mapping. The post holder should have broad knowledge of these technologies and tools used for their analysis.

The person appointed will have the opportunity to develop their bioinformatics skills in a highly diverse and rapidly evolving setting as well as the ability to use extensive pipeline and coding skills to develop research tools and extend their bioinformatics portfolio.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	To analyse and illuminate data from in-house Next Generation sequencing machines, presenting the results in various formats according to the requirements of the end user and within a specified timeframe. The role holder will be able to lead on these analyses, using available software, or by creating novel pipelines and tools to enable efficient use of facility time and to produce accurate and comprehensive results. Data analysis can be performed on servers within DeepSeq and the University's HPC as well as potentially other servers we are provided access to.	40%
2	To perform and advise on the management and transfer of data used within the facility and to ensure end users are provided with access to their datasets. This will include helping to maintain the server storage devices held within the facility. In addition, automation of data transfer is a key goal.	20%
3	To provide appropriate support and advice to facility end users to allow them to make full use of their data, communicating on both a biological and	10%

	informatics level. This can include illuminating data, interpreting reports, evaluating and criticising texts and to bring new insights to the research area, sharing knowledge with colleagues and clients as appropriate.	
4	To contribute to writing up research findings for publication for clients and own publications, including generation of text and figures. To present at national and international meetings as appropriate. To provide clear and accessible documentation for new pipelines and methods for clients and colleagues.	5%
5	To provide guidance as required to support staff and students, where appropriate in own area of expertise.	5%
6	To co-ordinate the operational aspect of research networks, for example, arranging meetings and updating websites etc and contribute to collaborative decision making with colleagues in area of research.	5%
7	To work closely with facility staff to ensure the optimal experimental design and outcomes are obtained for facility customers. To provide guidance or advice on strategies and methods for client projects/quotes.	5%
8	Any other duties appropriate to the grade and role	10%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> ▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex information. ▪ Ability to contribute to method improvement. ▪ Analytical ability to facilitate conceptual thinking, innovation and creativity. ▪ Ability to build relationships and collaborate with others, internally and externally. ▪ Excellent IT skills. ▪ Excellent oral and written communication skills, including the ability to communicate with clarity on complex information. ▪ Ability to analyse and illuminate data, interprets reports, evaluate and criticise texts and bring new insights to current methodologies. ▪ Ability to creatively apply relevant research approaches, models, techniques and methods. ▪ Good organisational skills. ▪ Ability to work as a productive and integrated member of a team. 	<ul style="list-style-type: none"> ▪ Ability to assess and organise resource requirements and deploy effectively. ▪ Ability to foster a research culture and commitment to learn in others. ▪ High analytical ability to analyse and illuminate data, interprets reports, evaluate and criticise texts and bring new insights.
Knowledge and experience	<ul style="list-style-type: none"> ▪ Excellent knowledge of at least one scripting or coding language (e.g., Perl, Python, C++, Java). ▪ Knowledge of Linux operating systems. ▪ Excellent knowledge of NGS methodologies, tools and software. ▪ Evidence of working with data from different NGS platforms. ▪ Experience with sequence search matching and alignment algorithms. ▪ Experience with database production of large datasets. ▪ Experience of genome annotation pipelines, strong knowledge of ensembl, gbrowse etc. ▪ Experience of using NGS datasets, including publicly available datasets. ▪ Experience of working to strict deadlines and finishing projects as directed. 	<ul style="list-style-type: none"> ▪ Experience of developing new approaches, tools, models, techniques or methods in research area. ▪ Excellent knowledge of multiple scripting or coding languages. ▪ Knowledge of Linux System Admin. ▪ An excellent understanding of molecular biology. ▪ An excellent understanding of mathematics including statistics and algorithms and their role in relevant NGS analysis tools. ▪ Excellent understanding of version control and software repositories. ▪ Experience of workflow management systems such as NextFlow, Snakemake or similar. ▪ Experience with use of HPC.

<p>Qualifications, certification and training (relevant to role)</p>	<ul style="list-style-type: none"> ▪ PhD (or close to completion) in a bioinformatics or relevant computational related field. ▪ OR an equivalent professional qualification in a bioinformatics/ computational field. ▪ Or an MSc and high levels of experience of varied Next Generation Sequencing data analysis. 	<ul style="list-style-type: none"> ▪ PhD in Bioinformatics or a relevant computational discipline with subsequent work experience of varied Next Generation Sequencing data analysis.
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The University of Nottingham is focused on embedding equality, diversity and inclusion in all that we do. As part of this, we welcome a diverse population to join our work force and therefore encourage applicants from all communities, particularly those with protected characteristics under the Equality Act 2010.



The University is a signatory of the Declaration on Research Assessment (DORA). As such we commit to focus on the scientific content of publications (where requested or provided as part of the recruitment and selection process) as a basis for review of quality, and consideration of value and impact of research conducted, rather than any proxy measures such as Journal Impact Factor.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
- Taking ownership** Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
- Forward thinking** Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
- Professional pride** Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
- Always inclusive** Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.



