

Bioinformatician

Centre for genome Enabled Biology and Medicine

School of Medicine, Medical Sciences and Nutrition

Closing date: 01 July 2021
Interview date: Potentially 12 July 2021
Reference number: IMS211A

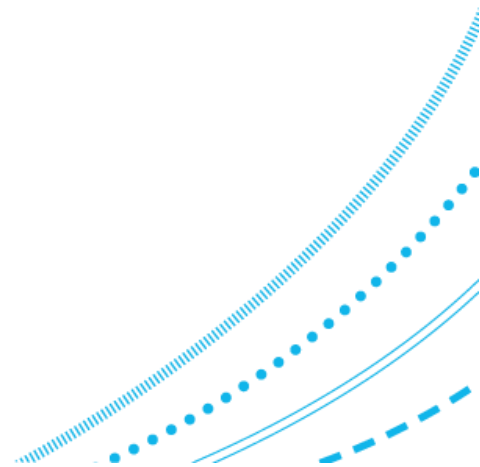


Introduction

The Centre for Genome Enabled Biology and Medicine

The University of Aberdeen established the Centre for Genome Enabled Biology and Medicine (CGEBM) in 2013 to provide a focus for genomics activity across the University. CGEBM provides strategic direction and coordinated management of the University's genomics facilities and facilitates genomics enabled interdisciplinary research by provision of specialised expertise, infrastructure, training, a focal point for collaboration and information exchange and genomics services to the research community.

CGEBM provides next generation sequencing (NGS) capacity and bioinformatics as a platform for applied translational, clinical, biomedical, biological and bioengineering research. CGEBM is the primary service provider of NGS services at the University of Aberdeen in support of its research, teaching and learning, and business objectives. CGEBM helps to drive genome focused research forward by developing and exploiting modern genomic technologies to accelerate discovery of novel approaches to improve human health, the environment and agriculture.



Job description

MAIN PURPOSE OF THE ROLE:

The Centre for Genome Enabled Biology and Medicine (<http://www.abdn.ac.uk/genomics/>) is seeking to recruit a full-time Bioinformatician to work within our team of bioinformaticians and laboratory genomics specialists.

The CGEBM provides genomics services, including sequencing and bioinformatics, to the University of Aberdeen and external institutes. The post holder will analyse genomics data from a wide range of organisms, including model and non-model plants, animals and microbes. The post holder will support bioinformatics analysis in CGEBM using both our established tools and pipelines as well as exploring new tools, workflows, and approaches to analyse novel datasets. Datasets routinely analysed in CGEBM include whole genome sequencing for de novo assembly and annotation, or alignment and variant calling; RNA-seq for de novo transcriptome assembly and annotation or differential expression analysis; targeted resequencing; microbiome analysis (16S, ITS and other functional gene profiling); methylation profiling; ChIP-seq for analysis of the regulome; and single cell RNA-seq and ATAC-seq. These are primarily Illumina datasets. Oxford Nanopore long read sequencing and 10x Genomics Chromium single cell genomics are also carried out in CGEBM. Written reporting and interaction with biologists to report and explain data and plan design and further analyses, is an integral component of the post. The post holder is expected to keep abreast of developments in this rapidly evolving field through review of the literature, interaction and networking with colleagues and attendance at relevant conferences and training events.

The post holder will be expected to work with the wider bioinformatics team to support all CGEBM activities, including teaching and training courses in bioinformatics as well as public engagement and other networking events. Strong oral and written communication and project and time management skills are essential to the post.

AT A GLANCE

SALARY:

Grade 7

£41,526- £49,522 per annum

HOURS OF WORK:

37.5 Hours per week

CONTRACT TYPE:

Substantive

LOCATION:

Aberdeen



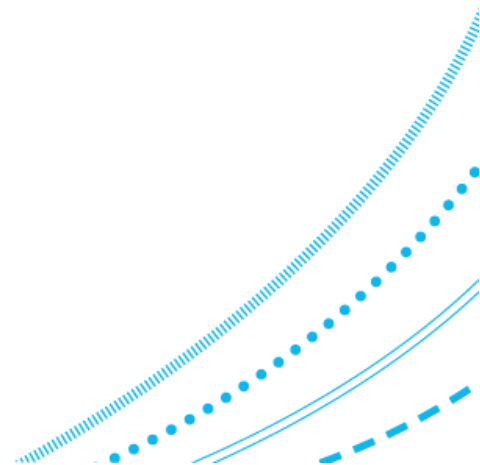
1495
**UNIVERSITY OF
ABERDEEN**

CELEBRATING
525 YEARS
1495 – 2020

KEY RESPONSIBILITIES:

Bioinformatician Grade 7

- The post holder will assist in providing high quality bioinformatics analyses to our internal and external collaborators and clients as part of the CGEBM team.
- Perform high-quality data analysis, primarily on a range of next generation sequencing data types sequenced in CGEBM, or from external genomics centres, in collaboration with bioinformaticians and other researchers in Aberdeen and elsewhere. This includes performing analyses with third party software as well as using custom scripts to deliver bespoke analytical solutions and use of the University's high-performance compute cluster (Centos OS and Slurm scheduler).
- Work with other CGEBM bioinformaticians and laboratory staff to plan, develop and implement analytical pipelines to improve and streamline data generation and data analysis tasks
- Enable potential collaborators to access or expand their genomics research, including understanding their project requirements, identification and selection of appropriate methods and assistance in writing the bioinformatic elements of research grant applications to UK Research Councils and other funding bodies.
- Keep comprehensive and up to date records of tasks performed, including thoroughly documenting analyses for each project and reporting progress regularly to the CGEBM Manager. In addition, contributing to the preparation of co-authored manuscripts and other reports based on work performed and contribute to the manuscript review process. Written and oral project reporting to and interaction with the lead investigator and research group is an integral part of the analytical workflow to facilitate progress reporting, data interpretation, planning of further analyses and generation of publication quality outputs.
- Effectively and efficiently manage assigned projects and data.
- Contribute to teaching in bioinformatics at the University.
- Provide training to collaborating bioinformaticians and other researchers as part of CGEBM training workshops and other initiatives.
- Maintain and enhance CGEBM activities through delivery of high-quality analytical solutions, reports and publications, effective and positive interaction and networking with colleagues to further expand collaborative



inter-disciplinary initiatives and explore opportunities and contribute to funding applications to expand capabilities and capacity in CGEBM.

- Keep up to date with advances in the field of genome informatics by researching the published literature, attendance at conferences and meetings, and networking with the CGEBM team and wider University genomics community and disseminating this information to stakeholders and collaborators.
- Be actively involved in CGEBM meetings, events and public engagement activities.

Candidate background

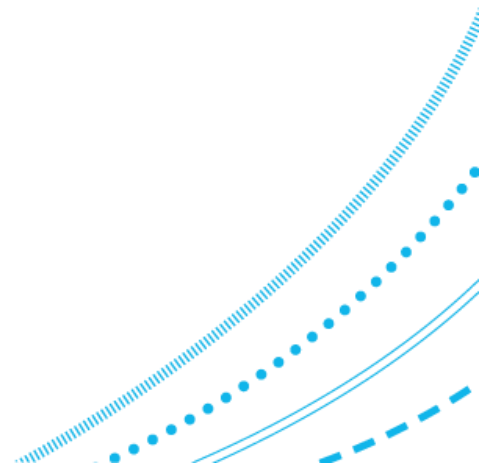
CGEBM are seeking to appoint a bioinformatician (Grade 7) to join their team

The candidate must have a minimum MSc degree or equivalent qualification in bioinformatics or a related field, with a sound knowledge of genetics, genomics and biological research. The candidate must have advanced programming skills in at least one language such as Python, Perl, C, C++, or Java and experience with R would be an advantage. The candidate must have UNIX/ LINUX and shell scripting experience. The candidate must have experience of next generation sequencing datasets and common bioinformatics tools, preferably using a HPCC, for applications such as whole genome or transcriptome assembly and annotation, alignment and variant calling, and differential gene expression using RNAseq data. Broader experience of other applications such as analysis of the methylome, regulome, pangenome, CNVs, single cell genomes or more complex statistical models for genomic analyses would be an advantage.

The candidate must have experience of written research outputs, preferably as peer-reviewed publications. The candidate must have previous experience of biological research and sufficient expert knowledge to understand a broad range of biological research questions. The candidate should have suitable experience to demonstrate ability to critically appraise the literature to keep abreast of rapid developments in the field and translate this knowledge to enhance workflows and approaches.

Previous experience of a service delivery environment, teaching or training in bioinformatics, or public engagement activities would be beneficial.

CGEBM operate comprehensive and rigorous project and data management and Quality Control (QC)/ Quality Assurance (QA) procedures and these must be closely adhered to. A broad range of diverse research projects are simultaneously supported by CGEBM. The candidate must be self-motivated and innovative, have excellent interpersonal, written, and oral communication skills as well as strong problem solving, organisational and time management skills, to ensure they are able to deliver work efficiently and to a high standard. The candidate must be able to



interact well with researchers from diverse disciplines, clearly explain complex concepts and data and work effectively as part of the wider CGEBM team. There is a requirement to work from multiple locations as we operate services on both the Foresterhill and Old Aberdeen campuses of the University.

Terms of Appointment

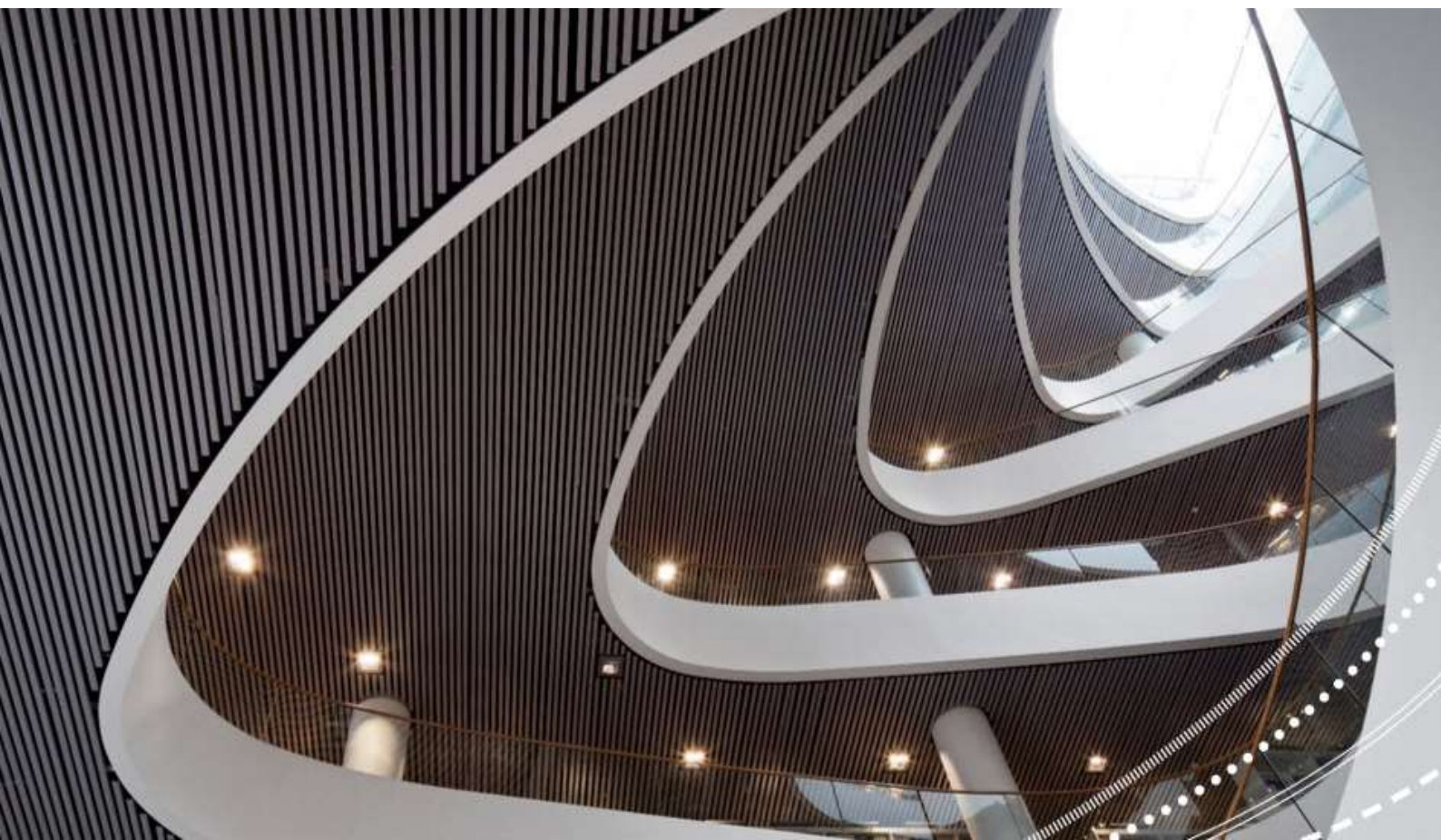
Salary will be at the appropriate point on the Grade 7, £41,526- £52,559 per annum and negotiable with placement according to qualifications and experience.

Any appointment will be made subject to satisfactory references and probation period

For further information on various staff benefits and policies please visit www.abdn.ac.uk/staffnet/working-here

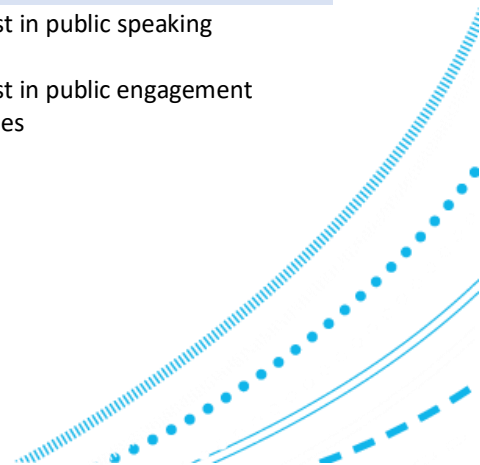
This role is based in the UK and as such the successful candidate will be required to live and work in the UK.

Should you require a visa to undertake employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship under the requirements of the Skilled Worker visa. At the time an offer of appointment is made, you will be asked to demonstrate that you fulfil the criteria in respect of qualification and competency in English. For research and academic posts, we will consider eligibility under the Global Talent visa. Please do not hesitate to contact Natalie Reid, HR Adviser (e-mail: n.reid@abdn.ac.uk) for further information.

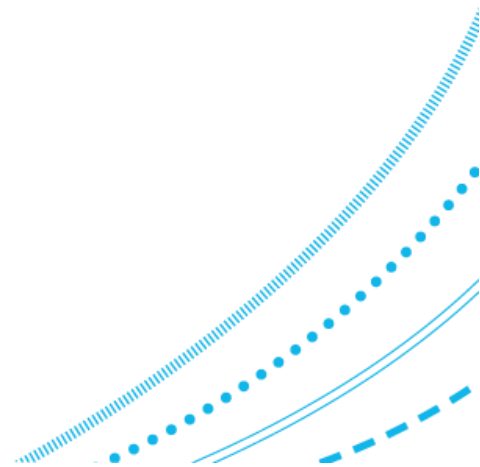


Person specification

	ESSENTIAL	DESIRABLE
Education/Qualifications Academic, technical and professional education and training	<ul style="list-style-type: none"> • MSc qualification in bioinformatics or equivalent qualification(s) plus experience in bioinformatics • Degree in biology, computing science or equivalent 	<ul style="list-style-type: none"> • Higher degree, ideally in bioinformatics or equivalent
Work and Other relevant experience (including training) e.g. Specialist knowledge, levels of experience, supervisory experience, research	<ul style="list-style-type: none"> • Advanced programming skills related to data management and analysis in a language such as Python, Perl, C, C++ or Java. • UNIX/ LINUX experience and familiarity with shell scripting. • Experience of genomic data analysis and use of statistical methods with a focus on next generation sequencing data for such analyses. • Experience of using common bioinformatics tools such as BLAST, Samtools, DESeq2, assemblers e.g. Velvet or Spades, alignment tools such as BWA, variant calling (e.g. GATK or freebayes), annotation, DADA2. • Experience of working in a research or service environment, including experience of biological research. • Experience of writing manuscripts with peer-reviewed published outputs. 	<ul style="list-style-type: none"> • Experience of working with a high-performance compute cluster and experience with R. • Experience of complex statistical models and integration of other genome-scale datasets such as proteomics. • Experience of bioinformatics tools/ approaches for analysis of CNVs, pangenomes, methylome, regulome or single cell genomics, metagenomes. • Experience of analysing other high-density datasets e.g. proteomics. • Experience of teaching or training in bioinformatics. • Experience of contributing to, and preferably writing successful grant applications.
Personal qualities and abilities e.g. initiative, leadership, ability to work on own or with others, communication skills		
Other e.g. special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.	<ul style="list-style-type: none"> • Ability to understand a broad range of biological research questions and genomics applications to appropriately meet the needs of investigators and research groups and to stay abreast of rapidly evolving technologies and analytical tools/ pipelines. 	<ul style="list-style-type: none"> • Interest in public speaking • Interest in public engagement activities



- Ability to critically appraise the literature and translate knowledge of advances in the subject area into research activity and enhancement of CGEBM activities.
- Ability to clearly explain complex bioinformatics analyses and concepts to generalist and specialist researchers and stakeholders.
- Demonstrate ability to present outputs of work in written form evidenced through publications.
- Excellent interpersonal and communication skills.
- Efficient time and project management skills, and ability to meet demanding work schedules and deadlines.
- Self-motivated and innovative with demonstrable problem-solving ability and high level of attention to detail. Ability to work independently but also to contribute effectively to the wider team.
- Willingness to work collaboratively as part of a team.



University of Aberdeen

open to all and dedicated to the pursuit of truth in the service of others

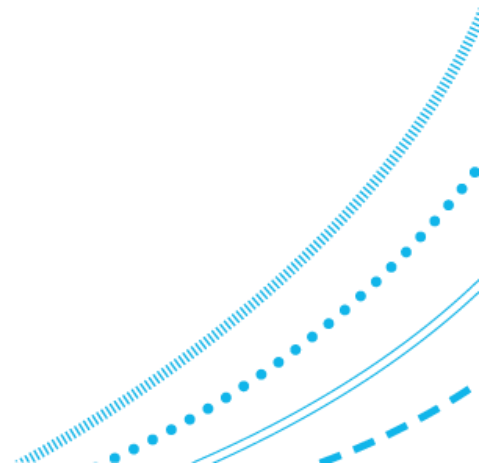
The University of Aberdeen is a broad based, research intensive University, and we put students at the centre of everything we do. Outstanding in a wide range of discipline areas, Aberdeen is credited for its international reach and commercialisation of research ideas into spin out companies. The University has over 16,000 matriculated students and 3,600 staff representing 130 nationalities. We encourage bold thinking, creativity and innovation, and we nurture ambition with many opportunities for professional and personal development in an inclusive learning environment which challenges and inspires.



CURRENT CONTEXT

The University continues to build on the achievements above. Underpinning our high performance and significant growth is a £100m investment in Aberdeen's estate which will include the completion of a new Science Teaching Hub, the regeneration of the historic King's Quarter and a new Business School building. The University has also invested in 50 new academic posts and in 2020 launched five interdisciplinary, cross-institution Research Centres that will catalyse world-leading research in our areas of strength. Our five Interdisciplinary Challenges are: Energy Transition; Social Inclusion and Cultural Diversity; Environment and Biodiversity; Data and Artificial Intelligence; and Health, Nutrition and Wellbeing.

In 2017 we received the Queen's Anniversary Prize, awarded to recognise the world-class excellence in innovation and practical benefit to people and society. The University was given this award for health service research leading to improvements in academic and clinical practice and delivery of health care.





INTERNATIONAL

Aberdeen is increasing its international presence, positioning the University as a global organisation and building on established global partnerships in e.g. Qatar, China, North America, Europe. We feature in the top 50 institutions worldwide for international over 600 students. Phase 2 will see the creation of a substantially larger campus, with capacity for at least 5,000 students and research activity. For further information on our Qatar campus visit www.abdn.ac.uk/qatar. students¹ and have been named 32nd in the world for International Outlook². The University of Aberdeen is proud to be the first UK University to operate on a dedicated campus in Qatar. Phase 1 of this partnership with AFG College has successfully recruited.

¹ Times Higher Education World University Rankings 2021

² QS World University Rankings 2021



Aberdeen 2040

On our 525th anniversary as a University we launched **Aberdeen 2040**, our strategic vision for the next 20 years. Four strategic themes will shape our learning and discovery, underlined by 20 commitments we have made against each theme:

Inclusive

We welcome students, staff and partners from all backgrounds, organisations and communities. We value diversity.

Interdisciplinary

We innovate in education and research by generating, sharing and applying new kinds of knowledge. We learn together.

International

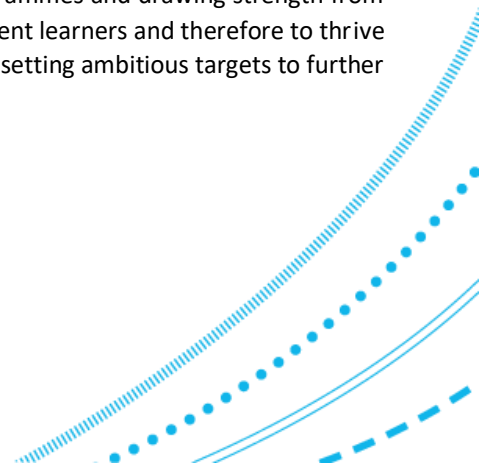
We connect with others and extend our networks and partnerships around the world. We think across borders.

Sustainable

We understand and nurture our environment, and take care of our resources, including our people and our finance. We work responsibly.

OUR EDUCATION

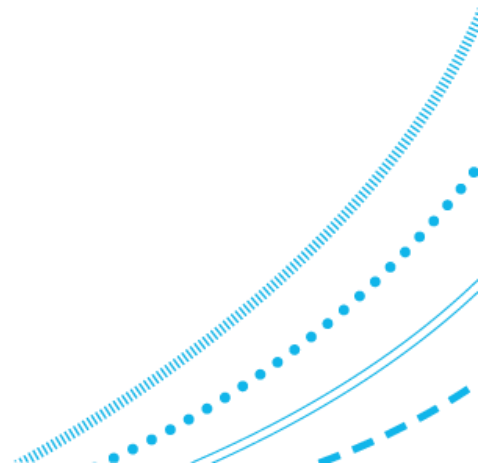
Recognised as the Scottish University of the Year in the Times and Sunday Times Good University Guide 2019, we remain true to our roots as an ancient Scottish university, combining breadth and depth in our degree programmes and drawing strength from the quality of our research. Our flexible curriculum encourages students to grow as independent learners and therefore to thrive as graduates in the diverse workplaces of the future. Our education is open to all and we are setting ambitious targets to further widen access.





OUR RESEARCH

Researchers at the University of Aberdeen have been at the forefront of innovation and excellence throughout the centuries, generating insights in medicine, science, engineering, law, social sciences, arts and humanities. This research has contributed to five Nobel prizes as well as other awards such as the Queen's Anniversary prize. Our research is intellectually rigorous working within our established areas of excellence as well as new methods of enquiry. We will continue to generate new knowledge addressing economic and societal issues with ambition and imagination, ensuring that it is globally excellent and locally relevant



Aberdeen and Aberdeenshire

Scotland's third largest city, Aberdeen sits on the coast between the mountains of Aberdeenshire and the stunning North Sea coastline. The Aberdeen City region, is a can-do place that is actively investing, at scale, in its future.

Renowned as a Global Energy Hub, Aberdeen is a vibrant, entrepreneurial region, home to a unique mix of business opportunities and specialist skills across various sectors including energy, technology, life sciences and food & drink. More than 20% of Scotland's top business are located in this region which is taking great strides to ensure that it continues to compete on a world stage. Investments of more than £10 billion of public and private infrastructure is due to be delivered before 2030, marking an exciting time to be part of a genuine world-class location.

Built from sparkling local granite Aberdeen has earned the name of the Silver City. As the energy capital of Europe, Aberdeen nevertheless retains its old-fashioned charm and character making it an attractive place in which to live, work and study. Due to its global business and international energy industry credentials, Aberdeen is well served by local and national transport infrastructure with excellent rail networks that run both North and South of Scotland and the rest of the UK. It also acts as an international travel hub. Flying time to London is just over one hour with regular daily flights and serves international travel to European centres such as Amsterdam (Schiphol) and Paris (Charles de-Gaulle) as well as flights to other European destinations.

The City and the surrounding countryside provide a variety of urban, seaside and country attractions. Aberdeen has first class amenities including His Majesty's Theatre, Music Hall, Art Gallery, the P&J Arena, Museums, and Beach Leisure Centre. The City is framed by its accessible beach front which is within a short walk of the city centre and there are an array of activities available across the region such as hill walking; mountaineering; sailing; surfing; salmon, trout and sea fishing; golf; sailing; surfing and windsurfing. The surrounding countryside, known as Aberdeenshire, is also one of Scotland's most appealing regions. Royal Deeside and the Cairngorms National Park are within easy access of the city, and there are a variety of towns and villages scattered along the coastline.

The city and the surrounding area have ranked consistently highly in nationally recognised quality of life surveys, coming out top 10 as one of the best places to live in Scotland in 2020 in the annual Bank of Scotland survey.

To find out more visit www.visitabdn.com



Equality and Diversity

The University values a diverse working environment and recognises the benefits this can bring. The University is keen to receive applications from individuals from across all of the equality protected characteristics (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation).

The University supports opportunities for flexible working for a range of reasons and has policies in place to facilitate this. The policies can be found at www.abdn.ac.uk/staffnet/working-here/flexible-working--5607

The University's commitment to gender equality has been recognised through the achievement of an Athena SWAN Bronze award at an institutional level and across all its subject areas. The University is also a Stonewall Diversity Champion to further LGBT+ equality.

The University is signed up to Advance HE's Race Equality Charter, affirming the University's commitment to the charter's aim of improving the representation, progression and success of minority ethnic staff and students within higher education.

Candidates who are British Sign Language (BSL) users can contact us directly by using contact SCOTLAND-BSL.

The University is delighted to be accredited as a Disability Confident employer and strives to ensure that disabled staff and students have the opportunity to work and study in an inclusive, accessible and supportive environment.

www.abdn.ac.uk/staffnet/governance/equality-and-diversity-277

How to Apply

Online application forms are available at www.abdn.ac.uk/jobs

The closing date for receipt of applications is **01 July 2021**

Should you wish to make an informal enquiry please contact:

Dr Elaina Collie-Duguid, Manager of the Centre for Genome Enabled Biology and Medicine

e.collie-duguid@abdn.ac.uk.

Please do not send application forms or CVs to Dr Collie-Duguid.

Please quote reference number IMS211A on all correspondence

