Research Fellow
School of Medicine, Medical Sciences and Nutrition

Closing date: 08 November 2019
Interview date: To Be Confirmed
Reference number: IMS174R
Introduction

We are seeking an enthusiastic, highly motivated post-doctoral scientist with a strong interest in RNA biology for a 3 year position in the group of Dr Berndt Müller and Dr Jonathan Pettitt at the Institute of Medical Sciences of the University of Aberdeen (www.aberdeenwormlab.org). The researcher will work as part of a BBSRC-funded research program that aims to understand the molecular machinery critical for an essential, nematode-specific pre-mRNA maturation step termed spliced leader trans-splicing. This research will inform therapeutic strategies to fight parasitic nematodes that pose significant threats to human and animal health. The project combines state-of-the-art nematode molecular genetics and RNA biochemistry, including genome editing, proteomics and RNA sequencing technologies to (1) determine the molecular composition of RNA-protein complexes critical for spliced leader trans-splicing; and (2) define the roles of newly identified protein factors. We have partnered with Prof Michael Sattler (Technical University of Munich), a leading expert in the structural biology of RNA-protein complexes, for the detailed analysis of molecular interactions and structures. This comprehensive, multifaceted approach will provide crucial insights into nematode gene expression, with clear implications for the development of new treatments for parasitic nematode infections.
Job description

Main purpose of the role:

This research program aims to identify and characterise key factors involved in spliced leader trans-splicing in the nematode Caenorhabditis elegans. The successful candidate will work in collaboration with a Research Technician to achieve these aims.

The programme will employ CRISPR-Cas9 genome engineering to generate transgenic animals that express fluorescently tagged trans-splicing factors for the analysis of protein expression and localisation, and the characterisation of RNA and protein complexes by immunoprecipitation followed by RNA-Seq analysis and proteomics, respectively. The role of identified factors will be determined by analysing the effect of their loss-of-function on spliced leader trans-splicing in vivo. Their detailed molecular functions will be determined using protein-protein and RNA-protein interaction assays, including UV cross-linking “CRAC” technologies, which will also allow us to measure the dynamics of these interactions in vivo. Molecular structures will be solved in collaboration with the group of our project partner Professor Michael Sattler (Technical University of Munich), which has an established, world-leading track record in biomolecular structure determination and with whom the successful candidate will work closely.

Insights from this work will elucidate an important nematode gene expression process, identify new drug targets and inform the development of new therapeutics active against nematode parasites.

At a glance

Salary:
Grade 6 (£33,797 - £36,914 per annum)

Hours of work:
Full-time

Contract type:
Project Limited (36 months)
Key responsibilities:

Research Fellow

- Design and undertake experiments to investigate spliced leader trans-splicing in the nematode Caenorhabditis elegans as directed by the grant holders Dr Berndt Müller and Dr Jonathan Pettitt.

- Work independently and in collaboration with other lab members and the grant holders to meet the objectives of the research program.

- Work with collaborators at Aberdeen and elsewhere to apply new methods to the problem, and train other lab members in these methods.

- Disseminate findings at internal meetings and externally at national and international meetings.

- Write research papers, reviews and reports relating to the research for publication in scientific journals and other relevant media.

- Follow the relevant literature and identify findings that influence the research program.

- Supervise and train junior group members.

- Contribute to student training and supervision.

- Ensure research and record keeping is carried out following good practice, scientific integrity and according to the University's policies.

- Any other duties commensurate with the nature of the post.

Candidate background

Candidates must have a PhD in a relevant biological discipline such as Molecular Biology, Biochemistry or Genetics, with experience of working with Caenorhabditis elegans or another genetically-tractable system, and a strong interest in RNA biology.

Candidates are expected to have extensive experience in molecular biology techniques, RNA analysis and the investigation of RNA-protein and protein-protein interactions. Experience with high-throughput sequencing, proteomics, confocal fluorescence microscopy or genome editing is an advantage.

We are looking for a goal-oriented individual with ability to complete research objectives in a timely manner, and a track record of relevant publications. They need to be able to work independently as well as a part of a team and have good written and verbal communication skills.

Informal enquiries about the project and the position are strongly encouraged and can be directed to Berndt Müller (b.mueller@abdn.ac.uk).
Terms of appointment

Salary will be at the appropriate point on the Grade 6 salary scale (£33,797 - £36,914 per annum).

As this post is externally funded by the BBSRC it will be available for a period of 36 months.

Any appointment will be made subject to satisfactory references and a 12 month probation period.

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

Should you require a visa to undertake paid employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship and Tier 2 visa. As appropriate, at the time an offer of appointment is made you will be asked to demonstrate that you fulfil the criteria in respect of financial maintenance and competency in English. Please do not hesitate to contact Grant Rae, HR Adviser on +44 (0)1224 437068 or email grant.rae@abdn.ac.uk for further information.
# Person specification

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<th>Education/Qualifications</th>
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<th>Desirable</th>
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<tr>
<td>Academic, technical and professional education and training</td>
<td>• PhD in a relevant molecular life sciences discipline such as Molecular Biology, Biochemistry or Genetics.</td>
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<td>Work and Other relevant experience (including training) eg Specialist knowledge, levels of experience, supervisory experience, research</td>
<td>• Demonstrated experience with molecular biology techniques including RNA analysis and analysis of RNA-protein and protein-protein interactions</td>
<td>• Experience in high-throughput sequencing and proteomics approaches.</td>
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<td>• Demonstrated experience in using <em>C. elegans</em> or other invertebrate genetically-tractable model systems.</td>
<td>• Experience with confocal microscopy.</td>
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<td>• Demonstrated experience with analysing RNA processing events.</td>
<td>• Experience with CRISPR-Cas9 genome editing.</td>
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<th>Personal qualities and abilities eg initiative, leadership, ability to work on own or with others, communication skills</th>
<th>Essential</th>
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<td>• Publication record and trajectory commensurate with career stage.</td>
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<td>• Evidenced ability to carry out hypothesis-driven research.</td>
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<td>• Ability to work independently and as part of a team.</td>
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<td>• Ability to work to deadlines.</td>
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<td>• Evidence of excellent written and verbal communication skills.</td>
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<td>• Ambition to develop an independent research career.</td>
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Other

eg special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.

• Willingness to represent the laboratory at local, national and international scientific meetings, workshops, symposia, etc, as required.

• Work for short periods away from Aberdeen at collaborators’ institutions in either Edinburgh or Munich.

• Willingness to work outside standard working hours as and when required.

• Training and supervising others, including students.

• Participation in public engagement activities.
The University

Founded in 1495, Aberdeen is Scotland’s third oldest University and the fifth oldest in the UK. Ranked within the world top 160 in the Times Higher Education Rankings 2019 and named Scottish University of the Year in the Times and Sunday Times Good University Guide 2019. Aberdeen is ‘open to all and dedicated to the pursuit of truth in the service of others’.

Aberdeen is a broad based, research intensive University, which puts students at the head of everything it does. It has significant academic strengths and potential across a wide variety of disciplines. Outstanding in a wide range of discipline areas, Aberdeen has also been credited for its international reach and its commercialisation of research ideas into spin out companies.

The University has over 14,000 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, inspires and helps every individual to reach their full potential.

The University combines a distinguished heritage with a forward looking attitude. In the past few years, the University has encouraged creativity in its academic staff, broken new ground with an innovative curriculum, and developed state-of-the-art facilities including the new Sir Duncan Rice Library and the Aberdeen Sports Village and Aquatics Centre. In looking to the future, the University seeks to enhance its reputation as one of the world’s leading Universities by moving forward with ever more ground breaking research; ensuring students have an intellectual and social experience second to none; and capitalising upon the dual role as one of the major institutions of the north and as a cornerstone of regional economic and cultural life.
School of Medicine, Medical Sciences and Nutrition

The School (https://www.abdn.ac.uk/smmsn/index.php) encompasses all of the disciplines that underpin today’s medicine, including biomedical sciences, health sciences, nutrition and medical, medical science and dental education and these are organised into five Institutes. The largest school in the University, the SMMSN has five Institutes: the Institute of Medical Sciences (IMS), the Institute of Applied Health Sciences (IAHS), the Rowett Institute, the Institute of Education in Medical and Dental Sciences (IEMDS) and the Institute of Dentistry, comprising all of our undergraduate and postgraduate programmes and our own graduate entry Dental School.

Staff are line managed and research opportunities are supported through our institutes which work together in an integrated and coordinated way to deliver research and teaching across the School, details of which can be found on their websites as below.

- The Institute of Applied Health Sciences https://www.abdn.ac.uk/iahs/
- The Institute of Medical Sciences http://www.abdn.ac.uk/ims/
- The Rowett Institute http://www.abdn.ac.uk/rowett/
- The Institute of Education in Medical and Dental Sciences https://www.abdn.ac.uk/iemds/
- The Institute of Dentistry https://www.abdn.ac.uk/dental/

Within the IMS, our scientists are working towards the creation of effective therapies for patients with a range of debilitating and life-threatening conditions. Current research areas include: arthritis and musculoskeletal medicine; cell developmental and cancer biology; immunity, infection and inflammation; metabolic and cardiovascular health; microbiology and translational neuroscience.

Within the IAHS, research is focused on improving health and health care delivery. It is home to a multidisciplinary grouping of around 100 university academic staff who conduct population and clinically-orientated health research and hosts the Health Services Research Unit (HSRU) and Health Economics Research Unit (HERU), both funded by the Chief Scientist’s Office (CSO) of the Scottish Government.

As well as being the organisational home to the teaching scholarship staff and responsible for oversight of the UG and PGT programmes offered by the School, the IEMDS promotes and supports excellence in medical education through research and development, with a focus on conceptually and theoretically robust research and development which has strong potential for reaching international recognition.

The Dental Institute runs an undergraduate BDS programme and a growing suite of masters programmes for professional development.

We have a number of specialist Centres representing areas of particular research strength and capacity within the School all of which are willing to support colleagues on projects in their areas. More information is available at the following websites.

- The Centre for Healthcare Education Research and Innovation (https://www.abdn.ac.uk/cheri/index.php)
- The Centre for Health Data Science (https://www.abdn.ac.uk/achds/)
- The Aberdeen Cardiovascular & Diabetes Centre (https://www.abdn.ac.uk/acdc/) and
- The Aberdeen Centre for Arthritis and Musculoskeletal Health (https://www.abdn.ac.uk/acamh/)

The School is home to over 800 staff and 2000fte students. It is located on the Foresterhill site, shared with our main clinical partner, NHS Grampian, with whom we work in close
collaboration at primary and secondary care levels. This is one of the largest integrated healthcare delivery, training and research sites in Europe and has rich assets including state-of-the-art academic (research and teaching) and clinical buildings. Excellent infrastructure is also provided through core facilities for biomedical science including flow cytometry, proteomics, microscopy and genome sequencing, support for data health science projects and clinical trials.

The last major academic capital development was the opening of the Rowett Institute, occupied in March 2016, whose staff undertakes nutrition research to help improve people’s lives through the prevention of ill-health and disease. Their new £40M building has provided the University of Aberdeen with a facility with unique capabilities for human nutrition and metabolic research. Currently, the NHSG is carrying out an exciting £164 million building development creating The Baird Family Hospital and The Aberdeen and North Centre for Haematology, Oncology and Radiotherapy (ANCHOR) Centre Project, scheduled for completion in 2021.
The city and the region

Aberdeen and Aberdeenshire

With a population of approximately 230,000, the city stands between the Rivers Dee and Don. This historic city has many architectural splendours and the use of its sparkling local granite has earned Aberdeen the name of the Silver City. Recognised as the oil capital of Europe, Aberdeen nevertheless retains its old-fashioned charm and character making it an attractive place in which to live.

Aberdeen enjoys excellent communication services with other European cities - e.g. flying time to London is just over one hour with regular daily flights. There are direct air links to London (City, Gatwick, Heathrow, and Luton), Manchester, Birmingham, Leeds, Southampton, Belfast and East Midlands within the U.K. There are also flights to international hub airports: Amsterdam (Schiphol), and Paris (Charles De-Gaulle) as well as flights to other European destinations. http://www.aberdeenairport.com Road and rail links are also well developed.

The Grampian Region which took its name from the Grampian Mountains has a population of approximately 545,000. It is made up of five districts – Aberdeen, Banff & Buchan, Gordon, Kincardine & Deeside and Moray. The city and the surrounding countryside provide a variety of urban, sea-side and country pursuits. Aberdeen has first class amenities including His Majesty's Theatre, Music Hall, Art Gallery, the Aberdeen Exhibition Centre, Museums, and Beach Leisure centre. Within a short time, beach pursuits, equine activities, salmon, trout and sea fishing, hill-walking, mountaineering, golf, sailing, surfing and windsurfing can be reached. The city and the surrounding countryside are repeatedly given high ratings for quality of life in surveys.

Aberdeenshire is 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.

Aberdeen and Aberdeenshire cater for a wide range of tastes in sporting and cultural activities.

To find out more about Aberdeen and Aberdeenshire go to www.visitabdn.com
How to apply

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

The closing date for receipt of applications is **08 November 2019**

Should you wish to make an informal enquiry please contact:

Dr Berndt Müller  
+44(0)1224 437536  
b.mueller@abdn.ac.uk

Please do not send application forms or CVs to Dr Muller.

Please quote reference number IMS174R on all correspondence

The School of Medicine, Medical Sciences and Nutrition welcomes a diverse working environment and recognises the benefits this can bring. The School is keen to receive applications from individuals from across all of the equality protected characteristics (race, gender, disability, gender reassignment, age, sexual orientation, religion/belief, pregnancy/maternity, marriage/civil partnership).

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 here:

[https://www.abdn.ac.uk/staffnet/working-here/flexible-working--5607.php](https://www.abdn.ac.uk/staffnet/working-here/flexible-working--5607.php)

The University’s commitment to gender equality has been recognised through the achievement of an Athena SWAN Bronze award. The University is also a Stonewall Diversity Champion to further LGBT equality and a Disability Committed Employer recognising our commitment to supporting disabled staff and students.