Research Fellow

School of Natural and Computing Sciences

Closing date: 5 July 2021
Interview date: TBC
Reference number: NCS176R
**INTRODUCTION**

A position is available for an independent and highly motivated individual to work as a Research Fellow in the Marine Biodiscovery Centre in the Department of Chemistry at the University of Aberdeen. This post is part of the Horizon 2020 Programme Consortium ‘MARBLES - Marine Biodiversity as Sustainable Resource of Disease-Suppressive Microbes and Bioprotectants for Aquaculture and Crop Diseases’.

**JOB DESCRIPTION**

**MAIN PURPOSE OF THE ROLE:**
The successful candidate will have a PhD in Natural Product Chemistry, Biochemistry or Molecular Biology. You will become part of a multidisciplinary, multinational team and be responsible for compound dereplication, isolation and applying spectroscopic and computational methods to solve the structures of the bioactive compounds isolated from marine microorganisms. Experience of chromatographic isolation procedures and NMR and MS natural product characterisation methodology is essential and knowledge of fermentation of microorganisms and some molecular biology skills are desirable. You will also have responsibility for overseeing the operation of the MS systems and experience of MS operation is essential. Training will also be provided to enable the successful candidate to extend and complement her or his existing skills.

**KEY RESPONSIBILITIES:**
- Responsible for detailed planning and execution of a clear and achievable research program.
- Generate and analyse data in preparation for reports and publication.
- Take a leading role in the drafting of papers and in the presentation of results at consortium meetings and at conferences.
- Interact with visiting research staff and help supervise junior laboratory members and undergraduate students undertaking projects in the laboratory.
- Keep up-to-date with the current and relevant literature and methodologies in order to gain an expert working knowledge of the topic under study.
- Participate in meetings and help drive existing, and identify future, external collaborations.
- Undertake studies linked to this proposal in the laboratories of MARBLES consortium partners.
- Help with maintaining risk assessments and overall organisation of the laboratory.
- Oversee the operation and maintenance of the mass spectrometry service

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**AT A GLANCE**

**SALARY:**
Grade 7
£41,526 - £45,361 per annum

**HOURS OF WORK:**
Full Time

**CONTRACT TYPE:**
Available for 48 months

**LOCATION:**
Aberdeen
CANDIDATE BACKGROUND

Knowledge
- Should have a PhD in natural product chemistry, biochemistry or molecular biology
- Knowledge of chromatographic purification methods, in particular HPLC
- Good knowledge of a 1D and 2D NMR and MS techniques
- Knowledge of operation of mass spectrometers
- Knowledge of natural product dereplication techniques and molecular networking
- Familiar with basic microbiological techniques as required for strain isolation and fermentation
- Familiarity with molecular biology techniques

Skills
- Purification of complex mixtures of natural products
- Expertise in acquiring spectroscopic data and its detailed interpretation
- Expertise in compound dereplication
- Evidence of having operated mass spectrometers
- Expertise in state-of-the-art automated analysis of MS data (e.g. GNPS, MZmine)
- Evidence of independent writing of papers
- Ability to work independently or as part of a team
- Ability to think critically

Experience
- Experience in solving complex natural product structures
- Experience in supervising junior researchers
- Experience of managing laboratory equipment such as mass spectrometers, HPLC
- Experience in organising research teams

TERMS OF APPOINTMENT

Salary will be at the appropriate point on the Grade 7 salary scale, (£41,526 - £45,361 per annum) and negotiable with placement according to qualifications and experience.

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

As this post is funded by the European Commission it is available for 48 months.

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 Heather Clark, HR Adviser (e-mail: h.m.clark@abdn.ac.uk) for further information.
## Person Specification

### Education/Qualifications

#### Academic, technical and professional education and training

**ESSENTIAL**
- PhD in natural product chemistry, biochemistry or molecular biology

**DESIRABLE**
- Experience in isolating natural products from complex mixtures
- Expertise in acquiring spectroscopic data and its detailed interpretation.
- Experience in solving complex natural product structures
- Knowledge of chromatographic purification methods, in particular HPLC
- Experience of running mass spectrometers
- Experience in natural product dereplication and molecular networking
- Good knowledge of a 1D and 2D NMR and MS techniques
- Expertise in state-of-the-art automated analysis of MS data (e.g. GNPS, MZmine)
- Evidence of independent writing of papers
- Experience in organising research teams

### Work and Other relevant experience (including training)

#### e.g. Specialist knowledge, levels of experience, supervisory experience, research

**ESSENTIAL**
- Experience in isolating natural products from complex mixtures
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- Experience in natural product dereplication and molecular networking
- Good knowledge of a 1D and 2D NMR and MS techniques
- Expertise in state-of-the-art automated analysis of MS data (e.g. GNPS, MZmine)
- Evidence of independent writing of papers
- Experience in organising research teams

**DESIRABLE**
- Familiar with basic microbiological techniques as required for strain isolation and fermentation
- Experience with fermentation of marine microorganisms for natural product isolation
- Experience of molecular biology techniques
- Experience of working as part of a diverse, multidisciplinary team

### Personal qualities and abilities

#### e.g. initiative, leadership, ability to work on own or with others, communication skills

**ESSENTIAL**
- Excellent oral and written communication skills
- Ability to work independently on own initiative and in a team environment
- Excellent presentation skills
- Willingness to present work at international meetings
- Good organisational skills, and proven track record of working effectively with collaborating partners
- Demonstrable experience of carrying out high quality research
- Willingness to provide training for and to assist in the co-supervision of research projects of PhD and undergraduate students

### Other

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

**ESSENTIAL**
- Willing to travel to partner labs to carry out research.
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 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 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.

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.

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

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

**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.
THE SCHOOL OF NATURAL AND COMPUTING SCIENCES

The School of Natural and Computing Sciences addresses the fundamental physical sciences, applies mathematics to interdisciplinary problems, develops the next generation of smart computational systems, and takes chemistry from lab to everyday life. The School consists of four departments: Chemistry; Computing Science; Mathematics & Physics. Our research is high quality and often outward facing, with many interactions with other disciplines, with public bodies and with industry. We have leading groups in each discipline. From topology to transition metals, from natural language to natural products, from complex systems to catalysis, our research is diverse and also covers the range from pure to applied.

In addition, we have been involved in a number of spin-out companies in diverse areas such as drug development for Alzheimer’s disease (TauRx, Chemistry, Physics), natural language generation for multiple applications including medical monitoring and weather reporting (Arria, Computing Science) bone replacement materials (Sirakoss, Chemistry) and new fuel cell materials (Enocell, Chemistry).

The Department of Chemistry was established in 1793 and is an outward looking, vibrant and diverse department with a strong international collaborative profile. We are proud to have been ranked first in Scotland for research impact in REF2014, driving exciting breakthroughs in new medicines, energy, functional materials, catalysis, biomaterials, and the environment. We have excellent research facilities and engage and work with multiple partners (academic and industry) to enhance the impact of our research.

The Marine Biodiscovery Centre (MBC) Was established in 2010 and its research predominantly concerns marine natural product chemistry including microbial strain isolation, chemical isolation, and structural determination using spectroscopic methods. There are exciting projects focused on the discovery of biologically active molecules in a range of disease areas such treatments for parasitic infections, cancer, bacterial/fungal infections, and inflammation. The MBC is a £2.5 M, 400 m² integrated facility with state-of-the-art equipment for the discovery of new products from marine bioresources as well as their synthesis and modification. It houses unique analytical facilities for structural characterisation. There are few dedicated facilities for biodiscovery worldwide and the MBC is at the vanguard of exploration of bioresources for medical and non-medical applications. The MBC co-locates synthetic chemists, medicinal chemists, natural product chemists, analytical chemists, molecular biologists and microbiologists. It incorporates work on natural products from marine invertebrates, plants, bacteria and fungi.
The MARBLES Project MARBLES will use a novel and systematic approach to access and exploit marine microbial biodiversity for sustainable bioprospecting to discover microbial consortia and bioactive molecules for application in aqua- and agriculture and in the clinic. MARBLES’ ecology-based bioprospecting strategy will focuses on unique host-microbe interactions in marine environments, including marine sponges, microalgae and fish, which rely on their microbiomes and microbial natural products for disease resistance. Partners’ existing microbial collections and new ones generated during MARBLES will be harnessed for the discovery of novel natural products and synthetic microbial communities. For this, MARBLES will use a systems-wide genomics approach to uncover the bioactive agents in disease-suppressive microbiomes. Also, MARBLES will explore host- and microbe-derived chemicals that elicit production of bioactive compounds, as elicitors to revitalise drug screening. The deliverables will be microbes and consortia and bioactive natural products, their derivatives and elicitors, which can be harnessed to fight infectious diseases in the agrochemical and aquaculture industries and in healthcare. Besides highly innovative, the approaches will be cost-effective and will offer advantages from both environmental and health perspectives in comparison to existing alternatives. The sustainable production of bioprotectants will increase the effectiveness of fish production - reducing the pressure on harvesting wild fish - and aid the transition of the crop agriculture sector towards bio-based and circular solutions. MARBLES will work closely together with a panel of SMEs and large companies from the EU aquaculture, crop protection biotechnology and health sectors.
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 our 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 5 July 2021

Should you wish to make an informal enquiry please contact:

Professor Marcel Jaspers
m.jaspers@abdn.ac.uk

Please do not send application forms or CVs to Professor Jaspers.

Please quote reference number NCS176R on all correspondence