



UCL

Job Description

Job title: Postdoctoral Research Fellow in Protein Science

Grade: 7

**Division: School of Pharmacy
Faculty: Life Sciences**

Location: London, Bloomsbury Campus

Reports to: Prof Matthew Todd, Head of Research Department of Pharmaceutical and Biological Chemistry

Direct reports: None

ABOUT UCL

Founded in 1826, UCL is one of the world's leading multidisciplinary universities with over 11,000 staff and 38,000 students from 150 countries across the globe. UCL was ranked second in the UK for Research Power in the 2022 Research Evaluation Framework exercise and was ranked No. 1 in London and No. 8 in the world in the 2023 QS World University Rankings.

UCL Academic Departments and Institutes cover a wide range of disciplines and are grouped together in the following Faculties: Arts and Humanities, Social and Historical Sciences, Laws, Mathematical and Physical Sciences, Engineering, Built Environment, Brain Sciences, Population Health Sciences, Life Sciences and Medical Sciences.

UCL FACULTY OF LIFE SCIENCES & THE SCHOOL OF PHARMACY

The [Faculty of Life Sciences](#) is an exciting and dynamic environment driving forward ambitious and challenging plans for future development. We are committed to enhancing research and teaching in relation to major global challenges, including climate change, sustainability, technological change and the data revolution and inequality. Ranked No. 1 in London and No. 8 in the world (QS World University Rankings 2021) the Faculty offers an outstanding and diverse portfolio of Undergraduate and Postgraduate programmes in biological and biomedical sciences, pharmacy, pharmacological and pharmaceutical sciences, neuroscience and machine learning.

The Faculty is made up of five academic Divisions; the School of Pharmacy, Biosciences, the Laboratory for Molecular Cell Biology, the Sainsbury Wellcome Centre for Neurocircuits and Behaviour and the Gatsby Computational Neuroscience Unit. In addition, it is home to a specialist teaching facility; the Cruciform Teaching Facilities Unit. Some of the constituent parts of the Faculty have long and distinguished histories that can be traced back to the early 19th century when UCL was founded and we are proud to have nine Nobel Laureates associated with Life Sciences.

[UCL School of Pharmacy](#) is one of the world's leading centres of excellence for pharmaceutical science, education and professional engagement. The Division has a well-established track record in high quality research across a broad range of drug discovery, pharmacy and patient safety related areas as well as in the development of spinout companies bringing new therapeutic strategies to the patient.

Main purpose of the job

In 2022, the National Institutes of Health in the US funded several antiviral drug discovery (AViDD) centres to develop novel, direct-acting antivirals in advance of the next pandemic. One of these centres, READDI, is based at the University of North Carolina, Chapel Hill (UNC) and encompasses a network of collaborating academic institutes and industrial partners. The medicinal chemistry core, handling all hit-to-lead chemistry, is shared between two sites, both affiliated

with the Structural Genomics Consortium: Tim Willson's laboratory at UNC and Matthew Todd's laboratory at UCL. These posts constitute the UCL part of the core and will work closely with the rest of the AVIDD consortium. Funding of \$63M has been secured to cover the consortium to 2025, with the possibility of an extension for a further two years. This opening represents a rare and exciting opportunity to make a major international contribution to pandemic preparedness through basic research.

This is an exciting opportunity for a group of scientists to join UCL for a long-term project that will make a material difference to our pandemic preparedness. All the posts will be based in the Research Department of Pharmaceutical and Biological Chemistry in the UCL School of Pharmacy in central London. The UCL School of Pharmacy is a major centre for drug discovery in the University, but sits within a network of related activity that spans the Crick, the Alzheimer's Drug Discovery Initiative, the Wolfson Institute for Biomedical Research and the Department of Chemistry. The post holders will benefit from newly-refurbished (2022) laboratory infrastructure and £2M of investment in new NMR and MS instrumentation in 2022 that has created a local analytical centre of excellence in the School that is complemented by extensive, additional instrumentation available across UCL. The School collaborates widely across pharmacy research and education with UNC through its Pharmalliance partnership that includes Monash University in Australia. The School's translational activities are assisted by the Translational Research Office, which also run several Wellcome-funded Therapeutic Innovation Networks (TINs) that connect researchers across UCL; Professor Todd chairs the Small Molecule TIN, and co-organises the Chemistry for Medicines seminar program jointly with the Department of Chemistry.

The posts will together drive UCL's half of the medicinal chemistry core. The over-arching responsibility will be to progress the hits discovered vs viral proteins by the Discovery Core headquartered at Cheryl Arrowsmith's laboratory at the University of Toronto.

The postholder in protein science will be responsible for protein expression and purification, and assay development in close consultation with the rest of the protein science team in the consortium. More detailed description of the specific requirements are given below.

An important aspect of the research is that it is open. All READDI-AViDD hit discovery and hit to lead chemistry will take place in the public domain, and an essential aspect of the research is that anyone in the community can contribute. In line with Professor Todd's open source drug discovery concept, all data and ideas will be freely shared, anyone may take part in the research and no patents will be filed by the team on the research performed. The core prosecutes hit to probe chemistry, where probes are potent, cell-active binders of viral proteins. Translation of such probes into drug candidates, including proprietary assets by our pharma partners, is subsequently possible by virtue of the chemical space that surrounds the probes. All post holders will be expected to drive community engagement strongly.

We are emphatically seeking collegiate individuals who will work well with others as part of a fast-moving team. To promote the maximum team and consortium momentum, the posts are all expected to be full-time on site. There is the potential for some of the clerical/administrative work to be done remotely where that is appropriate.

Duties and responsibilities

Postdoctoral Research Fellow (Protein Science)

- To carry out high quality protein production and purification in the laboratory in order to access samples of pure, well characterised, functional proteins in collaboration with other parts of the consortium.
- To reproduce and/or contribute to the creation of relevant binding assays for interaction between proteins and small molecules using biophysical techniques such as SPR, DSF, NMR, MS and ITC. To do the same for enzymatic assays where those are available and required.
- To oversee the effective sharing of project data openly, ensuring that the community can contribute to the open science projects that are being led by the postholder.
- To carry out world-class research and produce high quality publications, or other research outputs, in line with personal objectives agreed in the staff review process.
- To work as part of a team. To supervise the activities of the other, junior researchers where appropriate.
- To assist with the preparation of materials required to generate external income to support related or follow-on research.
- To collaborate with academic and industrial researchers within and without the consortium.
- To act as target/project champion for relevant research projects, for example by leading relevant research meetings and writing summary reports.
- To play an active role in the strategic direction of the research program.
- To play an active role in the strategic direction and effectiveness of the open research in collaboration with colleagues from READDI and the Structural Genomics Consortium.
- To write reports and deliver high quality presentations on behalf of the initiative.
- To participate in departmental, divisional and Faculty seminars as appropriate.
- To build new research collaborations within and outside the School of Pharmacy.
- To demonstrate an ongoing commitment to academic excellence; that is, to the conduct of research, publication, enabling and other forms of knowledge transfer, at the highest levels of international achievement.
- To engage in a constant process of learning and self improvement in areas of benefit to the for example synthetic chemistry, protein science and virology.

Research

- Provide training and supervision for research students.

Education

- There are no educational requirements for these posts, but opportunities for involvement in teaching that could help to further career aims can be negotiated with Professor Todd

Equality, Diversity and Inclusion

- The School prides itself on being an environment whereby the principles of Equality, Diversity and Inclusion are not just respected but are actively encouraged. We strongly welcome candidates with a clear commitment to these principles and will provide multiple opportunities for them to participate in our various EDI programmes.

Health and Safety

- All post holders must ensure that their activities, whether undertaken on UCL premises or elsewhere, comply with Health & Safety legislation and UCL policy. The post holders will maintain an awareness and observation of Fire and Health and Safety Regulations.

Other

- As duties and responsibilities change the job description will be reviewed and amended in consultation with the post holder. Job descriptions cannot be exhaustive and so the post holder will carry out any other duties within the scope, spirit and purpose of the job as requested by Professor Todd.
- The successful candidate will need to meet UCL's expectations of core behaviours as outlined in <https://www.ucl.ac.uk/human-resources/policies-advice/core-behaviours-framework>

The successful candidate will need to meet UCL's expectations of:

Academic Excellence (Project Manager and Postdoctoral Fellows)

- Regularly publish research material or produce other research outputs in a form eligible for inclusion in the Research Excellence Framework (REF).
- Be proactive in applying for available research funding and prove themselves capable of winning external research funding.
- Demonstrate an ability to manage research projects and promote the training and development of early career researchers.
- Demonstrate successful supervision of research students.
- Demonstrate commitment to and experience of high quality teaching

UCL's Core Behaviours

- Demonstrate the ability to provide strategic academic leadership to continue to develop the Research Department as a leading world class research unit (Project Manager and Postdoctoral Fellows).
- Provide evidence of effective people management to produce high performing team-working; bringing together collaborations and cross disciplinary activity.
- Demonstrate successful resource management and strategic planning to meet targets and achieve deliverables.

How to apply

Applications for the position should be made online at <http://www.ucl.ac.uk/hr/jobs/> and should include:

- a cover letter
- a curriculum vitae, detailing research experience that is relevant to the expression and purification of proteins, and the establishment of binding assays between those proteins and small molecules.
- the names and addresses of three referees
- details of current salary

We particularly welcome female applicants and those from ethnic minorities, as they are currently under-represented within UCL at this level.

Contacts

Informal enquiries may be made to the Head of Research Department, Pharmaceutical and Biological Chemistry, Professor Matthew Todd (matthew.todd@ucl.ac.uk).

Person Specification

Criteria	Essential or Desirable	Assessment method: application (A) Interview (I)
Qualifications, experience and knowledge		
PhD or equivalent qualification	E	Application
Demonstrable achievement of internationally competitive research, for example through the authorship of high quality publications, and/or through the acquisition of research funding.	E	Application/Interview
Experience in the expression of proteins (ideally in a range of expression systems such as bacterial, mammalian and insect cells) and their purification, and the use of those proteins in establishing suitable binding assays (ideally SPR, NMR or thermal shift).	E	Application
Excellent communication skills	E	Application/Interview
Skills and abilities		
An outstanding contribution to a body of knowledge and an international research profile with commensurate, sustained research or other outcomes appropriate to the discipline.	D	Application
An appropriate number of research students or co-workers successfully supervised	D	Application
Evidence of the impact of knowledge transfer/exchange on practice or on quality of life through ongoing engagement with communities	D	Application
Evidence of successful collaboration with other research teams/institutions	E	Application
Proven success in research leadership	D	Application
Experience in the management of small teams of professional and support staff	D	Application/Interview
UCL Ways of Working for professional services (Attributes)		
A strong and demonstrable commitment to continuous professional development	D	Application
Commitment to UCL's policy of equal opportunity and the ability to demonstrate this commitment through their teaching, research and citizenship duties.	E	Application/Interview