



Job Description

College	Science
School	CBNI, School of Chemistry and Chemical Biology
Unit	Centre for BioNano Interactions
Post Title & Subject Area	UCD Post-doctoral Research Fellow 2 - Marie Curie Fellow
Project	Biophysical studies of Nanoparticle-Cell interactions
Post Duration	2 years
Reports to	Prof. Kenneth Dawson
HR Reference No.	006697
HR Administrator	Sarah Dunne

Position Summary

Nanoscience has the potential to revolutionise and benefit many aspects of human society, especially in the fields of information technology and medicine. As one of the world's leading centres of knowledge for bionanointeractions, applied to the fields of nanosafety, nanobiology and nanomedicine, the Centre for BioNano Interactions is pioneering many of the new techniques and approaches in this area.

Key areas of research are:

- Interactions between nanoparticles and living systems
- Nanobioscience, nanomedicine, nanodiagnostics, nanosafety
- Health and environmental impact of nanoparticles
- Applications of bionanoscience for therapy and diagnostics

Within this context, CBNI has partnered with Attana AB as part of an Industry-Academia Partnerships and Pathways (IAPP) research award in order to investigate the application of QCM (quartz crystal microbalance) technology in the measurement of cell-nanoparticle interactions. The successful applicant for this position can expect to work with a range of platforms and methods developed for purpose at the CBNI including flow cytometry, confocal fluorescence microscopy and electron microscopy and integrate these approaches with QCM investigations on cell- nanoparticle interactions. The applicant will work closely with colleagues at both CBNI and Attana AB to develop the project.

For this purpose, CBNI is looking for an experienced **Postdoctoral Researcher** with at least 3 years previous research experience in cell biology and biophysical measurement techniques. Experience in the study of bio-nano interactions would also be advantageous. However, CBNI is able to support the appointee in all nano related issues, so preference is given for outstanding capacities in molecular and cell biology, with the flexibility to innovate and cross boundaries.

The researcher will apply biological characterization methods to a range of standard and novel nanomaterial types (receptor targeted, shape controlled etc.) developed within the CBNI group to validate, support and advance the Attana QCM platform for investigation of nanoparticle – cell interactions.

This is an advanced research focused role, building on your prior experience as a post-doctoral fellow, where you will conduct a specified programme of research supported by research training under the supervision and direction of a Principal Investigator. The appointee will liaise closely with Attana AB, Stockholm through organised visits, contributing in a management role, and promoting collaboration through the overall project.

The primary purpose of the role is to develop new or advanced research skills and competences, on the processes of publication in peer-reviewed academic publications and scholarly dissemination, the development of funding proposals, and the supervision and mentorship of graduate students along

with the opportunity to develop your skills in research led teaching.

In addition to the Principal Duties and Responsibilities listed below, the successful candidate will also carry out the following additional duties:

- Assessment of nanoparticle-cell interactions by flow cytometry/ microscopy using various cell methods e.g. siRNA knockdown, competitive receptor binding etc.
- Assessment of interactions – working with theorists to develop and validate models which can describe observed behaviours.
- Understanding the nanoparticle colloidal stability in complex media
- Manage research projects as appropriate, ensuring that deliverables are submitted on time, etc.
- Working closely with partners to ensure the overall success of the project
- Attending project meetings etc.
- Disseminate the results of research through publication in academic journals and by other appropriate means
- Take responsibility as requested for day-to-day advice and support of graduate research students associated with the research group and this particular program

As required under the Marie Curie award:

Experienced Researchers must, at the time of recruitment or secondment, (i) be in possession of a doctoral degree, independently of the time taken to acquire it or (ii) have at least four years of full-time equivalent research experience, including the period of research training, after obtaining the degree which formally allowed them to embark on a doctorate in the country in which the degree was obtained or in the country of the host institution to which they are seconded or recruited (irrespective of whether a doctorate was envisaged or not).

Mobility Requirements

To ensure the European character of an IAPP project, **researchers to be newly recruited are required to undertake trans-national mobility** when taking up their appointment. At the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc) in the country of their host organisation for more than 12 months in the 3 years immediately prior to their recruitment. Short stays such as holidays and/or compulsory national service are not taken into account.

Salary: Living Allowance of €48,813 per annum plus mobility allowance* of up to €10,048 per annum (*payable in line with Marie Curie FP7 regulations)

Principal Duties and Responsibilities

- Conduct a specified programme of research and scholarship under the supervision and direction of your Principal Investigator.
- Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.
- Support your Principal Investigator and research group in the design and development of the research programme.
- Support if required, the development of proposals for research funding.
- Engage in the dissemination of the results of the research in which you are engaged as directed by and with the support of and under the supervision of your Principal Investigator.
- Engage in the wider research and scholarly activities of your research group, School and Institute.
- Take responsibility as requested for day-to-day advice and support of graduate research students associated with your research group.
- Mentor and assist, as appropriate and as directed, the research graduate students in your group, School and Institute.

- Carry out administrative and management work associated with your programme of research.

Selection Criteria

Selection criteria outline the qualifications, skills, knowledge and/or experience that the successful candidate would need to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on the basis of how well candidates satisfy these criteria.

Mandatory

- PhD in molecular biology, biophysics or a related discipline
- 3 Years Post-Doctoral Research Experience
- Demonstrated understanding of operational requirements for a successful research project and managing resources
- Knowledge and application of the principles underpinning successful grant application
- Ability to identify and fulfil the academic writing requirements for target publications
- Proven record of working with team members and PhD students to help build their research skill and knowledge and to support and guide their professional development
- Generates new ideas and links and builds upon existing ideas to generate unique concepts and solutions
- Excellent communication skills, both written and oral, and the ability to generate reports and presentations to the highest standards.
- A high degree of professionalism and integrity.
- Ability to work as part of a multi-disciplinary team and provide leadership and delegation if and when required

The PD2 post is intended for researchers that have completed PD1. As with the PD1, if you have already completed your PD2 stage in UCD or will soon complete a PD2, or your total Postdoctoral experience, inclusive of the duration of the advertised post, would exceed 6 years, you should not apply and should refer to Research Fellow posts instead.

Desirable

- Experience in cell biology and dissection of cellular pathways.
- Previous experience in grant writing and managing grants
- Previous industrial experience or experience in industrial engagement.
- Ability to interact with leaders in industry, international organizations, government organizations, and academia.
- Previous Involvement in European projects and project meeting
- Demonstrated understanding of the value of academic and commercial information e.g. Non-disclosure agreements.
- Knowledge of IP processes and knows how to protect findings.
- Demonstrated ability to work independently and as part of a team.
- Ability to manage multiple diverse tasks by setting priorities and scheduling resources within the team.
- Experience in setting own research agenda.
- Excellent track records (publications in high impact journals, invited lectures etc.).
- Proven record of working with team members and PhD students to help build their research skill and knowledge and to support and guide their professional development.

Further Information for Candidates

Supplementary information

The University:	http://www.ucd.ie/aboutucd.htm
The College of Science:	http://www.ucd.ie/science/
The School of Chemistry & Chemical Biology:	http://www.ucd.ie/chem/
Centre for BioNano Interactions:	www.ucd.ie/cbni

UCD offers a comprehensive **Research Careers Framework** in line with the Advisory Science Council Report '*Towards a Framework for Researcher Careers*'. This model provides a structured and supportive **Career and Skills Development** system designed to ensure that Post-docs in UCD are able to plan their careers and prepare for future opportunities in academia, industry or the public sector. For more information, please [click here](#)

Relocation Expenses

- Will not apply
- Will be applied in accordance with the UCD policy
<http://www.ucd.ie/hr/policies/#d.en.31150>

Informal Enquiries ONLY to:

Name:	Karen Griffin
Title:	CBNI Research Administrator
Email address:	Karen.griffin@cbni.ucd.ie