



**Job Title:** Marie-Curie Postdoctoral Fellow – Fixed term (18 months)

**Grade:** UCL Grade 7, Point 30

**Reporting to:** Professor Kostas Kostarelos

**Department:** Nanomedicine Lab, UCL School of Pharmacy

### **Background Information**

**The Nanomedicine Lab** focuses on preclinical development of nanomedicine constructs based on novel nanomaterials of synthetic and biological nature, including:

- development of novel viral and non-viral gene therapy vectors
- engineering and pharmacological development of carbon nanomaterials (fullerenes, nanotubes, graphene)
- delivery & genetic manipulation of embryonic and progenitor stem cells
- advanced delivery systems for radio- and chemo-therapeutic agents against cancer
- descriptive and predictive modeling of delivery systems' pharmacological performance
- descriptive and predictive modelling of the pharmacological and toxicological profile of novel nanomedicines

We are engineering delivery systems for drugs, cells, proteins, radionuclides and genes towards therapeutic and diagnostic clinical applications. Great emphasis is placed at the interface between *in vitro* and *in vivo* studies and how rationally-designed delivery systems can be translated into clinically-effective therapeutics and diagnostics.

Expertise in drug delivery and biopharmaceutics within the UCL School of Pharmacy is broad and includes: inhaled drug delivery; delivery to and through the skin; delivery through the gastrointestinal tract; the use of polymers in drug delivery; clinical pharmaceuticals collaborating with Great Ormond Street Hospital, the Institute for Child Health, Moorfield's Eye Hospital and University College London Hospital.

Further information about the Nanomedicine Lab can be found at [www.nanomedicinelab.com](http://www.nanomedicinelab.com) and about the UCL School of Pharmacy at [www.ucl.ac.uk/pharmacy](http://www.ucl.ac.uk/pharmacy)

### **Purpose of the Post**

A Marie-Curie Research Fellow position is available at the Nanomedicine Lab as part of its participation in a Marie-Curie Industry-Academia (IAPP) project funded by the European Commission FP7 programme. The Research Fellow is expected to execute and lead the scientific contributions of the Nanomedicine Lab in this project. The work will involve carbon nanotube (CNT) chemical functionalization to render them water soluble and improve their biocompatibility in collaboration with other laboratories. The functionalisation process will be applied to produce CNTs derivatised with two different molecular entities, such as a nucleic acid (e.g. siRNA) and/or a drug (e.g. TKIs) or a probe molecule (for imaging). In addition, the newly recruited Fellow at UCL will work on biological investigations of the nanotube systems by *in vitro* experiments in tumor interstitial matrix-mimetic gels and 3D tissue phantoms. Using such models, the interaction between tissue architecture and the distribution of the nanotubes will be examined by confocal fluorescent microscopy.

## Main Duties and Responsibilities

### **Teaching and learning support**

The Fellow will be expected to contribute to supervision of postgraduate research students at the MPharm, MSc and PhD level.

### **Research and scholarship**

The Fellow is expected to conduct research in coordination with the Nanomedicine Lab partners internally and externally, and contribute towards the development of research objectives, projects and proposals. The Fellow is expected to write and contribute to the reports and publications, disseminate research findings, and to make presentations at meetings, conferences and events of the research consortia that will be involved. The Fellow will be expected to have managerial responsibilities in relation to the scientific coordination and running of a European Commission funded project.

### **Communication**

Routinely communicate complex and conceptual ideas to those with limited knowledge and understanding as well as to peers using high level skills a range of media. Collaborate actively within and outside UCL and the IAPP Consortium to complete the research tasks, advance and disseminate thinking. The Fellow will be expected to lead the communication with the Coordinator of the rest of the partners in the Consortium.

### **Managing people**

Coach and support colleagues in developing their research techniques. Depending on the area of work could be expected to supervise the work of others, for example in research teams or projects.

### **Teamwork**

The Fellow will be expected to develop productive working relationships with other members of staff and students internally and partners of the research consortium externally.

### **Other Duties**

- To attend and represent UCL at the IAPP scientific meetings
- To attend regular internal group and Departmental meetings and seminars.
- Undertake scientific literature searches relating to the project as directed.
- Any other tasks as specified by the project supervisor in accordance with the grading of the post.

## Person specification

The successful candidate will be able to demonstrate that they meet the following criteria:

	Essential	Desirable
Education/ Qualifications	<ul style="list-style-type: none"><li>• PhD in chemistry, physics, material science, polymer chemistry, chemical or electrical engineering</li></ul> <p><u>Marie Curie Fellow criteria:</u> a researcher who, at the time of recruitment by the host organisation is already in possession of a doctoral degree, independently of the time taken to acquire it, or having at least 4 years of research experience (full-time equivalent) after obtaining the degree which formally allows him/her to embark on a doctorate in the country in which the degree/diploma was obtained or in the country where the knowledge sharing and inter-sector mobility activities are provided.</p>	<ul style="list-style-type: none"><li>• Research experience on chemical functionalisation and characterisation of nanomaterials</li></ul>

Experience	<p>Experience in:</p> <ul style="list-style-type: none"> <li>• performing high quality research</li> <li>• writing reports and scientific articles based on results obtained</li> <li>• nanomaterials synthesis and characterisation</li> </ul>	<p>Experience in:</p> <ul style="list-style-type: none"> <li>• cleavable bonds responsive to chemical, physical or electrical stimuli</li> <li>• chemical functionalisation of nanomaterials</li> <li>• spectroscopic and microscopy (TEM, AFM) techniques</li> <li>• basic biological studies (cell culture) and fluorescence microscopy</li> </ul>
Skills/Abilities	<ul style="list-style-type: none"> <li>• Ability to perform chemical research and to prepare, collate, interpret results and prepare manuscripts for publication in high-profile peer reviewed journals</li> <li>• An ability to work to agreed deadlines.</li> <li>• Ability to manage (scientifically and administratively) a research programme under the guidance of the PI (Prof.Kostarelos), including the preparation of reports towards the IAPP reviewing process.</li> <li>• Effective organisation and administration skills</li> <li>• Strong interpersonal and networking skills along with the ability to provide advice to Ph.D. students.</li> <li>• Competence in IT skills, e.g. use of Microsoft Office and Internet search and software (e.g.ChemDraw) tools.</li> </ul>	
Training/Development	<ul style="list-style-type: none"> <li>• A willingness to undertake further training as appropriate and to adopt new procedures as and when required</li> </ul>	
Personal attributes	<ul style="list-style-type: none"> <li>• Commitment to continuing professional development.</li> <li>• A collegiate approach to team working, with the ability to listen to others and develop effective team-based solutions.</li> </ul>	
Marie Curie IAPP eligibility criteria	<p>To be eligible, the candidate must not have resided or carried out his/her main activity in the UK for more than 12 months in the past 3 years (05/2009 to 05/2012). Compulsory national service and/or short stays such as holidays are not taken into account.</p>	
Other	<ul style="list-style-type: none"> <li>• Commitment to observing the School's Equal Opportunity policy at all times</li> </ul>	

## **Funding and Duration**

The post is funded by the EC FP-7 IAAP for 18 months. The position is available immediately.

## **Salary**

The basic salary will be between: £30,122 plus £2,806 London Allowance.  
Further top-up of salary is payable subject to status.

## **Hours of Work**

The post is full-time.

## **Annual Leave**

27 working days, plus statutory holidays.

## **Superannuation**

The appointment is superannuable under USS contributory Superannuation Scheme.

## **Probationary Period**

The appointment is subject to the standard academic probationary period of three months.

## **Medical**

This appointment will be subject to Occupational Health clearance.

## **Benefits**

An interest-free Season Ticket Loan is available, following the successful completion of the probationary period.

## **No smoking Policy**

The School operates a 'No Smoking Policy' on its premises.

## **Selection Procedure**

The candidates who appear from the information available, to have qualifications, experience and abilities which best match those we are looking for, will be invited to interview. It is therefore essential for your application to give a full and concise description of the nature, extent and level of the responsibilities you have held.

The selection panel will select the candidate most suitable for appointment. Their decision will be final.

If you are successful, the School will carry out enquiries into your health and eligibility to work in the UK together with other enquiries, to ensure that you are qualified for the appointment.

This is a description of the job as it is at present constituted.

Employee job descriptions may be examined at any time to either ensure that they relate to the job currently being performed, or to incorporate proposed changes.

Management reserves the right to change a job description after consultation with the employees concerned.

The aim will be to reach agreement to reasonable changes consistent with the employee's grade and status.

**The closing date for receipt of applications is 30th October 2012.**