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| College Management Unit: | UCD College of Engineering & Architecture |
| School Unit: | UCD School of Mechanical and Materials Engineering |
| Post Title & Subject Area (if relevant) | UCD Post-doctoral Research Fellow Level 1 |
| Project: | Conjugated STING-agonist nanoparticles as novel therapeutic add-on to enhance the therapeutic response of chemotherapy for the treatment of osteosarcoma |
| Post Duration: | Temporary 2 years (up to 31/08/2026) |
| Line Manager | Dr Fiona Freeman |
| Competition Ref. N^o | <i>Completed by HR</i> |
| HR Administrator | <i>Completed by HR</i> |

Position Summary:

Applications are invited from suitably qualified candidates for the position of a full-time 2 year fixed-term position as a Postdoctoral Researcher with Dr. Fiona Freeman's team in Biomedical Engineering at UCD (<https://www.ucd.ie/freemanlab/>).

Osteosarcoma is an aggressive bone cancer that affects children and adolescents, with a 5-year survival rate of less than 20% for resistant forms. The interaction between cancer and the immune system has long been recognized as a critical aspect of chemoresistance. The successful candidate will carry out research on developing and in vitro testing of a conjugated STING-agonist nanoparticle as a potential add-on to chemotherapy for the treatment of chemoresistance. The project requires in-depth knowledge related to immunology and nanoparticle design, as well as in vitro assessments of nanoparticle-mediated therapies. This project is funded by the Science Foundation Ireland (SFI) Frontiers for the Future project, and the position is available from September 2024 with flexibility on the start date.

The successful candidate will have the opportunity to join a dynamic and motivated team investigating the use of innovative engineering techniques to better understand and develop novel therapeutics for treating osteosarcoma, a paediatric bone cancer. The lab's research interests include biomaterial design, 3D printing, developing in vitro and in vivo disease models, nanoparticle design, organ-on-a-chip, and immunoengineering. This position is related to the aim of developing a new nanoparticle-mediated immunotherapy to attack the tumour. It outlines an entirely new concept to treat this debilitating disease. The candidate will be responsible for nanoparticle development, characterization, and 2D and 3D *in vitro* testing of the therapeutic.

This is a research focused role, where you will conduct a specified programme of research supported by research training and development under the supervision and direction of a Principal Investigator. The applicant will work closely with our collaborators in Children's Health Ireland.

The primary purpose of the role is to further develop your research skills and competences, including the processes of publication in peer-reviewed academic publications, the development of funding proposals, the mentorship of graduate students along with the opportunity to develop your skills in research led teaching.



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.
- 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.
- Mentor and assist, as appropriate and as directed, the research graduate students in your group, School and Institute.
- Carry out administrative work associated with your programme of research.

Salary: PD1 €44,347 - €50,805 per annum

Appointment on the above range will be dependent on qualifications and experience

Details on eligibility to compete and pension information is available at

<https://www.ucd.ie/hr/resourcing/eligibilitytocompete/>

UCD welcomes applications from everyone. We are committed to creating an environment where diversity is celebrated and everyone is afforded equality of opportunity. Learn more about Diversity at

<https://www.ucd.ie/workatucd/diversity/>

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 Biomedical Science, Biomedical Engineering, Biochemistry, Immunology, Regenerative Medicine, Pharmacy, Medicine, or Veterinary Medicine.
- A demonstrated commitment to research and publications
- An understanding of the operational requirements for a successful research project
- Evidence of research activity (publications, conference presentations, awards) and future scholarly output (working papers, research proposals, and ability to outline a research project).
- Excellent Communication Skills (Oral, Written, Presentation etc).
- Excellent Organisational and Administrative skills including a proven ability to work to deadlines.
- Candidates must demonstrate an awareness of equality, diversity and inclusion agenda.

The PD1 position is intended for early-stage researchers, either just after completion of a PhD or for someone entering a new area for the first time. If you have already completed your PD1 stage in UCD or will soon complete a PD1, or you are an external applicant whose total Postdoctoral experience, inclusive of the duration of the advertised post, would exceed 4 years, you should not apply and should refer to PD2 posts instead.

Desirable:

Previous Experience in:

- Biophysical characterization of nanoparticles
- Western Blotting
- Histology
- Confocal imaging
- Pre-clinical models
- Cell line and Primary Cell Culture
- Immune cell culture
- Primary Cell Isolation
- Flow cytometry
- RT-qPCR
- Organoid Culture
- Nanoparticle Synthesis
- HPLC-SEC
- Setting own research agenda
- Mentoring students
- Outreach Activities

Supplementary information:

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| The University: | https://www.ucd.ie/ |
| UCD Strategy 2020-2024: Rising to the Future | https://strategy.ucd.ie/ |
| The College/Management Unit: | https://www.ucd.ie/eacollege/ |
| The School/Programme Office/Unit: | https://www.ucd.ie/mecheng/ |
| Equality Diversity and Inclusion at UCD | https://www.ucd.ie/workatucd/diversity/ |
| Other (Please specify): | https://www.ucd.ie/freemanlab/ |

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](#)

To apply please upload application to <https://www.ucd.ie/workatucd/jobs/>