



# School of Pharmacy PhD Projects 2015/16

**Project Title** Enhancing prostate cancer treatments using multi-functional nanoparticles

**Supervisors** Dr Jonathan Coulter, Dr Helen McCarthy

**Description** Eligibility: Applicants must have at least an upper second class degree in Pharmacy, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, or a closely related discipline

Previously we have demonstrated the potential of gold nanoparticles (AuNPs) to promote the tumour cell death by enhancing the effectiveness of radiotherapy. Furthermore, gold nanoparticles possess numerous attractive physical properties that include improved CT imaging for diagnostic purposes, and a low toxicity profile. To date, numerous investigators have focused on delivering nanoparticles to specific intracellular locations such as the nucleus to induce maximum damage. However, the success of this approach has been limited by naturally occurring barriers such as the endosomes.

**This PhD project, will investigate the potential of increasing nanoparticle loading within the outer cell membrane as an alternative approach to stimulating prostate tumor cell death. The appointed candidate will gain technical expertise in molecular biology, in addition to *in vitro* and *in vivo* technologies.**

Further information on the project can be obtained by emailing Dr Jonathan Coulter ([j.coulter@qub.ac.uk](mailto:j.coulter@qub.ac.uk)).

**Start Date** October 2015

**Keywords** Nanoparticles, radiotherapy, prostate cancer

#### Contact Details

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#### How to Apply

Postgraduate applications should be made using Queen's Online:

<http://go.qub.ac.uk/pgapply>

Please note that there are two application processes: one for admission to the university and another for postgraduate awards.

#### Further Information

Additional information for prospective postgraduate students can be found on the School of Pharmacy website:

<http://www.qub.ac.uk/pha>

and the Queen's Postgraduate website:

<http://www.qub.ac.uk/home/ProspectiveStudents/PostgraduateStudents/>

