# PGR Studentship Information Template 2021 entry

* Please complete the template with as much information as possible.
* \*fields are essential.
* If you have information that does not have a label, please create a new row in the table for it.

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| **\*Title of studentship** | Investigation of novel protease-antiprotease imbalances associated with chronic airways disease. |
| **Value / what is covered?** | Eligible students may compete for a Department of the Economy (DfE), Northern Ireland studentship which would be fully funded for three years, covering 100% of the UK/EU postgraduate tuition fee (currently £4,407 per annum) and a living stipend (currently £14,777 per annum). Applications from self-funding non-UK/EU nationals are also welcome, although, if successful, these applicants would, in addition to their living/maintenance costs, have to cover the additional costs associated with the international tuition fee (currently £21,300 per annum). |
| **Awarding body** | This PhD project is eligible for consideration for a Department of the Economy (DfE), Northern Ireland studentship. Self-funding students also welcome to apply. |
| **Number of studentships** | 1 |
| **\*Summary descriptive text / Example of research project** | Chronic obstructive pulmonary disease (COPD) is a progressive airways diseases associated with cycles of infection and inflammation, lung tissue destruction and pulmonary decline. Intensive management needs and frequency in hospitalization give rise to significant treatment costs (UK £4.7 bn & USA $42.6 bn pa). New therapies targeting some of the specific cellular processes associated with COPD could help improve both lung function and quality of life which would also reduce hospital admissions.  COPD is an umbrella terms for a range of conditions to include chronic bronchitis (inflammation) and emphysema. A protease-antiprotease imbalance associated with chronic inflammation and neutrophilic infiltration is well established in COPD. To date, however, most attention has focussed on the neutrophil serine protease, neutrophil elastase and its endogenous inhibitor, alpha1 antitrypsin (AAT), also known as serine protease inhibitor A1 (serpinA1). Indeed, a genetic deficiency of AAT is a risk factor for the development of early onset COPD giving rise to aberrant levels of elastase activity which can inflict significant damage to the aveolar tissue impairing gas exchange (emphysema).  Recent work in our lab has shown that in addition to serpinA1, a number of other serpins are expressed which can inhibit a range of physiologically relevant proteases in the airways. This project will thereore progress these studies to yield valuable insight into as yet undisclosed functions of these serpins in the airways. These serpins have the potential to be critical regulators of protease activity in the lungs, down-regulation of which would contribute the protease-antiprotease imbalance which plays a significant role in the progressive destruction of lung tissue.  These studies directly align to the strategic research interests of the Martin group and research collaborators and provide opportunity for the successful applicant to benefit from the significant expertise of the research group. |
| **\*Supervisor(s)** | The project will be primarily supervised by Professor Lorraine Martin, School of Pharmacy, Queen's University Belfast. Details and online profile are provided below.  <https://pure.qub.ac.uk/en/persons/lorraine-martin> |
| **\*Eligibility / residence Status** | For DfE Awards, eligibility restrictions apply.  Self-funders: no restrictions. |
| **Country** | School of Pharmacy, Medical Biology Centre, Queen's University Belfast, Northern Ireland, UK, BT9 7BL. |
| **\*Start date and duration** | 1st October 2021 |
| **\*Faculty** | Medicine, Health & Life Sciences (MHLS) |
| **\*Research centre / School** | School of Pharmacy |
| **Subject area** | Chronic airways diseases to include protease biochemistry & airway physiology. |
| **Candidate requirements / Key skills required for the post** | Applicants should have a 1st or high 2.1 (>67%) honours degree (or equivalent) in a relevant subject. Relevant subjects include Biochemistry, Pharmaceutical Biotechnology, Molecular Biology, Physiology, Biological/Biomedical Sciences or a closely related discipline. Students who have a 2.2 honours degree and a Master’s degree may also be considered, but the School reserves the right to shortlist for interview only those applicants who have demonstrated high academic attainment to date  **For international applicants:** Evidence of an IELTS\* score of 6.0, with not less than 5.5 in any component, or an equivalent qualification acceptable to the University is required. |
| **\*Deadline for applications** | For student eligibile for consideration of a DfE award please see the school website for details of closing dates.  Open call for candidates able to self-fund. |
| **\*How to apply / contacts** | Postgraduate Research applicants for Pharmacy who are interested in applying for a fully funded DfE studentship must have applied to Queen’s, via the Direct Applications Portal, and submitted all required supporting documents by the closing date, which will be announced later in the Academic year.  <https://dap.qub.ac.uk/portal/user/u_login.php>  If you need further information on the project, please email Prof. Lorraine Martin at [l.martin@qub.ac.uk](mailto:l.martin@qub.ac.uk) |
| **Relevant links / more information** | General information about the research activities at the School of Pharmacy, Queen's University Belfast are available at the link below:  [Professor Lorraine Martin\_School of Pharmacy, QUB](https://pure.qub.ac.uk/portal/en/persons/lorraine-martin(60b109e2-c34a-47f6-8ec7-7eda01dbdb20).html)  <http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/>  <http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/> |
| **Keywords for search filters** | lung, respiratory, airways, COPD, proteases, cell biology, molecular biology, biochemistry, electrophysiology, |
| **Training provided through the research project** | The successful applicant will join a well-resourced, multi-disciplinary team focussed on collaborative, translational research. The project will include use of gold standard *ex vivo* models of primary human airways epithelial cells cultured at air-liquid interface and will offer expert training in a wide range of cell, biochemical, molecular and imaging techniques. |
| **Expected impact activities** | Students are expected to present at a minimum of one national and international meeting during their training and make a contribution to internationally excellent research outputs. Participation in our on-going school’s outreach programme on lung health and/or science festivals will be encouraged. |