

## Information on Postgraduate Research Scholarship - Ref: VCS-ACH-02-17

**Faculty:** Faculty of Architecture, Computing and Humanities    **Department:** Mathematical Sciences

**Lead Supervisor:** Peter Lawrence

**Project Title:** Representing the Movement of Devices within Evacuation Simulation Models

### **Project Description:**

In circulation and evacuation situations people often must manoeuvre devices. These can be: baggage trolleys, roller bags, push chairs, wheel chairs, evac+chairs, stretchers, etc. The presence of these devices will have a profound impact on both normal circulatory and evacuation dynamics, in particular when assist devices are used in the evacuation of people with reduced mobility (PRM) down stairs. However, currently these devices are only crudely represented, if at all, within evacuation models. Clearly, there is a need to represent movement devices within evacuation models, particularly for planning hospital evacuation, the evacuation of PRM in multi-floor buildings and the evacuation of airports, rail stations and shopping complexes where people may be encumbered with baggage.

This project will address this issue through the development of a capability within the building EXODUS evacuation model to represent these devices and the impact they have on both pedestrian and evacuation flows. The project will utilise data FSEG has collected on the impact of these devices on pedestrian and evacuation flows from earlier projects (CPNI Bollard Project and PRM evacuation project). The movement capability of the devices will include horizontal and vertical movement, with and without crowds including situations involving bi-directional flow.

**Duration:**                      **3 years, Full-Time Study**

### **Bursary available (subject to satisfactory performance):**

Year 1: £14,553

Year 2: In line with RCUK rate

Year 3: In line with RCUK rate

In addition, the successful candidate will receive a contribution to tuition fees equivalent to the university's Home/EU rate, currently £4,195, for the duration of their scholarship. International applicants will need to pay the remainder tuition fee, currently £8,305, for the duration of their scholarship. This fee is subject to an annual increase.

<b>Person Specification of Essential (E) or Desirable (D) requirements:</b>	
<b>Criteria:</b>	<b>E or D</b>
<b>Education and Training:</b>	
<ul style="list-style-type: none"> <li>1<sup>st</sup> Class or 2<sup>nd</sup> class, First Division (Upper Second Class) Honours Degree or a taught Master's degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, unless the degree above was taught in English <b>and</b> obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.</li> </ul>	<b>E</b>
<b>Experience &amp; Skills:</b>	
<ul style="list-style-type: none"> <li>Previous experience of undertaking research (e.g. undergraduate or taught masters dissertation)</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Evidence of software development as part of an academic, research or professional project.</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Knowledge of mathematical techniques related to geometry, such as trigonometry, vectors and parametric curves.</li> </ul>	<b>D</b>
<ul style="list-style-type: none"> <li>An understanding of computer algorithms, such as Agent Based Models and/or other AI techniques</li> </ul>	<b>D</b>
<b>Personal Attributes:</b>	
<ul style="list-style-type: none"> <li>Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>Able to, under guidance, complete independent work successfully</li> </ul>	<b>E</b>
<b>Other Requirements:</b>	
<ul style="list-style-type: none"> <li>This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA</li> </ul>	<b>E</b>
<ul style="list-style-type: none"> <li>The scholarship must commence before 29 September 2017</li> </ul>	<b>E</b>

**Closing date for applications: *midnight UTC on 30 June 2017***

**For further information contact: Peter Lawrence      Email: [P.J.Lawrence@greenwich.ac.uk](mailto:P.J.Lawrence@greenwich.ac.uk)**

**Making an application:**

Please read this information before making an application. Information on the application process is available at: [http://www2.gre.ac.uk/research/study/apply/application\\_process](http://www2.gre.ac.uk/research/study/apply/application_process) . Applications need to be made online via this link. **No other form of application will be considered.**

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (Ref)**– included in the personal statement section together with your personal statement as to why you are applying
- **a CV including 2 referees \***
- **academic qualification certificates/transcripts and IELTS/English Language certificate if you are an international applicant or if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency \***

*\*upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application you are encouraged to liaise with the Lead Supervisor on the details above.