



## Institute of Technology

### Ciência sem Fronteiras / Science Without Borders

#### Postgraduate Project Template

<b>Institution:</b>	Athlone Institute of Technology
<b>Title of Postgraduate Opportunity:</b> (include level of study)	MSc – Masters A multi-disciplinary evaluation of Occupational Stress Response and Adaptation in Irish Firefighters
<b>PI Name &amp; Contact Details:</b>	Ms. Chris McCormack +353 090 6471880 cmccormack@ait.ie
<b>Department/School:</b>	School of Life & Physical Sciences
<b>Research Centre /Group:</b>	Biosciences Research Institute
<b>Research Centre/Group website:</b>	<a href="http://www.ait.ie/bri">www.ait.ie/bri</a>
<b>Brief Summary of PI research / research group /centre activity</b> Ms Chris McCormack is linked to the Biosciences research Institute and is currently preparing her own PhD in this area. Chris has vast experience with industry having worked with over 800 companies both private and public along with voluntary organisations.	
<b>Brief Description of Masters or PhD Project</b> A multi-disciplinary evaluation of Occupational Stress Response and Adaptation in Irish Firefighters. Numerous qualitative studies demonstrate that firefighters suffer from severe occupational stress, a forerunner of many chronic mental and physical illnesses. Quantifying firefighters stress response to environmental, cognitive and psychogenic stressors is complex; conventional sensors are bulky, the working conditions are extreme and Personal Protective Equipment impedes fitting. The National Fire Training Institute, administrated by Dublin Fire Brigade will provide the sample population and test centre. The institute has designed its professional training programme, including stress adaptation tasks, to best practice guidelines in an effort to preserve wellbeing amongst staff. Biosensor technology developed largely for the medical, therapeutic and elite sports field will be piloted and utilised to map physiological response in fire-fighters during prescribed physical tasks and conditions followed by exposure to psychosocial risk in emergencies. This data will be quantitatively and qualitatively analysed. The empirical data obtained will distinguish between physiological and psychosocial stress response and demonstrate fire-fighter adaptation to stressors. The outcomes should aid policy making within Irish Fire Services regarding recruitment procedure, prescribing training and health surveillance required for	

employee protection from the noxious health effects of psychogenic stress.

**Key Attributes of Project for Brazilian Postgraduate Students**

This project offers a cross discipline opportunity between science and social science. It is a topic of interest across the world and can have application and comparison with other countries i.e. Brazil. The project will be carried out in conjunction with national and international agencies, along with other academic and industry partners.

**Name and contact details for project queries, if different from PI named above:**

Office of Research – [awatts@ait.ie](mailto:awatts@ait.ie)

PI – Ms. Chris McCormack - [cmccormack@ait.ie](mailto:cmccormack@ait.ie)

**Please indicate graduate disciplines which are eligible for application:**

**Second class honours degree grade 2 in the Health sciences, biosciences**

**Alignment with Science Without Borders Priority Areas:**

Please indicate the specific programme priority area under which the proposed postgraduate project fits – choose only one (tick box)

Engineering and other technological areas	
Pure and Natural Sciences (e.g. mathematics, physics, chemistry)	
Health and Biomedical Sciences	x
Information and Communication Technologies (ICTs)	
Aerospace	
Pharmaceuticals	
Oil, Gas and Coal	
Renewable Energy	
Minerals	
Biotechnology	x
Nanotechnology and New Materials	
Technology of prevention and remediation of natural disasters	
Biodiversity and Bioprospection	
Marine Sciences	
Creative Industry	
New technologies in constructive engineering	