***HEA Funded TU4D INITIATIVE***

**Research Masters Scholarships - September 2018 Start Date**

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| **Supervisor Name & Contact Details:** | Name: **Dr Fintan Kelleher (Co-supervisor – Dr Goar Sánchez-Sanz of ICHEC**)  Tel: **01-4042869** Email: **fintan.kelleher@it-tallaght.ie** | |
| **Scholarship Details** | Candidates appointed under ***HEA Funded TU4D INITIATIVE 2017*** will qualify for a Scholarship providing a 24 month stipend for the student of €10,000 Per Annum and full EU college fees\* for 2 years.  \**Note: Non-EU students must pay an additional non-EU postgraduate fee per annum* | |
| **Subject Area** | **Computational Chemistry & Biology** | |
| **Project Code & Title of the Project** | **PHEA1701 - Using Computational Methods to Improve the Therapeutic Potential of new Antibiotics to address the Antimircobial Resistance (AMR) Crisis** | |
| **Project Description (max 300 words)**  **Antimicrobial resistance (AMR)** is a major societal and public-health challenge facing the world. Of particular concern are the clinically-relevant highly resistant bacteria, which have been identified by the WHO in September 2017, as being on the **critical priority list of pathogens**. Therefore, a concerted effort in identifying new antibiotics is essential in addressing this issue and specific families of peptides, such as the **lantibiotics** and **thiopeptides**, demonstrate great promise. One lantibiotic, Nisin, has been used globally as a food-preservative for decades. It is highly active against food-borne pathogens, but most importantly with little resistance having developed in its >50 years of use. However, it is not stable at pH 7.4 (physiological pH), which limits its potential for use as a human therapeutic.  The two families of peptides can show low stability in the human body due primarily to reactive/unstable parts within their structures. The project involves the use of the significant computational resources of the Irish Centre for High-End Computing (ICHEC) to study in detail these reactive parts with a view to firstly understanding and then addressing the reasons for this instability. One research outcome will be a plan for stabilising these important biologically active peptides. Currently, the reactive parts mentioned above are being used to generate sites within proteins where changes can be made to the proteins in living systems, but to-date the changes are being made non-selectively. These changes are used to understand protein structure, function and for the generation of new therapies for exploitation by the Biopharmaceutical industry. The results from this proposed project will also help to generate a predictive model which will allow a more precise design process to be used for new protein derivatisation methods.  The project will be based in IT Tallaght and will be co-supervised by Dr Goar Sánchez-Sanz of ICHEC | | |
| **Please indicate the student requirements for this project:**  Eligible candidates will hold an honours degree with a minimum grade of 2nd class honours grade 2 (H2:2) in Chemistry, Medicinal Chemistry, Chemical Biology, Computational Chemistry/Biology or Pharmaceutical Science.  If from a non-English speaking country, have an IELTS score of >6.0 or equivalent at the time of application. | | |
| **Deadline to submit applications** | | Friday 1st June 2018 @ 13:00 |
| **Sponsoring Department Name: Department of Science** | | |

Applicants must fill in the application form and return it to [researchadministration@it-tallaght.ie](mailto:researchadministration@it-tallaght.ie)

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| **CONTACT DETAILS** | | |
| **Name:** |  | |
| **Address:** |  | |
| **Email:** |  | |
| **Mobile:** |  | |

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| **PRIMARY DEGREE QUALIFICATIONS**  ***Please attach copies of FINAL transcripts of results / Parchment. For non-nationals, please provide evidence of competency in English language – an IELTS score of >6.0 or equivalent is required.*** | |
| **Degree title:** |  |
| **College & Location:** |  |
| **Years *from - to*:** |  |
| **Level of Award:** |  |
| **Place in class if known:** |  |
| **Final Year Project Title:** |  |
| **Key skills developed in your degree programme:** |  |
| **POSTGRADUATE QUALIFICATIONS**  ***Please attach copies of FINAL transcripts of results / Parchment. For non-nationals, please provide evidence of competency in English language – an IELTS score of >6.0 or equivalent is required.*** | |
| **Degree title:** |  |
| **College & Location:** |  |
| **Years *from - to*:** |  |
| **Level of Award:** |  |
| **Research Project Title:** |  |
| **Key skills developed in your degree programme:** |  |

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| **OTHER RELEVANT QUALIFICATIONS** | |
| **List qualification:** |  |
| **Duration & Year of award:** |  |
| **Relevance to the position applied for:** |  |

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| **MOST RECENT WORK EXPERIENCE** | |
| **Position held:** |  |
| **Responsibilities:** |  |
| **Period *from - to*:** |  |
| **Relevance to the position applied for:** |  |
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| **Position held:** |  |
| **Responsibilities:** |  |
| **Period *from - to*:** |  |
| **Relevance to the position applied for:** |  |
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| **Position held:** |  |
| **Responsibilities:** |  |
| **Period *from - to*:** |  |
| **Relevance to the position applied for:** |  |

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| **WHAT ARE THE KEY / CORE COMPETENCIES YOU POSSESS RELEVANT TO THIS PROJECT AREA? *List the top 5*** | |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

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| **Provide a brief personal statement on why you are the best candidate for this project**  *(250 words only – persons exceeding this may be disqualified from the process)* |
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| **Referees** *- provide names and contact details for two independent persons who can attest to your suitability for this postgraduate research project (note: referees may be contacted without your consent)* | | | |
| **Name** |  | **Name** |  |
| **Address** |  | **Address** |  |
| **Email** |  | **Email** |  |
| **Mobile** |  | **Mobile** |  |

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| **Availability – the following questions relate to your availability and requirements for a study visa** | |
| **What is your Nationality?** |  |
| **Do you hold a student visa to allow study in Ireland?** |  |
| **Will you be available to start Sept. 2016?** |  |

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| **Signed:** |  |
| **Date:** |  |

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| **Documents to include with your application: *tick if attached*** | |
| * **Copy of your final degree award certificate or official transcript of final examination results\*** |  |
| * **Copy of IELTS certificate (must be >6.0) *or equivalent\**** |  |

*\* If offered a post-graduate place, original copies must be provided before student registration can be completed; failure to provide them will result in any offer of a studentship being withdrawn.*