



<b>College   Management Unit:</b>	UCD College of Business
<b>School   Unit:</b>	UCD School of Business
<b>Post Title &amp; Subject Area (if relevant)</b>	<b>UCD Post-doctoral Research Fellow Level 2</b>
<b>Project:</b>	SFI -NexSys Programme
<b>Post Duration:</b>	16 months
<b>Line Manager</b>	Assoc Prof Paula Carroll
<b>Competition Ref. N<sup>o</sup></b>	017179
<b>HR Administrator</b>	Yasemin Ozdemir

**Position Summary:**

The decarbonisation of the Energy System will play a vital role in reducing greenhouse gas emissions and help mitigate the impacts of Climate Change. The technical and societal challenges inherent in decarbonisation are set to be enduring challenges of the mid-21st century and ones that will require a whole of society approach, encompassing academia, industry, government, and citizens.

NexSys is an All Island of Ireland Science Foundation of Ireland Strategic Partnership Programme focussed upon the transition to a net zero carbon energy system. It is a unique partnership bringing together a multidisciplinary research team, industry, and policy makers to tackle fundamental research questions to be addressed as part of the transition to net Zero. Hosted by UCD Energy Institute, NexSys brings together academics from nine institutions across the Island of Ireland (UCD, TCD, DCU, ESRI, Maynooth University, UCC, NUI Galway, Ulster University and the Queen's University of Belfast) to work together to meet the unprecedented scale and complexity of the challenges associated with the energy transition.

Transport is a key challenge in the clean energy transition. There is a need to design business models and support systems for flexible, clean, secure transport services. Improved decision support and better design options for green transport will lead to reduced pollution and contribute to transport electrification targets. We aim to support a green fleet on the street by optimising and integrating low emission and electric vehicle solutions for last mile logistics.

This project is part of the Transport stand and aims to demonstrate innovative optimisation algorithms and technologies to achieve net Zero in the transport sector through a green fleet serving last mile operations. The research will deliver and evaluate optimisation models. The successful candidate will analyse the integration of electrified last mile operations with the grid and as a transport system service.

This is an advanced academic research role, building on your prior experience as a post-doctoral fellow, where you will conduct a specified programme of research supported by research training under the supervision and direction of a Principal Investigator.

The primary purpose of the role is to develop new or advanced research skills and competences, on the processes of publication in peer-reviewed academic publications and scholarly dissemination, the development of funding proposals, and the supervision and mentorship of graduate students along with the opportunity to develop your skills in research led teaching.

In addition to the Principal Duties and Responsibilities listed below, the successful candidate will also carry out the following duties specific to this project:

- 1) define green transport and last mile logistics business models;

- 2) create appropriate optimisation algorithms and/or decision support solutions to support last mile electric or minimum energy (or emissions) vehicle routing;
- 3) support PhD students to assess the impact and energy requirements of recommended solutions on the grid;
- 4) work with interdisciplinary researchers in the NexSys transport strand to test and evaluate the energy and environmental impact of their vehicle routing solutions.

**Principal Duties and Responsibilities:**

- Conduct a specified programme of research and scholarship under the supervision and direction of your Principal Investigator.
- Engage in appropriate training and professional development opportunities as required by your Principal Investigator, your School or Institute, or the University.
- Support your Principal Investigator and research group in the design and development of the research programme.
- Support if required, the development of proposals for research funding.
- Engage in the dissemination of the results of the research in which you are engaged as directed by and with the support of and under the supervision of your Principal Investigator.
- Engage in the wider research and scholarly activities of your research group, School and Institute.
- Take responsibility as requested for day-to-day advice and support of graduate research students associated with your research group.
- Mentor and assist, as appropriate and as directed, the research graduate students in your School and Institute.
- Carry out administrative and management work associated with your programme of research.

**Salary: €50,540 per annum**

Appointment on the above range will be dependent on qualifications and experience

Details on eligibility to compete and pension information is available at

<https://www.ucd.ie/hr/resourcing/eligibilitytocompete/>

UCD welcomes applications from everyone. We are committed to creating an environment where diversity is celebrated and everyone is afforded equality of opportunity. Learn more about Diversity at

<https://www.ucd.ie/workatucd/diversity/>

**Selection Criteria**

Selection criteria outline the qualifications, skills, knowledge and/or experience that the successful candidate would need to demonstrate for successful discharge of the responsibilities of the post. Applications will be assessed on the basis of how well candidates satisfy these criteria.

### Mandatory:

- PhD in Operations Research, Applied Maths, Computer Science, Business Analytics, Engineering or similar
- 2/3 years postdoctoral research experience
- Demonstrated understanding of operational requirements for a successful research project and managing resources
- Knowledge and application of the principles underpinning successful grant application
- Proven ability to identify and fulfil the academic writing requirements for target publications
- Proven record of working with team members and PhD students to help build their research skill and knowledge and to support and guide their professional development
- Generates new ideas and links and builds upon existing ideas to generate unique concepts and solutions
- Candidates must demonstrate an awareness of equality, diversity and inclusion agenda
- Experience using optimisation approaches such as Mixed Integer linear Programming, Metaheuristics and/or statistical or machine learning for vehicle routing.

The PD2 post is intended for researchers that have completed PD1. As with the PD1, if you have already completed your PD2 stage in UCD or will soon complete a PD2, or your total Postdoctoral experience, inclusive of the duration of the advertised post, would exceed 6 years, you should not apply and should refer to Research Fellow posts instead.

### Desirable:

- Experience in or exposure to energy systems or grid operations
- Experience using open source data and platforms such as OpenStreetMap
- Demonstrated understanding of the value of academic and commercial information e.g. Non-disclosure agreements
- Knowledge of IP and copyright processes and knows how to protect findings

### **Supplementary information:**

*Unless otherwise specified, URLs to the relevant home page(s) will be inserted by HR.*

The University:	<a href="https://www.ucd.ie/">https://www.ucd.ie/</a>
UCD Strategy 2020-2024: Rising to the Future	<a href="https://strategy.ucd.ie/">https://strategy.ucd.ie/</a>
The College/Management Unit:	
The School/Programme Office/Unit:	
Equality Diversity and Inclusion at UCD	<a href="https://www.ucd.ie/workatucd/diversity/">https://www.ucd.ie/workatucd/diversity/</a>
Other (Please specify):	<b>PI could include a link to the relevant funding agency if appropriate.</b>

UCD offers a comprehensive **Research Careers Framework** in line with the Advisory Science Council Report ‘*Towards a Framework for Researcher Careers*’. This model provides a structured and supportive **Career and Skills Development** system designed to ensure that Post-docs in UCD are able to plan their careers and prepare for future opportunities in academia, industry or the public sector. For more information, please [click here](#)

### **Informal Enquiries ONLY to:**

Please note this section is optional. Applications will be addressed to an assigned HR administrator.

Name:	
Title:	
Email address:	
Telephone:	