CONNECT
SFI Research Centre for Future Networks

HOST INSTITUTION
Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

PARTNER INSTITUTIONS
MTU · DCU · Maynooth University · DUBLIN · Tyndall · UCC · University College Dublin An Coláiste Ollscoile, Baile Átha Cliath · UNIVERSITY OF LIMERICK · SETU

Potential Research Area	Mentor/Supervisor (HEI)	Additional Information
• Optical and Wireless networks • Blockchain for Networks • SDN and network Virtualisation • Economics of Telecommunication Networks	Asst Prof. Nima **Afraz** (UCD)	See https://people.ucd.ie/nima.afraz or https://nima.ie. The Fellow will be based in UCD's School of Computer Science and join Nima's existing research team of two PhD students. The fellow will have the opportunity to contribute to the ongoing proposals and will have access to UCD's Training and Development for Postdoctoral Researchers.
• Machine/reinforcement learning for sustainable mobility • Middleware for connected and autonomous vehicles	Vinny **Cahill** (TCD)	See https://www.scss.tcd.ie/Vinny.Cahill/. The Fellow will be based in TCD's School of Computer Science and Statistics and join Vinny's existing research team working on reinforcement learning and middleware for sustainable mobility. The team has a long track record of collaborations with Irish and international companies. Vinny has previously mentored 18 Research Fellows (of which 2 were MSCA funded) who have gone on to have successful careers in industry, as company founders, or in academia.
• decarbonising transport • connecting sustainable transport	Brian **Caulfield** (TCD)	See https://people.tcd.ie/Profile?Username=caulfib. The Fellow will be based in TCD's School of Engineering and join Brian's existing research team.
• Reinforcement Learning (RL) in Wireless Communications (UAV/vehicular networks, energy efficiency in sensor networks, RL at the edge, etc • Explainable RL • RL in Intelligent Mobility	Ivana **Dusparic** (TCD)	See https://scholar.google.com/citations?hl=en&user=CrGGAccAAAAJ&view_op=list_works&sortby=pubdate for Ivana's recent publications in these areas of interest. The Fellow will be joining Ivana's current team of 8 PhD students and 2 postdoctoral fellows working on developing novel RL algorithms and their applications in large-scale infrastructures.
• Wireless & mobile vehicular networks • Cooperative communication protocols • Intelligent data driven decision making for vehicular networking • Wireless networking to support cooperative communications for Industrial AGVs	Aisling **O'Driscoll** (UCC)	See https://www.ucc.ie/en/misl/people/aislingodriscoll/. The Fellow will be based in UCC's School of Computer Science and join Aisling's growing research team. Aisling leads CONNECT's involvement in the Science Foundation Ireland (SFI) funded, Blended Autonomous Vehicles (BAV) programme and co-leads the CAV working group in CONNECT.

• Connectivity for the Internet of Things, e.g. LoRa, NB-IoT, 5G • Time sensitive networking for industrial applications • Edge computing based machine learning for wireless networks	Prof. Dirk **Pesch** (UCC)	See http://research.ucc.ie/profiles/D005/dirk.pesch@ucc.ie and https://scholar.google.com/citations?hl=en&user=5Rx1K5IAAAAJ. The Fellow will be based in UCC's School of Computer Science and Information Technology and join Dirk's existing research team of five postdocs/research fellows and 10 PhD students. The team are currently involved in two SFI Research Centres, CONNECT Centre and CONFIRM Centre, and the SFI Centre for Research Training in Advanced Networks. We also have a number of active collaborations with Irish and international companies. Dirk has previously mentored 3 Postdoctoral Researchers funded under MSCA, has mentored over 20 research staff and 30 PhD students over the past 20 years, with all of them now in either industry or academic positions in Ireland, EU, US, Canada, India, Indonesia, etc.
• Sustainable battery energy storage materials & devices • Sensor integration for battery health analysis	James **Rohan** (Tyndall National Institute)	See https://www.tyndall.ie/people/james-rohan/, http://research.ucc.ie/profiles/E026/james.rohan@tyndall.ie. The Fellow will be based in James' "Electrochemical Materials and Energy research group" at Tyndall which currently consist of two postdoctoral researchers and four PhD students. The team are currently involved in active collaborations with Irish and international companies. James has previously mentored three Postdoctoral Researchers funded under MSCA: two have taken up academic positions (one in the EU, the other in the US), another is working in industry. Aligned with the focus in CONNECT of Sustainable IoT device development and deployment we are interested in hearing from researchers interested in 1) sustainable battery materials development that can be integrated with energy harvesting devices for long life and sustainable electronics, and 2) the development of micro or nanoscale sensors for integration and battery health analysis. The MSCA fellow will be part of a large group working towards sustainable IoT devices and systems and gain significant experience by collaborating across groups within Tyndall and nationally through the participants in CONNECT's Sustainable IoT network.
Wireless networking from MAC layer to application layer including • unmanned autonomous vehicles (UAVs) • video streaming over cellular • Use of machine/deep learning in wireless networks	Prof. Cormac **Sreenan** (UCC)	See http://research.ucc.ie/profiles/D005/csreenan. The Fellow will be based in UCC's Mobile & Internet Systems Lab (MISL) which is led by Prof. Sreenan. This is a research group of about a dozen people focused on mobile and multimedia networking with collaborations with Irish and international companies. Cormac has mentored 4 Postdoctoral Researchers funded under MSCA.

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• Network Security • Applied Cryptography • Blockchains • Decentralized Networks • Mobile Communications Security • Connected and Autonomous Vehicle Security	Hitesh **Tewari** (TCD)	The Research Fellow will be based in TCD's School of Computer Science and Statistics and join our small research group. A list of my recent publications can be found here: https://www.researchgate.net/profile/Hitesh-Tewari/research and a link to my Google Scholar page can be found here: https://scholar.google.ca/citations?user=2oIU7q0AAAAJ&hl=en.
• Optimisation techniques for wireless communications • Joint radar and communication • Intelligent surfaces • Energy-efficient communications • Open-RAN	Nam **Tran** (UCD)	See https://people.ucd.ie/nam.tran. The Fellow will be based in UCD's School of Electrical and Electronic Engineering and integrate into the Communication and Signal Processing Group at UCD which has diverse expertise in wireless communications. The Fellow with receive swift and dedicated support from the Mentor on all problems and will also have opportunities to collaborate with reputed researchers in the field and receive valuable guidance for career development. During the writing stage, the Fellow will receive massive support from the Mentor and also from the Research Office at UCD to create a winning proposal.
• Autonomous and Self-Organising Networks • Communications for Biology • PHY Algorithms and MAC Protocols • Quantum Communications and Networks	Nicola **Marchetti** (TCD)	See https://nicolamarchetti.wordpress.com/. The Fellow will be based in TCD's School of Engineering and join Nicola's existing research team of two postdoctoral researchers and five PhD students. The team are currently involved in active collaborations with Irish and international companies, and focus on both fundamental and more practically oriented research. Nicola has previously mentored 4 Postdoctoral Researchers which funded under MSCA: all of them went on to become professors in Ireland, Poland, and the Netherlands.
• Applied electromagnetics • B5G/THz wireless communications • Multiphysics and multiscale modelling • Antenna & RF/mmWave design	Xingqi **Zhang** (UCD)	See https://people.ucd.ie/xingqi.zhang. The Fellow will be based in UCD's School of Electrical & Electronic Engineering and join an existing research team of postdoctoral researchers, PhD and Master students. The team are currently involved in a variety of research council and industry-funded projects, and are actively collaborating with many world-leading universities and companies.