

## Candidate Information

<b>Position:</b>	Research Fellow
<b>School/Department:</b>	Mathematical Sciences Research Centre
<b>Reference:</b>	22/110235
<b>Closing Date:</b>	Monday 10 October 2022
<b>Salary:</b>	£35,333 per annum
<b>Anticipated Interview Date:</b>	Friday 21 October 2022
<b>Duration:</b>	Fixed term for 16 months

### JOB PURPOSE:

The post-holder will be a highly productive, ambitious and collaborative member of SPECTATOR research project/team, assisting in the planning, development and delivery of the research led by Dr Salissou Moutari in modelling, control, analysis and optimisation of road traffic flow in transportation networks in co-ordination with our collaborators from Trinity College Dublin and University College Dublin.

### MAJOR DUTIES:

1. Develop and calibrate mixed-traffic models including legacy vehicles, electric vehicles (EVs) and connected autonomous vehicles (CAVs).
2. Perform rigorous controllability analysis of mixed-traffic flow and derive an optimised transportation network involving mixed-traffic flow.
3. Develop models for optimal allocation of charging infrastructures within transportation networks.
4. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to the area of research.
5. Produce high quality research outputs consistent with project aims and commensurate with career stage. This will include collaborating and co-authoring with the project team on outputs.
6. In consultation with the project team, promote research milestones and outputs at national and international conferences as well as through social media.
7. Assist the grant holder in the preparation of funding proposals and applications to external bodies.
8. Carry out routine administration task associated with the research project and ensure that these are completed on time and within budget. These might include the organisation of project meetings/events and documentation, financial control, risk assessment of research activities.
9. Carry out occasional undergraduate supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.

### ESSENTIAL CRITERIA:

1. Have or be about to obtain a relevant PhD such as in applied mathematics, operational research, engineering, computer sciences or related areas.
2. At least 3 years relevant research experience including:
  - Undertaking research in road traffic modelling, control, optimisation/management of transportation networks/systems.
  - A proven track record of developing models and validating them using experimental data
  - Working effectively as part of a research team in the development and promotion of the research theme.
3. Strong publication records commensurate with stage of career.
4. Demonstrable ability to:
  - Contribute to broader management and administrative processes.
  - Contribute to the School's outreach programme by links with industry, community groups etc.
5. Practical problem-solving skills, independence of thought and initiative.
6. Ability to assess and organise resources.

7. Ability to communicate complex information in English effectively in oral and written format.
8. Ability to build relationships to develop internal and external networks.
9. Commitment to continuous professional development.

**DESIRABLE CRITERIA:**

1. Experience of translating research findings into educational materials.