



**Job Title:** Research Associate

**Grade:** 7

**Salary:** £34,804 to £40,322 per annum

**Department:** Informatics

**Hours/Contract:** Full time, fixed term contract for 2 years

**Reference:** 1426

## Role Purpose

To undertake research investigations in collaboration with and under the supervision of Professor Edmund Burke for the EPSRC funded project “Mathematical Models and Algorithms for allocating scarce airport resources (OR-MASTER) EP M020258/1.

The objectives of the project are to:

- Develop novel mathematical models and solution approaches to transform the airport slot allocation process and its associated outcomes for single airports and a network of airports.
- Provide a test-bed for the development of new heuristics and hyper heuristics for large scale complex scheduling problems arising in transportation and other networks.
- Develop algorithms that will be tested by this project and will provide essential support for the complex large scale capacity allocation problems that arise in other types of transportation networks, including rail networks.

## Main Duties and Responsibilities

- Contribute towards the research programme under the direction of Professor Burke, being responsible for undertaking/leading on day-to-day outcomes of specific sub stands of the project. This will include working in a cooperative manner with the OR-MASTER research team at QMUL and Lancaster University and other stakeholder groups for this project.
- Prepare reports of appropriate research results for public presentation through seminars and conferences. Contribute to writing papers summarising research findings for publication in peer-reviewed journals (of high international standing where possible). Contribute to other reports where necessary.
- Comply with any requirements of the awarding authority.
- Conduct empirical research as required by the research programme.
- Collect data and undertake any appropriate analysis of data as requested.
- Maintain appropriate databases, keeping accurate written and computerised records and to ensure that these records are stored in a secure place, and to maintain confidentiality of all electronically stored personal data in line with the provisions of the Data Protection Act.
- Attend regular meetings and workshops with the research team and investigators as required.
- To attend and participate in the School’s academic activities.





- Undertake literature and database searches for the research project, and to be able to interpret and present the findings of the literature searches and advise the research teams appropriately regarding potential projects as required by the line manager/supervisor/PI.
- Keep up to date with subject related and professional issues, in particular, developments in the specific subject area.
- To undertake certain housekeeping responsibilities, the nature of which will be discussed and allocated by Professor Burke depending on project needs and best use of skills/availability.
- Comply with relevant College policies and regulations with due regard to financial matters, harassment, equal opportunities, public interest disclosure, health and safety, intellectual property and patenting, data protection or any other rules, regulations or codes binding on the member of staff.
- To show a professional attitude to matters of laboratory hygiene, organisation and safety, and to observe and to take an active role in fulfilling all statutory health and safety regulations.
- To ensure that all research is undertaken according to good research practice and guidance, such as Good Clinical Practice (GCP), / Good Laboratory Practice (GLP),/ College and Trust protocols.

### Internal and External Relationships

Establish and maintain relationships in order to collaborate with researchers and academics in own team, within the School and outside the School within the College when necessary.

To work with students.

Work with external collaborators as agreed with the Supervisors.

Providing, receiving and presenting complex information to a large group of people.

### Planning and Organising

Plan research activity as outlined in the project proposal.

### Qualifications, Knowledge and Experience

#### Essential

- Have (or be about to receive) a PhD degree in Computer Science, Operational Research, Mathematics or a related discipline\*
- Undergraduate degree in relevant subject or equivalent experience\*
- Experience in computer-aided modelling in the air transport industry\*
- Strong track record of research in computational search\*
- Working knowledge of computational search methods\*
- Understanding of the research process





Skills, Abilities and Competencies

**Essential**

- Excellent computer programming skills
- Ability to maintain accurate and up to date records
- Maintain commercial-in-confidence requirements
- Ability to organise and prioritise own work and organise research within the project timetable
- Effective team working.
- Good communication skills
- Excellent analytical skills
- Flexible and co-operative
- Self-motivated and hardworking
- Willingness to learn new skills

**Desirable**

- Willingness to travel with notice for short term research visits

***\*Criteria to be used in shortlisting candidates for interview***

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

VITAL

The University encourages all staff to live our [VITAL values](#) which are:

**Valuing People, Innovators, Together, Accountable, Leaders.**

Equality and Diversity

We believe that equality, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

