

Job Description

Postdoctoral Research Associate in Simulation Modelling

Salary:	Grade 7
Contract:	Full time and fixed term (until December 2028)
School/Department:	Kent Business School
Location:	Canterbury Campus/Hybrid
Responsible to:	Professor Kathy Kotiadis

Job purpose

Applications are invited for a Postdoctoral Research Associate (PDRA) position in the area of Operational Research (specifically Modelling and Simulation) ideally starting in June 2025. The PDRA will be part of the Centre for Advanced Diagnostics Development and Application (CADDa) based at the University of Kent and also part of the Department of Analytics, Operations and Systems (DAOS) at the Kent Business School.

The PDRA will lead on simulation studies for the newly formed Centre for Advanced Diagnostics Development and Application (CADDa) part funded by [Research England development fund – UKRI](#). The vision of CADDa is to provide a means by which new innovative diagnostic tools are delivered to the health services. The successful candidate will work closely with Prof Kathy Kotiadis to undertake simulation studies exploring the impact of new diagnostic developments on organisations and especially the NHS. Given the length of the appointment (until December 2028), the postholder would be expected to undertake a number of simulation studies for different diagnostic developments, in collaboration with external stakeholders e.g. diagnostic SMEs, clinicians/end users. Additionally the PDRA will be disseminating findings through social media, conferences/workshops, publishing in high quality Operational Research and health/medical journals. Candidates will be expected to travel to different diagnostic company sites in England as the centre has a National remit. Given the nature of the role there is some scope for remote working. Working arrangements will be explored at interview. The post holder will further assist in the preparation of follow on grant applications and support other CADDa dissemination activities.

The PDRA will have the opportunity to help frame the specific programme of research leading to academic publications as long as the work is aligned with the modelling needs of the centre.

Key accountabilities

- Develop simulation models that answer questions about the various diagnostics systems of interest.
- Undertake the simulation modelling process with the engagement of stakeholders during conceptual modelling, experimentation and implementation.
- Develop and tailor the simulation modelling methodology for the context of interest.
- Disseminate research findings through publication in peer-reviewed academic journals, conference presentations, workshops, and social media.
- Contribute to the writing of research proposals to secure additional funding beyond the study.

Key duties

The following are the main duties for the job. Other duties, commensurate with the grading of the job, may also be assigned from time to time.

- Review the scientific literature relevant to the diagnostic challenge and the research programme agreed with Professor Kotiadis.
- Work with a wide range of stakeholders to obtain information used in the modelling process, potentially involving the use of workshop facilitation, problem structuring methods/ Soft OR techniques.
- Identify sources of existing data and initiate new data collection activities to address any data gaps.
- Develop advanced simulation models and, if required, develop hybrid simulation models.
- Write up the research process and findings for publication in reports and leading peer-reviewed journals.
- Disseminate findings to a wider audience including non-scientists and project stakeholders.
- Engage in continuous professional development.
- Contribute to the Kent Business School research and innovation culture by attending and contributing to department meetings, research seminars and workshops.
- Contribute to some teaching activities and student project supervision if required.

Internal & external relationships

Internal: Staff within the Kent Business School and more widely across the University

External: depending on the nature of the agreed research programme, the post holder will be working with academics from other institutions, and with a variety of regional, national or international organisations (e.g., NHS, Diagnostic companies and umbrella organisations)

Health, safety & wellbeing considerations

This job involves undertaking duties which include the following health, safety and wellbeing considerations:

- Regular use of Screen Display Equipment

Person specification

The Person Specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Please be aware that your application will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in your application, or in your cover letter where applicable, which back-up any assertions you make in relation to each criterion.

Essential Criteria:

- A PhD degree in Operational Research, Management Science, Operations Management, Statistics, Computer Science, or a related discipline (A)
- Knowledge and experience of discrete event simulation modelling (A,I,T)
- Experience of modelling using simulation software (A,I,T)
- Computer programming knowledge (e.g. Python, or similar) and good IT skills. (A)
- A record of publications in quality peer reviewed journals, commensurate with stage of career. (A)
- Ability to communicate clearly and effectively both spoken and written. (A,I)
- Excellent interpersonal skills and ability to collaborate with colleagues within and beyond the School. (I)
- Ability to work independently, use initiative, and work creatively to resolve technical problems. (A)
- Proven time management skills, ability to meet deadlines and plan and manage own research activity. (A,I)
- Firm commitment to achieving the University's vision and values, with a passion for a transformative student experience and multidisciplinary, impactful research (I)
- Commitment to deliver and promote equality, diversity and inclusivity in the day to day work of the role (I)

Desirable Criteria:

- Experience Health Systems modelling (A,I)
- Knowledge of hybrid simulation or multiple simulation techniques (e.g. ABS, SD, Monte Carlo) (A,I)
- Training or experience in Problem Structuring Methods/Soft OR (A,I)
- Interest to promote research using a range of media (e.g., social media) (I)
- Experience in developing research proposals and/or working on externally funded projects (AI)

Assessment stage: A - Application; I - Interview; T - Test/presentation at interview stage