Job Description

Job title:	Research Associate
Department/School:	School of Management
Grade:	7
Location:	Claverton Down Campus

Job purpose
The School of Management seeks to recruit a Research Associate for a collaborative project with the NHS Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group (BNSSG CCG). The overall aim of the project is to develop a dynamic simulation model and accompanying prototype software tool in R for studying how a patient population evolves over time. The model itself is expected to take the form of a 'micro-simulation', where the future attributes of persons within a population are individually considered in respect of some global options, such as specified temporal parameters relating to outflow (e.g. deaths, emigration), inflow (e.g. births, immigration), and any increasing or decreasing trends in disease (e.g. diabetes) and lifestyle factors (e.g. smoking). The simulation software tool will be useful for a number of reasons. It will provide insight into the shape of the population in years to come which will enable services to be tailored around specific cohorts. Through linking attributes to activity and spend, it will allow the effect of drift between population segments to be effectively modelled and understood. It would also facilitate identification of new segments over time in response to the evolving shape of the population. The tool will be able to produce results for different trajectories of disease prevalence and lifestyle factors derived empirically or from the recent literature and as defined by the user.

Reports to:
Principal Investigators (PIs) of the research project Prof Christos Vasilakis and Dr Richard Wood

Staff management responsibility
None, although some supervision of doctoral, postgraduate or undergraduate students may be required.

Main duties and responsibilities	
	Responsible to the PIs for:
1	To generate a good understanding of the relevant health system and the nature of how a population evolves in terms of health status, and how this affects demand and utilisation of healthcare resources.
2	Code, verify and validate a number of mathematical and computer simulation models using one or more appropriate approaches to systems modelling and simulation.
3	To address modelling requirements using appropriate qualitative (e.g. interview, facilitated workshop) and quantitative (e.g. data collection, statistical analysis) methods.
4	To code, verify and validate a baseline computer simulation model using relevant methods and an appropriate simulation software package (R).
5	In collaboration with project partners, to formulate a number of different scenarios exploring how alternative plausible trajectories of disease incidence and population growth can affect baseline results.
6	To explore how policy decisions can impact the health status of individuals within the population and thus estimate the effect on healthcare demand and utilisation.
7	To take a lead with project management: e.g. timetabling and meeting project milestones; participating in regular discussions with collaborative partners; preparing and facilitating project meetings.
8	To disseminate results of project as appropriate e.g. by presentations at local meetings, national and/or international conferences etc.
9	To facilitate and participate in group meetings and prepare and deliver presentations to project team, internal and external stakeholders or funders.
10	To potentially assist with the supervision of graduate students and undergraduate project students.
11	To continually update knowledge and understanding in field or specialism to inform research activity.
12	To write up results of research and to contribute to publishing of results in high-quality peer-reviewed academic literature.

Special conditions
Compliance with all relevant Codes of Practice and regulations for the University and relevant discipline. Given the collaborative nature of this project, some meetings and other project activities may have to be scheduled outside normal working hours. There is some flexibility with regard to base, but it is expected that the successful candidate will maintain a substantial routine presence at the CCG offices in central Bristol and at the main campus of the University of Bath.

Career and Professional Development Activities
From time to time you may be asked to assist in the facilitation of CPD activities. This will form part of your substantive role and you will not receive additional payment for these activities.

Person Specification

Criteria	Essential	Desirable
Qualifications		
A PhD degree (completed or near completion) in a relevant subject area such as operational research, computer science, or epidemiology, or equivalent significant relevant experience and professional qualification (such as an MSc degree in a relevant subject area such as operational research, computer science, or epidemiology)	√	
Experience/Knowledge		
Postdoctoral experience		√
Demonstrate significant depth and breadth of specialist knowledge of subject matter to contribute to the study	√	
Demonstrate awareness of latest developments in the field of research and in research design	√	
Demonstrate potential to publish in high quality, peer reviewed journals	√	
Ability to specify and describe dynamic population models using one or more of different modelling techniques (SIR, System Dynamics, Markov model)	√	
Previous experience in some area of health and social care (public health, health services research etc.) and/or willingness to learn	√	
Ability to write code and script in programming languages, including object-oriented programs	√	
Knowledge and working proficiency of coding in R and a willingness to become an advanced R developer		√
Skills		
Ability to organise and prioritise own workload	√	
Ability to write research reports and to effectively disseminate outcomes	√	
Excellent oral, interpersonal and written communication skills	√	
Experience or willingness to quickly develop ability to communicate effectively with health care professionals	√	
Proficiency in IT skills	√	
Attributes		
Innovation and developing creative solutions	√	
Enthusiasm and self-motivation	√	
Organisation – able to plan and deliver work to meet required deadlines	√	
Tenacity – working to achieve own and team objectives and to overcome obstacles	√	
Ability to be an effective team worker	√	