Job Description and Person Specification

JOB DESCRIPTION

Post title:	**Research Fellow in topological data analysis**		
School/Department:	Mathematical Sciences		
Faculty:	Social Sciences		
Career Pathway:	Education, Research and Enterprise (ERE)	Level:	4
*ERE category:	Research pathway		
Posts responsible to:	Professor of Mathematics, Head of School		
Posts responsible for:	N/A		
Post base:	Office-based		

Job purpose
To undertake research in accordance with the specified research project under the supervision of the award holder. To undertake leadership, management and engagement activities.

Key accountabilities/primary responsibilities		% Time
1.	To carry out original research in topology of nanomaterials	40 %
2.	Regularly disseminate findings by taking the lead in preparing publication materials for leading journals, presenting results at conferences, or exhibiting work at other appropriate events	10 %
3.	Keep up to date with the research literature, carry out literature review in relevant fields	10 %
4.	Design and carry out suitable numerical experiments for the project	20%
5.	Participate in group meetings, research seminars, and relevant lecture courses	5 %
6.	Contribute to the writing of bids for research funding	5 %
7.	Carry out occasional undergraduate supervision, demonstrating or lecturing duties within own area of expertise, under the direct guidance of a member of departmental academic staff	5 %
8.	Any other duties as allocated by the line manager following consultation with the post holder	5 %

Internal and external relationships
Direct responsibility to holder of research award or academic supervisor. May have additional reporting and liaison responsibilities to external funding bodies or sponsors. Collaborators/colleagues in other work areas and institutions.

Special Requirements
To attend national and international conferences for the purpose of disseminating research results. *Applications for Research Fellow positions will be considered from candidates who are working towards or nearing completion of a relevant PhD qualification. The title of Research Fellow will be applied upon successful completion of the PhD. Prior to the qualification being awarded the title of* ***Senior Research Assistant*** *will be given.*

PERSON SPECIFICATION

Criteria	Essential	Desirable	How to be assessed
Qualifications, knowledge and experience	PhD or equivalent professional qualifications and experience in Mathematics, Computer Science, or Physics Detailed understanding and knowledge of topological data analysis Good programming skills in Matlab, Python, or similar Experience with developing new code to support research projects Track record of independent research work	Track record of publication in a field relevant to the project Knowledge of synchronisation methodology and spectral methods in graph theory Experience of working in an interdisciplinary research environment Knowledge of Machine Learning Teaching at undergraduate level and contributing to teaching at postgraduate level	CV, publications, references, interview
Planning and organising	Able to organise own research activities to deadline and quality standards		CV, references, interview
Problem solving and initiative	Able to develop understanding of complex problems and apply in-depth knowledge to address them Able to develop original techniques/methods	Being proactive in formulating new research problems and strategies to solve them	CV, references, interview
Management and teamwork	Able to supervise work of junior research staff, delegating effectively Able to contribute to the management of the team and administrative processes Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development		CV, References, Interview
Communicating and influencing	Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience Able to present research results at group meetings and conferences Able to write up research results for publication in leading peer-viewed journals Work proactively with colleagues in other work areas/institutions, contributing specialist knowledge to achieve outcomes		CV, references, interview
Other skills and behaviours	Understanding of relevant Health & Safety issues Positive attitude to colleagues and students		CV, references, interview

Special requirements	Able to attend national and international conferences to present research results		CV, references, interview

JOB HAZARD ANALYSIS

Is this an office-based post?

☒ Yes	If this post is an office-based job with routine office hazards (eg: use of VDU), no further information needs to be supplied. Do not complete the section below.
☐ No	If this post is not office-based or has some hazards other than routine office (eg: more than use of VDU) please complete the analysis below. Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder.

- HR will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

ENVIRONMENTAL EXPOSURES	**Occasionally** (<30% of time)	**Frequently** (30-60% of time)	**Constantly** (> 60% of time)
Outside work			
Extremes of temperature (eg: fridge/ furnace)			
## Potential for exposure to body fluids			
## Noise (greater than 80 dba - 8 hrs twa)			
## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below:			
Frequent hand washing			
Ionising radiation			
EQUIPMENT/TOOLS/MACHINES USED			
## Food handling			
## Driving university vehicles(eg: car/van/LGV/PCV)			
## Use of latex gloves (prohibited unless specific clinical necessity)			
## Vibrating tools (eg: strimmers, hammer drill, lawnmowers)			
PHYSICAL ABILITIES			
Load manual handling			
Repetitive crouching/kneeling/stooping			
Repetitive pulling/pushing			
Repetitive lifting			
Standing for prolonged periods			
Repetitive climbing (ie: steps, stools, ladders, stairs)			
Fine motor grips (eg: pipetting)			
Gross motor grips			
Repetitive reaching below shoulder height			
Repetitive reaching at shoulder height			
Repetitive reaching above shoulder height			
PSYCHOSOCIAL ISSUES			
Face to face contact with public			
Lone working			
## Shift work/night work/on call duties			