



Job title	Research Associate/Fellow in Quantum Information (Fixed-term)	Job family and level	Research & Teaching Level 4 (Appointment will be Level 4 Career training grade where an appointment is made before PhD has been completed)
School/ Department	Mathematical Sciences	Location	University Park Campus

Purpose of role

- Have specific responsibility for research, for developing research objectives and proposals with Professor Gerardo Adesso and collaborators on the EPSRC/NSF funded project "Entanglement Witness of Heterogeneous Surface Reactions"
- Plan and conduct work using approaches or methodologies and techniques appropriate to the type of research.
- Be responsible for writing up their work for publication and have the opportunity to use their initiative and creativity to identify areas for research, develop research methods and extend their research portfolio.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	Research ▪ Undertake original research of international excellence in quantum information and entanglement theory. ▪ Develop research objectives and proposals for own and/or collaborative research area. ▪ Plan and conduct research using recognised approaches, methodologies and techniques within the research area, and develop new analytical, numerical and optimisation methods where applicable. ▪ Collaborate with academic colleagues on areas of shared interest, for example, collaborative or joint research projects. ▪ Plan and manage own research activity and resolve problems, if required, in meeting own/team research objectives and deadlines in collaboration with others. ▪ Identify opportunities and assist in writing bids for research grant applications.	65 %
2	Engagement, Communication and Dissemination ▪ Analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights to research area. ▪ Prepare papers for publication in leading journals and/or contribute to the dissemination at national/international conferences, workshops and meetings resulting in successful research outputs. ▪ Provide support, guidance and supervision to other staff and junior team members, where appropriate in own area of expertise.	25 %

3	Project Administration ▪ Coordinate project meetings, workshops and resources, and support collaboration and decision-making across the UK and US teams.	10 %
---	---	------

Person specification

	Essential	Desirable
Skills	• Ability to develop and apply analytical or computational methods to challenging research problems. • Excellent oral and written communication skills, including the ability to present complex research clearly to specialist and non-specialist audiences. • Ability to organise and deliver research independently, manage competing priorities and meet agreed deadlines. • Ability to collaborate effectively with colleagues from different disciplines and institutions.	• Experience of scientific programming or numerical optimisation relevant to quantum information research.
Knowledge and experience	• Strong knowledge of quantum information theory and quantum entanglement. • Experience of theoretical or mathematical research in quantum physics or a closely related area, with research outputs appropriate to career stage.	• Knowledge of quantum sensing, quantum metrology or quantum measurement theory. • Experience with open quantum systems, spin dynamics, quantum optics or light–matter interactions. • Experience of collaborative interdisciplinary research, including links with experimental physics, materials science or chemistry. • Experience of publishing peer-reviewed research or presenting findings at international scientific meetings.
Qualifications, certification and training (relevant to role)	• Holding a PhD (or being near completion of a PhD) in mathematics, physics or a closely related discipline.	



Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.
Taking ownership	Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.
Forward thinking	Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
Professional pride	Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.
Always inclusive	Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

Key relationships with others



