



ROLE PROFILE

- Job Title: Research Associate/Fellow in non-equilibrium classical and quantum many-body physics
School/Department: School of Physics and Astronomy
Job Family and Level: Research and Teaching Level 4 Training Grade/Level 4
Contract Status: Fixed-term for a period of 2 years
Hours of Work: Full-time (36.25 hours per week)
Location: School of Research and Astronomy
Reporting to: I. Lesanovsky, J. P. Garrahan
Purpose of the Role: Conduct theoretical research non-equilibrium many-body systems

The project is to carry out research in the broad field of non-equilibrium quantum and classical many-body system, including cold atomic gases, quantum optical systems, classical glassy and driven systems, neural networks and machine learning, and systems at the interface of classical and quantum.

One area of interest will be the study of the emergence of correlated dynamical states and collective phenomena in systems with discrete-time dynamics, such as cellular automata, and the competition between classical and quantum effects, together with issues of thermalisation and non-ergodicity.

The researcher will be an integral part of an interdisciplinary team of researchers covering a broad range of topics including statistical physics, condensed-matter theory, computational physics, atomic physics and quantum optics, and soft-matter physics. We seek a motivated, skilled and highly independent researcher to complement our team.

The researcher is expected to actively contribute to the research activities of the condensed matter theory group at the School of Physics and Astronomy.

The position is funded by the the Leverhulme Trust through the project "Open quantum cellular automata". The post commences on or after 1st September 2018 and is initially for a period of 2 years.

The role holder will have the opportunity to use their initiative and creativity to identify areas for research, develop research methods and extend their research portfolio.

Table with 2 columns: Numbered list (1-4) and Main Responsibilities (To develop research objectives and proposals for own and/or collaborative research area, To plan and conduct research using recognised approaches, methodologies and techniques within the research area, To analyse and illuminate data, interpret reports, evaluate and criticise texts and bring new insights to research area, To write up research work for publication and/or contribute to the dissemination at national/international conferences, resulting in successful research outputs).

5.	To identify opportunities and assist in writing bids for research grant applications. Prepare proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.
6.	To build relationships with both internal and external contacts in order to exchange information, to form relationships for future collaborations and identify potential sources of funds and/or opportunities for collaboration.
7.	To co-ordinate the operational aspect of research networks, for example, arranging meetings and updating websites etc. and contribute to collaborative decision making with colleagues in area of research.
8.	To provide support, guidance and supervision to other staff, where appropriate in own area of expertise.
9.	To supervise undergraduate and/or postgraduate students projects, fieldwork and placements, as appropriate. To participate in the assessment of student knowledge and co-supervise projects at Masters level.
10.	To collaborate with academic colleagues on areas of shared interest for example, course development, collaborative or joint research projects.
11.	To plan and manage own research activity and resolve problems, if required, in meeting own/team research objectives and deadlines in collaboration with others.
12.	To utilise and contribute to organising research resources and facilities, laboratories and workshops as appropriate.
13.	To make a contribution to teaching, for example through laboratory demonstrations, lectures to postgraduate workshops and/or delivery of Level 1 modules.

Knowledge, Skills, Qualifications & Experience

	Essential	Desirable
Qualifications/ Education	<ul style="list-style-type: none"> PhD (or near completion) or equivalent in relevant subject area or the equivalent in professional qualifications and experience in research area 	
Skills/Training	<ul style="list-style-type: none"> Excellent oral and written communication skills, including the ability to communicate with clarity on complex information High analytical ability to analyse and illuminate data, interprets reports, evaluate and criticise texts and bring new insights Ability to creatively apply relevant research approaches, models, techniques and methods Ability to assess and organise resource requirements and deploy effectively Ability to build relationships and collaborate with others Ability to work independently 	<ul style="list-style-type: none"> Ability to foster a research culture and commitment to learn in others
Experience	<ul style="list-style-type: none"> Some practical experience of applying the specialist skills and approaches and techniques required for the role Experience in use of research methodologies and techniques to work within area Strong track record in the analytical and/or numerical treatment of many-body systems 	<ul style="list-style-type: none"> Previous success in gaining support for externally funded research projects Background in statistical and/or quantum field theory



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