

<b>Job Title:</b>	Research Fellow in Systems Biology of Cell Cycle Control
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<b>Responsible to:</b>	Dr. Matteo Barberis
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<b>Responsible for:</b>	Not applicable
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<b>Job Summary and Purpose:</b>
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

<b>Main Responsibilities/Activities</b>
<p>To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.</p> <p>Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.</p> <p>Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.</p> <p>To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.</p> <p>To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.</p> <p>The post holder may occasionally be required to supervise more junior research staff.</p>

<b>Person Specification</b>
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<b>The post holder must have:</b>
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A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years' experience in specified / relevant fields
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The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.
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<b>Relationships and Contacts</b>
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Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.
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<b>Special Requirements</b>
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To be available to participate in fieldwork as required by the specified research project
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**All staff are expected to:**

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- Undertake such other duties within the scope of the post as may be requested by your Manager.

## Research Role Profile

**Addendum**

This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Job Purpose.

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**Background Information/Relationships**

This Research Fellow post is funded by the Faculty of Health and Medical Sciences to characterise molecular mechanisms through which cell cycle and metabolic genes are switched on and off, at the right time, in yeast. The project further involves collaboration with European laboratories to investigate biochemical aspects of cell cycle (Prof. Francesc Posas, IRBB Barcelona, Spain) and metabolism (Prof. Jens Nielsen, Chalmers University of Technology, Gothenburg, Sweden), and it is supported by members of Bioinformatics core facility at the University of Surrey that can assist in data analysis.

Recent Chromatin ImmunoPrecipitation exonucleases-based (ChIP-exo) experiments revealed many novel and unexpected targets of cell cycle-specific transcription factors, such as metabolic enzymes (Mondeel et al. 2019, *Nucleic Acids Research*, 47, 7825). The Barberis lab is currently further investigating, through mathematical modelling and experimentation, the mutual regulation of cell cycle and metabolic pathways, and cell cycle switches that involve control of gene regulation through cell cycle-specific transcription factors. In the frame of these investigations, we have recently discovered how the sequential order of waves of enzymatic activities driving cell cycle progression is achieved by synchronizing these with transcriptional activities (Linke et al. 2017, *Nature NPJ Systems Biology and Applications*, 3, 7). This project is therefore twofold. First, it is aimed to identify the mechanism(s) through which Forkhead transcription factors are timely activated by enzymatic activities, and timely activate definite cell cycle targets. Second, it is aimed to further characterise the observed new metabolic targets.

The Research Fellow will combine classical biochemical, genetic, cell-biological and cell-imaging methods (e.g. Linke et al. 2017, *Nature NPJ Systems Biology and Applications*, 3, 7), if necessary with global approaches (e.g. Mondeel et al. 2019, *Nucleic Acids Research*, 47, 7825) in the budding yeast *Saccharomyces cerevisiae*. Besides excellent biochemical and molecular biology skills, the post holder will need to demonstrate experience of following and adapting protocols and selecting appropriate experimental methodologies. Furthermore, the post holder will need to demonstrate the ability to report the research findings in scientific papers and through presentations to peers at various levels as well as the ability to supervise students. Finally, the post holder will contribute to grant applications and other funding opportunities.

Research Role Profile

<b>Person Specification</b>	
<p>This section describes the sum total of knowledge, experience &amp; competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Job Purpose.</p>	
<b>Qualifications and Professional Memberships</b>	<b>Essential/Desirable</b>
A higher research degree (PhD/DPhil) in the area of biochemistry, molecular biology or related field, in a relevant subject (possibly of cell cycle biology)	Essential
<b>Technical Competencies (Experience and Knowledge)</b> This section contains the level of competency required to carry out the role.	<b>Essential/Desirable</b>
Demonstrable working experience in biochemistry, molecular biology, genetics	Essential
Experience with cell-imaging methods	Desirable
Experience with -omics approaches (ChIP-exo)	Desirable
Experience working with the budding yeast <i>Saccharomyces cerevisiae</i>	Desirable
Bioinformatics and programming skills	Desirable
Track record of publications in peer-reviewed journals (possibly highly ranked in systems biology/cell cycle biology) and talks at conferences	Essential
Written and verbal communication skills with an ability to write project deliverables and give presentations on the completed work	Essential
<b>Key Responsibilities</b>	
<p>This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Job Purpose.</p>	
<ol style="list-style-type: none"> <li>1. Plan, organise and conduct research in the area of cell cycle regulation and systems biology of cell cycle control</li> <li>2. Report research results at national and international at scientific meetings and publish work in peer-reviewed journals</li> <li>3. Prepare regular internal project reports</li> <li>4. Assist in the teaching and supervision at all levels including UG, BSc, PhD</li> <li>5. Contribute to grant applications and further funding opportunities</li> <li>6. Continually update knowledge and develop skills, and translate knowledge of advances in the area into research activity</li> <li>7. Attend face to face meetings and work periods with national and international collaborators</li> </ol>	
<b>N.B. The above list is not exhaustive.</b>	