BETTER PHD APPLICATIONS

DR CALUM LECKIE
UCL CAREERS

UCL Careers
What we will cover today

- What academic recruiters want
- Personal statements
- The academic research CV
- Speculative approaches to supervisors
- Research proposals
- Sourcing PhDs
Dr QueeLim Ch'ng, Chair of the LIDo Research Training Committee

Q: ‘What are the key things you look for in applications for a PhD place?’

“We look for several things in applications. First academic excellence, usually a first or upper second. This is very imp. as our programmes are very challenging.

Second, research experience, the student has spent some time in the lab or doing research at the computer. They should be able to execute [work] in the lab. – this is really important. Those [two] are what most programmes look for.

In addition, students have to be highly motivated.. a burning desire to achieve.. and generally interested in doing our kind of research [highly inter-disciplinary]”
How HEI’s are Recruiting PhDs

2014 Survey by HECFE
surveyed senior academics across disciplines, 60 institutions

Top qualities looked for in applicants (in order):
1. Have ideas for research proposal or design (stated by nearly 80%)
2. Prior first degree grade attainment
3. Prior masters attainment
4. Evidence of research skills
5. Other research experience

KEY FINDINGS:
• A lot of emphasis is placed on evidence of experience of research rather than potential aptitude
• Excellent academic performance at masters level (esp. dissertation) may be used as key differentiator
PERSONAL STATEMENTS

- Explaining your motivation
- Highlighting your key selling points
Midlands Consortium Interdisciplinary Doctoral Programme (MCDIP)

Representing a collaboration fifteen universities in the English Midlands, the consortium provides students with a unique opportunity to pursue innovative interdisciplinary research projects.

Disciplines: Cell biology, Neuroscience, Immunology, Developmental biology, Physiology, Structural biology, Chemical biology, Biotechnology, Microbiology, Genetics, Evolutionary biology.

In year one - research training that provides mathematical and computational skills to understand and model biological processes and function.

In year one you will experience three, 2 month lab rotations.

In years 2 – 4 you will work on your selected project.

At any point in years 2 – 4 you will undertake a 3 month industrial placement.
Samantha Singh - Statement of Purpose:

**The Hook**

**[P1]** The challenge of elucidating the complex interplay between neurons and the subsequent network computations is a compelling one. The implications of characterising these computations are vast and it represents one of the major obstacles in our understanding of the human brain. Such a challenge is attractive to me on a personal level because it allows me to address both my affinity for physiology and computer science. After considering the opportunities available on the Midlands Consortium Interdisciplinary Doctoral Programme (MCDIP) and the potential range of research projects, I am sure the programme offers the best platform on which to further my career in neuroscience and satiate my interests. To be able to complete two four-month research projects in different laboratories is especially appealing, as the breadth of research across the five universities is one of the greatest strengths of the programme. The work of principle investigators utilising computational modelling to investigate neuronal networks is of particular interest to me and I hope the programme will allow me to expand upon this.

**Commitment to Programme**

**[P2]** My undergraduate degree in Biomedical Sciences at King's College London focused on Pharmacology, Psychology and Mathematics. Elective modules such as Pharmacology of the Central Nervous System and Biological Psychology demonstrated the complexity of our nervous system, from neuronal networks to receptor properties. Other modules such as Stress, Immunity and Health, taught me how psychological factors can affect other parts of the human body via Hypothalamic-Pituitary-Adrenal axis-mediated cortisol release. I believe these modules established much of the core biological knowledge needed for a successful career in neuroscience. My final year dissertation focused on Major Depressive Disorder (MDD) and allowed me to utilise the knowledge and critical thinking skills I had developed during my degree. As a result I was able to analyse and investigate current scientific findings to produce a critical literature review. Not only did my undergraduate degree provide a firm foundation for further study in neuroscience, but my academic success was recognised by the award of a British Neuroscience Association first prize.

**Research Experience**

**[P3]** While studying Biomedical Science I was keen to gain work experience in neuroscience and this was achieved during my research year at The University of California, Berkeley. My work there was predominantly focused on the neuronal basis of MDD and the role of neuronal nicotinic acetylcholine receptors (nAChRs). It was this research year that inspired me to pursue neuroscience as a career. It was fascinating to be able to target just one subunit of a nAChR in a specific brain region and visibly observe its effect on animal behaviour. I was intrigued by the fact that such a minuscule change at the molecular level can influence complex behaviours like anxiety and depression. The research itself was structured in such a way that I was given the opportunity to be responsible for my own project and experiments, which generally involved behavioural testing, histology and microscopy. These data were then presented as a prize winning poster when I returned to King's College. The experience enabled me to develop many core skills, such as data analysis and interpretation that are required to succeed in a research environment. In addition it demonstrated that I can apply myself to challenges, both academic and personal.

**Other Experience – Transferable skills**

**[P4]** Upon completion of my bachelor's degree I wanted to challenge myself and learn skills that would transfer well to neuroscience research. I identified computer programming and data analysis as suitable skills because I believe they are key elements of both current and future neuroscience research. As a result I accepted a position with the company Geotech Enterprise as a software developer. My primary role was to provide database solutions for a range of clients, including the National Health Service. Exposure to some of the possibilities of current computer technology opened my eyes to how it could be related to neuroscience. I believe that many future advances will be formed from the partnership between information technology and neuroscience, ranging from new analysis techniques to pragmatic artificial intelligence. Importantly my year at Geotech Enterprise was an excellent opportunity to experience working outside of academia. I gained valuable insights into the world of business and the inner workings of a variety of companies. The industry placements for PhD students that is incorporated into the MCDIP is a unique chance to develop this further and guide my future career decisions.

**Commitment to Programme**

**[P5]** The culmination of all these experiences was my application to the Master of Science (MSc) Neuroscience course at Imperial College London, a leading contributor to neuroscience research. Currently I am in the process of studying for the taught part of the course while also working on a masters project in the Sherborne group at the MRC Laboratory for Cell Biology. My project is focused on producing and testing a computational model of layer 2/3 cells in the mouse barrel cortex. This is a particularly exciting component of the course because it is an opportunity to investigate neuronal circuitry on a practical level, which will in turn prepare me for future research in the field. It is also an ideal way to apply the computer programming skills I learnt at Geotech Enterprise to the world of neuroscience. The SimMC course fits well with this as additional training in mathematical, computational and statistical techniques is ideal for the modelling of neuronal networks and the option of a tailored third module will be particularly useful for a PhD project in the future.

**Summary & The Future**

**[P6]** Taking these experiences into account I believe I would be well suited to the MCDIP with my biological and computational background as well as my knowledge of both academia and business. The programme itself is attractive for numerous reasons. Firstly, the breadth of high quality research and number of universities participating in the programme is ideal for identifying a project suited to my interests and experience. Secondly, the taught components of the programme and the opportunity for experience in industry provide a strong foundation for a successful career in neuroscience. Finally and most importantly, the programme will help me to make an informed decision about whether to pursue academia or industry upon completion of a PhD.
Content Analysis

- Emphasised **relevant knowledge** gained during academic studies & some **research skills** – critical thinking [P2]
- Highlighted an **academic achievement** (BNA prize) [P2]
- **Relevant tech. skills** in California lab & commitment to research [P3]
- **Transferable skills** gained from other work experience [P4] & evidence of Interdisciplinary knowledge [P4]
- Highlighting nature of masters demonstrates **commitment to discipline**. [P5]
- Additional **research skills & experience** highlighted [P5]
- **Programme choice**: Identifying elements of programme that fit with self development needs & usefulness [P5]
- How PhD fits with ideas of **long term career** [P6]
Personal statement

- Why you want to pursue a PhD, career aims
- Why is this particular area of research of most interest to you?
- Why you have chosen to apply to this particular university, research group?
  - MOTIVATION: provide examples to illustrate key points, have you read the papers? Do you have an opinion / ideas?
- What previous academic and practical experience have you got that shows your capability to do the job?
- Technical & methodological skills you have to offer
- Academic & Personal skills & qualities
  - THINK KEY SELLING POINTS (try not to cover every skill needed), key examples - evidence
  - THINK ACHIEVEMENTS
THE ACADEMIC CV
What key achievements and types of experience on the CV would make the applicant ‘stand out from the crowd’?

- Publication, presentations / Public exhibition track record
- High grades
- Attended leading University / Course
- Prizes / Awards
- Relevant work experience
- Outreach activity
- Societies set up
- Initiative / Pro-activity
- Research project experience
Rachel Harker

Education
Birkbeck College, University of London October 2005 - present
AHRB funded PhD in Seventeenth Century Science Writing Supervisors: Dr Stephen Cliter (English) Professor Michael Bright (History)

“Encyclopaedism and the organisation of natural knowledge in theory and practice in the later seventeenth century: Robert Boyle and his contemporaries.”

See appendix for full details of research.
Pembroke College, Cambridge University October 2004 - September 2005
AHRB funded MPhil in Renaissance Literature

“Robert Boyle: Towards a New Organisation of Knowledge.”
Awarded first class honours

Keble College, Oxford University October 2001 - June 2004
BA English Language and Literature.

“An investigation of the philosophical implications of linguistic choices in natural philosophical writing from Francis Bacon to Robert Boyle.”

Awarded first class honours

Durham Johnston Comprehensive School
A-levels English literature (A) History (A) French (A) Art (B) GCSEs 9 subjects, all at grade A September 1994 - June 2001

Relevant Employment
Birkbeck, London University March - May 2006 and May - June 2007
Research Assistant, Works of Robert Boyle and Correspondence of Robert Boyle.

• Proof correction and manuscript work, editing skills.

Queen Mary College, London University September 2006-present
Teaching Assistant

• Seminar leader on first year Shakespeare course; developing educational and communication skills

Other Employment
KPMG Management Consulting July - August 2002 and 2003

• Conducting surveys, editing and compiling reports; gaining IT, networking, professional and communication skills

Academic and Related Achievements

Presentations:
• Papers at British Society for the History of Science Postgraduate Conferences
  - 2006 "Robert Boyle’s Writings Papers: a Chaos, Rude and Indigestible?"
  - 2007 "Natural philosopher or rational historian: creating natural knowledge in the seventeenth century"

• PowerPoint presentation for course leaders of Queen Mary Shakespeare course (2007)

Professional development:
• Research Councils UK GRADschool (2007)
• Invited speaker at the Research Councils UK GRADschool Directors’ Workshop (2007)

Administrative:
• Leader of the intercollegiate Early Modern Reading Group at Birkbeck. (2006-2008)
• One of six co-ordinators of the Oxford University Women’s Open Day (2002).
  Responsible for publicity, arranging and implementing programmes.
• Oxford University Target Schools Scheme (2002). Visited state schools to encourage further applications to Oxford.
• Illustrator of Keble Freshers’ Handbook (2002)

Other Achievements

Voluntary:
• Charities Officer on the Keble College JCR Committee (2002-3). Responsible for raising and distributing money.

Sports:
• Rowed in the Keble College first eight, winning blazers in the Torpids Regatta in 2003, and coxed and bowled novice crews in 2002 and 2003.

Personal and Contact Details
Full postal address
Date of birth
Telephone numbers
email address@server.com
Referees - Full names, addresses, phone number and emails of supervisor and at least one other academic referee.

This example has been based upon a real CV, but some information has been changed/included. It appears here by kind permission of the researcher who generously donated the source material.

CV example from Vitae (note: no longer avail.)
Online) www.vitae.ac.uk/researcher-careers

‘I would put contact details top of first page’
SAMANTHA A. SINGH
28 Oakfield Lane, Wembley, London,
Telephone: 020 8587 7405/67 Mobile: 07956 234 2899 Email: s.a.singh93@yahoo.co.uk

Summary
Current postgraduate student with an interest in neuronal networks and computational modelling, particularly in relation to central nervous system architecture. Previous experience in a research environment at the Department of Cellular Physiology at The University of California, Berkley and the MRC Laboratory for Cell Biology at Imperial College London.

Education
MSc Neuroscience, Imperial College London 2017 – 2018
- Project: Computational modelling of Layer 2/3 neurons in the mouse barrel cortex
- Journal Club – Co-organiser of a series of lunch time discussions for current students reviewing recently published papers

BSc Biomedical Sciences, Kings College London 2014 – 2017
- First Class Honours, Programme Percentage = 75.15%
- Dissertation: ‘The Resurgence in the Cholinergic Theory of Major Depressive Disorder and its Potential to Provide Novel Therapeutics.’
- Awarded a British Neuroscience Association first prize for academic achievement.

- Mathematics A*, Chemistry A*, Biology A, AS: Geography A

GCSEs, The Queen’s School, Wembley, London 2009 – 2012
11 at grades A*-A, including Mathematics, English and Science

Research Experience
Masters Research Project, Imperial College London Oct 2017 – Oct 2018
Currently conducting a 10 month masters project in the Sherborne Laboratory at the MRC Laboratory for Cell Biology, Imperial College London
- The project is focused on creating and testing a computational model of layer 2/3 neurons in the mouse barrel cortex
- Involves application of AxioDista bioinformatics software for parameter inference and extensive data analysis using MATLAB

Research Associate, University of California, Berkley Sept 2015 - May 2016
Year-long industrial work placement in the Rutgers laboratory at the Department of Cellular Physiology at The University of California, Berkley. Investigated the role of the cholinergic system in Major Depressive Disorder, using the mouse as a model system.
- Common experimental procedures involved viral stereotaxic surgery, behavioural

Work Experience
Software Developer, Geosch Enterprises Jun 2016 - Sep 2016
- Developed business solutions for a range of clients across a variety of industries, including small medical technology firms, professionally liaising with clients daily.
- Developed software using the program Filemaker.
- Utilised problem-solving skills and the ability to create novel solutions to provide technical support to clients for the personalisation of data management systems.
- Expanded my knowledge of IT and the industry through interactions with industry specific data and exposure to a number of industry experts.

Positions of Responsibility
Team Leader, Outlook Expedition Jun 2015-Jul 2015
A month long expedition to Thailand, Cambodia and Laos with the aim of improving amenities in a small Laos community.
- Developed leadership skills when designated as team leader for six of the volunteers for part of the expedition, tasked with building a temporary school hut.

Primary School Volunteer, The Queen’s School Sep 2014-May 2015
- Volunteered at a local primary school once a week and helped children to understand scientific concepts, including basic cell biology and chemistry.
- Improved communication skills through the teaching of younger pupils using visual media and practical demonstrations using microscopy and simple bench chemistry.

Skills
Proficiency with Microsoft Office, Apple products, Filemaker scripting language, cloud services and MATLAB. Coding proficiency in Python and C++.

Interests and Activities
Long distance running
- Competed as a member of various clubs and currently part of Imperial College London cross country team. Running has developed my determination and persistence.

Intermediate level guitar skills.
- Produce short compositions using Propellerhead computer software.

References Available on request
Research CVs for Academia: Key Sections

- PERSONAL DETAILS
- EDUCATION / QUALIFICATIONS
- RESEARCH EXPERIENCE
- SKILLS (SPECIALIST / TECHNICAL)
- OTHER WORK EXPERIENCE
- INTERESTS / HOBBIES
- REFEREES

OTHER (experience dependent)

- PUBLICATIONS
- AWARDS
- RELEVANT TRAINING
- CONFERENCES / SEMINARS
- TEACHING / MENTORING
- PUBLIC ENGAGEMENT
- GRANTS / FUNDING
- MEMBERSHIPS
- ADMINISTRATIVE DUTIES
Recruiter Advice for all CVs

**CONTENT**
- Targeted, Relevant, Evidence Based
- Achievements / Outcomes
- Avoid overly descriptive language, use **active verbs** (e.g. achieved, controlled, etc.)

**FORMAT**
- Note: Academic CVs of experienced researchers can be more than 2 pages
- Distinct Sections & clear headings & subheadings
- Keep to point, use bullets, paragraphs to 4 lines or less
- Appropriate & consistent formatting/ highlighting
- Check for spelling or grammar errors
Approaching Potential PhD Supervisors Speculatively
Dr Joe Devlin, Head of Department of Experimental Psychology at UCL

Q: What advice would you have regarding contacting potential supervisors?

‘When contacting [an academic] bear in mind we are fairly busy people and want to see some evidence you made an effort to really focus [on us].

Address them as ‘Dear Doctor X’ – get their title right! Keep it really short, it should be two paragraphs or less. First paragraph has to be why you are contacting them, and specifically them.

Show you have done some research to know that they are the right person .. And it’s not a generic email sent to lots of people’
Guidance on how to contact potential supervisors

Identifying a PhD supervisor
Choosing to undertake graduate research is a big decision and it is extremely important that you identify a research project that really excites you. Identifying the right supervisor is critical as this relationship provides you with invaluable support and guidance from a leading academic in your field.

How to identify a suitable supervisor at UCL
- Thoroughly research your options on UCL departmental websites and in the UCL online Graduate Prospectus: www.ucl.ac.uk/gradprospectus
- You can also search for relevant supervisors and research groups in the Institutional Research Information Service: www.ucl.ac.uk/iris. Not all academics are listed in this database but it is a good place to start.
- You can read research papers written by UCL academics in our research repository. All papers are put here subject to academic approval: www.ucl.ac.uk/discovery
- Make contact with either the specific academic you are interested in working with, or the appropriate Department Graduate Tutor (listed either on the department website or next to the programme entry in the Graduate Prospectus), to explore research opportunities in more depth.
What advice would you give to a student thinking of contacting a potential supervisor with a research proposal?

- Have a clear idea of the problem you seek to study
- Know the staff and their specific research interests – align your approach accordingly
- Be flexible about other options for research

Research funding options*

* [www.ucl.ac.uk/prospective-students/graduate/research/fees-funding](http://www.ucl.ac.uk/prospective-students/graduate/research/fees-funding)
Research Proposals
Dr Richard Freeman, Deputy Director of the Bloomsbury ESRC Doctoral Training Centre based in the UCL Institute of Education

What’s looked for in an application – research proposal

‘..the kind of things we’re going to look at are ‘what is your proposal .. specifically’

Is it deliverable in the time frame of 3 years full time or 5 years part time?

Do you have the skills to do it? and if you don’t, do you have a plan to develop those skills while you are doing the doctorate.’
A good PhD proposal should:

- Define a research question clearly
- Describe your approach to answering it
- Highlight its originality and/or significance
- Explain how it relates to existing literature in the field
- Persuade potential supervisors and/or funders of the importance of the work
- Why you are the right person to undertake it

www.ucl.ac.uk/prospective-students/graduate/research/application
What are the most common errors and/or omissions that candidates make in their applications?

- No research into department
- No approach to possible supervisors
- Lack of motivation

- Failure in overseas applicants to address the EFL requirement
- Lack of detail re qualifications and/or not ‘translating’ them to UK equivalence
- Not aware of funding requirements

- No detail about previous research projects (e.g. objective, method, outcome)
- Being too general (‘I am interested in the brain’)
- No indication as to why they are ‘a suitable student’, i.e. just focusing on qualifications
- Sending out a non-specific standard statement
- Vague research proposals

- Over-selling experience/skills
- Over-emphasis on goals / motivations / hopes
Advertised Opportunities

- [www.findaphd.com](http://www.findaphd.com) (includes professional doctorates)
- [www.nature.com/naturejobs](http://www.nature.com/naturejobs) – search ‘studentships’ – UK & International
- [www.postgraduatestudentships.co.uk](http://www.postgraduatestudentships.co.uk) - includes funders
- [www.prospects.ac.uk](http://www.prospects.ac.uk) (Postgrad. Section - type ‘PhD’ into keyword search)

INSTITUTION WEBSITES:
E.g. UCL:
[www.ucl.ac.uk/prospectivestudents/graduate/research/degrees](http://www.ucl.ac.uk/prospectivestudents/graduate/research/degrees)
Identifying Research Groups & Opportunities

- University Research Databases
  - Cambridge: [www.cam.ac.uk/research](http://www.cam.ac.uk/research)

RCUK: Gateway to Research

[http://gtr.rcuk.ac.uk](http://gtr.rcuk.ac.uk)
Online Resources

Academia Overview:
www.academiccareer.manchester.ac.uk

CV examples:
www.vitae.ac.uk/researcher-careers/researcher-cv-examples/list-of-vitae-cv-examples

Research proposal advice:
www.findaphd.com/advice/finding/writing-phd-research-proposal.aspx
Careers Essentials 2017/18

Talks, workshops and eLearning

Search ‘UCL Careers Essentials’

10-title lunchtime talks including:
- Improve your CV
- Find and fund a PhD
- Interview success

5-title workshops including:
- Mock aptitude, etray and psychometric tests
- Using LinkedIn in your job search
- Personality profiling

6-module ‘eLearning’ course
- An introduction to the grad job market
- Your future and how to work towards it
- Sourcing jobs and work experience
# UCL Careers Events across the next fortnight

## UCL Careers Fairs
**Exhibitors information:** [http://www.ucl.ac.uk/careers/events/fairs](http://www.ucl.ac.uk/careers/events/fairs)

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<tr>
<th>Event</th>
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<tr>
<td>UCL Banking, Finance &amp; Economics Fair Day 1</td>
<td>Tuesday 10th October</td>
<td>5:30pm</td>
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<tr>
<td>UCL Banking, Finance &amp; Economics Fair Day 2</td>
<td>Wednesday 11th October</td>
<td>5:30pm</td>
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<tr>
<td>UCL IT &amp; Technology Fair Day 1</td>
<td>Wednesday 18th October</td>
<td>5:30pm</td>
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<tr>
<td>UCL IT &amp; Technology Fair Day 2</td>
<td>Thursday 19th October</td>
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## Skills4Work
**Booking information:** [www.ucl.ac.uk/careers/events/skills4work](http://www.ucl.ac.uk/careers/events/skills4work)

**Workshop:** Leadership with Atos and Frontline
Monday 9th October | 1:00pm

**Panel:** CV's and Covering Letters with CBRE and Freshminds
Thursday 12th October | 5:00pm

**Panel:** Succeeding at Interviews with Linklaters, FDM & Wellcome
Monday 16th October | 1:00pm

**Workshop:** Teamwork with L'Oreal and CBRE
Tuesday 17th October | 5:00pm

**1:1 Interview Coaching:** with RPC
Friday 20th October | 9:45am

## Career Essentials – Talks and Workshops
**For more information and how to book:** [www.ucl.ac.uk/careers/events/essentials](http://www.ucl.ac.uk/careers/events/essentials)

- Make the Most of the UCL Careers Fairs - How to Connect with Employers
  Monday 9th October | 1:00pm
- Better Cover letters, Application Forms and Personal Statements
  Tuesday 10th October | 1:00pm
- Find and Fund a PhD
  Thursday 12th October | 1:00pm
- An Introduction to the Graduate Job Market
  Friday 13th October | 1:00pm
- Your Future and How to Work Towards it
  Monday 16th October | 1:00pm
- Mock Aptitude and Other Psychometric Tests
  Tuesday 17th October | 3:00pm
- Improve Your CV
  Thursday 19th October | 1:00pm
- Practice Aptitude and Other Psychometric Tests
  Thursday 19th October | 3:00pm
- Better PhD Applications
  Friday 20th October | 1:00pm

## Employer Presentations
**Booking information:** [www.ucl.ac.uk/careers](http://www.ucl.ac.uk/careers)

- An Evening with Shell **Off campus**
  Monday 9th October | 5:30pm
- Unilever
  Tuesday 10th October | 1:30pm
- Citi
  Thursday 12th October | 1:00pm
- RBB Economics: Career in Economic Consulting **Off campus**
  Thursday 12th October | 6:00pm
- BCG Kuala Lumpur Associate Virtual Connection Event **Off campus**
  Friday 13th October | 10:00am
Career Essentials

Our series of lunchtime talks, experiential workshops and eLearning courses provide insight, advice and interactive opportunities to engage with all aspects of careers management and navigating selection processes no matter where you are in your careers thinking.

From understanding the graduate job and postgraduate study market to career decision-making; mock aptitude tests to interview success, finding and funding a PhD to getting to grips with LinkedIn and social media - Career Essentials aims to equip you with the essential know-how to begin to move forward and engage more confidently with 'Finding your Future'.

Talks and workshops titles will be repeated on a regular basis in the Autumn, Spring and post-exam season. Our suite of eLearning courses, 'Career Essentials online' allows you to access engaging, interactive content at your own pace.

Please note - talks, workshops and eLearning courses are accessible to all current UCL students and recent graduates.

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Search: UCL Careers Essentials

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We'reAllEars...