

## Job Description and Person Specification

<b>Post</b>	<b>University Lecturership (NTF) in Computer Science (Verification)</b>
<b>Department/Faculty</b>	<b>Department of Computer Science</b>
<b>Division</b>	<b>Mathematical, Physical and Life Sciences</b>
<b>College</b>	<b>In association with Linacre College</b>
<b>Salary</b>	<b>Up to £57,431</b>

### Overview of the post

Applications are invited for the post of University Lecturer in Computer Science (Verification) with effect from 1 October 2012 or as soon as possible thereafter. The successful candidate will also be appointed to a Non-Tutorial Fellowship at Linacre College.

Applicants are invited in any area of theory and practice of automated verification and synthesis which strengthens and/or broadens the activities of the Verification theme.

Queries about the post should be addressed in the first instance to Elizabeth Walsh at [Elizabeth.walsh@cs.ox.ac.uk](mailto:Elizabeth.walsh@cs.ox.ac.uk) or telephone: +44 (0)1865 283503.

All enquiries will be treated in strict confidence; they will not form part of the selection decision.

### Duties of the post

The University Lecturer will be a member of both the University and the College community. He or she will be part of a lively and intellectually stimulating research community which performs to the highest international levels in research and publications and will have access to the excellent research facilities which Oxford offers. He or she will have a role to play in the running of the College as a member and trustee of its Governing Body.

The main duties of the post are as follows:

#### *Research*

- to engage in original research in the field of computer science, with an emphasis on verification;
- to secure research funding and engage in the management of research projects;
- to disseminate his/her research through publication in scholarly journals, participation in international conferences and seminars, and through other media;
- to engage in knowledge transfer activities.

### *Teaching*

- to carry out teaching at undergraduate and graduate level including lectures, classes, demonstrations, and project supervision, under the direction of the Head of Department;
- to supervise research students.
- to undertake additional duties which are broadly equivalent to the teaching stint of six hours per week during full term undertaken by those University Lecturers who are Tutorial Fellows of colleges. These duties which may, for example, be undergraduate or graduate teaching, will be under the direction of the Head of Department, who may in some cases assign some or all of them to one or more colleges.

### *Examining*

- to take part in University examining as and when requested to do so;

### *Administration*

- to participate in the administration of the department as and when requested by the Head of Department;
- to take part in the administration and governance of the College by participation in the Governing Body and other committees.

## **Person specification**

Applications will be judged only against the criteria which are set out below. Applicants should make sure that their application shows very clearly how they believe that their skills and experience meet these criteria.

Oxford is committed to fairness, consistency and transparency in selection decisions, and unsuccessful applicants may request feedback against the published selection criteria for the specific post. (We are, however, unable to provide general advice about the suitability of applicants' cvs for future vacancies in Oxford or elsewhere.) Chairs of selection committees will be aware of the principles of equality of opportunity and fair selection and there will be a member of each gender wherever possible.

The successful candidate will be expected to carry out research of an internationally recognised standard on a topic appropriate for the Verification theme. It should be noted that this no longer includes computer security as a separate Security theme is currently being formed.

The successful candidate will demonstrate the following:

### *Essential*

- (a) A doctorate in an appropriate field;
- (b) Proven post-doctoral research record of high quality at international level;
- (c) Ability to attract research funding and develop an independent programme of research;
- (d) Experience of and ability to teach effectively, both at undergraduate and graduate level, a wide range of topics within the field of computer science;
- (e) Ability to supervise graduate students;
- (f) Excellent interpersonal skills necessary for undertaking teaching at both undergraduate and graduate level and the pastoral care of students;
- (g) Ability and willingness to undertake the full range of administrative duties both within the department and the College.

(h) Ability to contribute to course development, including but not restricted to their area of specialisation.

*Desirable*

- (i) Excellent track record of obtaining research grants;
- (j) Experience of research collaborations at national and international level;
- (k) Experience of supervising research students;
- (l) Good communication and organisational skills.

## How to apply

There is no application form. Applications must include:

- your full contact details including email and full postal addresses, and a telephone number;
- a covering letter or statement (clearly stating the post title) explaining how you meet the criteria set out above;
- a full CV and publications list; details of teaching experience including a description of teaching approach, and a statement of research interests and plans;
- an indication of where you first heard about this post;
- the names and contact details (postal and e-mail addresses and telephone number) of **three** referees.

You should contact all three of your referees (not more than two of whom should be from the same institution) before applying, to ensure they are aware of your application and of the requirements for the post, and to ensure that they are willing to provide a reference for you for this post.

**Candidates must ask their referees to consider the further particulars and write directly to the above address (fax +44 (0)1865 273832 or email is sufficient) so that references arrive by the closing date.**

Applications should be sent to [job19@cs.ox.ac.uk](mailto:job19@cs.ox.ac.uk) or posted to PA to the Head of Department, Oxford University Department of Computer Science, Wolfson Building, Parks Road, Oxford OX1 3QD.

The deadline for applications is **Friday 6<sup>th</sup> January 2012.**

Should you have any queries about how to apply, please contact Elizabeth Walsh [Elizabeth.walsh@cs.ox.ac.uk](mailto:Elizabeth.walsh@cs.ox.ac.uk) or telephone: +44 (0) 1865 283503

Applications for this post will be considered by a selection committee containing representatives from both the Department of Computer Science and Linacre College. The selection committee is responsible for conducting all aspects of the recruitment and selection process; it does not, however, have the authority to make the final decision as to who should be appointed. The final decision will be made by the Mathematical, Physical and Life Sciences divisional board and the governing body of Linacre College on the basis of a recommendation made by the selection committee. No offer of appointment will be valid, therefore, until and unless the recommendation has been approved by both the divisional board and the governing body, and a formal contractual offer has been made.

All applications will be acknowledged after receipt and will be considered by the selection committee as soon as possible after the closing date. Candidates short-listed for the post will be interviewed by the selection committee and will be invited to give a short lecture of about twenty-five minutes' duration on their research interests. The lecture should be designed for a general audience of computer scientists and should be based on some aspect of the candidates' own research. It is hoped to hold the interviews in the week beginning Monday 5<sup>th</sup> March, 2012.

**The appointment will be subject to satisfactory completion of a medical questionnaire and the provision of proof of the right to work in the UK.**

# Information for Applicants for the University Lecturership in Computer Science (Verification)

## The University

The University of Oxford aims to sustain excellence in every area of its teaching and research, and to maintain and develop its position as a leader amongst world-class universities. Placing an equally high value on research and on teaching, the colleges, departments and faculties of Oxford aspire both to lead the international research agenda and to offer a unique and exceptional education to our undergraduate and graduate students.

Oxford's self-governing community of scholars includes university professors, readers, and lecturers, college tutors, senior and junior research fellows and over 2,500 other university research staff. The University aims to provide facilities and support for colleagues to pursue innovative research and outstanding teaching, by responding to developments in the intellectual environment and society at large, and by forging close links with the wider academic world, the professions, industry and commerce. The Strategic Plan, detailing strategy for the period 2008-12, can be found at <http://www.admin.ox.ac.uk/prr/planningcycle/stratplan.shtml>.

Research at Oxford combines disciplinary depth with an increasing focus on inter-disciplinary and multi-disciplinary activities addressing a rich and diverse range of issues, from deciphering ancient texts and inscriptions using modern scientific and computational methods developed in Oxford, through to global health, climate change, ageing, energy and the effects on our world of rapid technological change.

Oxford seeks to admit undergraduate students with the intellectual potential to benefit fully from the college tutorial system and small group learning to which Oxford is deeply committed. Meeting in small groups with their tutor, undergraduates are exposed to rigorous scholarly challenge and learn to develop their critical thinking, their ability to articulate their views with clarity, and their personal and intellectual confidence. They receive a high level of personal attention from leading academics.

Oxford has a strong postgraduate student body which now numbers about 7,000, well over a third of the full-time students. Postgraduates are attracted to Oxford by the international standing of the faculty, by the rigorous intellectual training on offer, by the excellent research and laboratory facilities available, and by the resources of the museums and libraries, including one of the world's greatest libraries, the Bodleian.

For more information please visit [www.ox.ac.uk](http://www.ox.ac.uk)

## The Mathematical, Physical, and Life Sciences Division

The Mathematical, Physical, and Life Sciences Division (MPLS) is one of the four academic divisions of the University. Oxford is widely recognised as one of the world's leading science universities. In the 2008 UK Research Assessment Exercise over 70% of research activity in MPLS was judged to be world-leading (4\*) or internationally excellent (3\*), and Oxford was ranked first in the UK across the mathematical sciences as a whole.

The MPLS division's ten departments and three interdisciplinary units span the full spectrum of the mathematical, computational, physical, engineering and life sciences, and undertake both fundamental research and cutting-edge applied work. We have over 6,000 students and research staff, and generate over half of our funding from external research grants. Our research addresses major societal and technological challenges and is increasingly interdisciplinary in nature. We collaborate closely with colleagues in Oxford across the medical sciences, social sciences and humanities, as well as with researchers from around the world.

For more information, please visit: <http://www.mpls.ox.ac.uk/>

## The Department of Computer Science

The Department of Computer Science was originally established in 1957. It is one of the UK's leading Computer Science Departments (ranked first in a number of newspaper rankings, and third in terms of research power). In the RAE in 2008, 80% of the submitted research was found to be in the top two tiers, either 4\* (world-leading) or 3\* (internationally excellent). Many members of the Department are active in externally sponsored research, with both government and industrial funding. At present there are 48 members of academic staff and over 80 research staff.

The department has close links with government, industry, and other departments within the University. Among the latter are Mathematics, Engineering, Physics and a number of life sciences departments. It has a major role in the rapidly-developing field of e-Science, an essentially interdisciplinary activity which is at present attracting major funding from a number of sources. At present it holds £37m in external research contracts.

Currently, research in the department is managed in seven themes following a recent realignment and expansion of previous groups. *Computational Biology* (led by Professor David Gavaghan, and including Professors Kevin Burrage and Helen Byrne) is one of the world's leading groups building computational models of biological systems; *Foundations, Logic and Structures*, (leader, Professor Samson Abramsky) which includes groups working on quantum information and computation (Professor Abramsky and Professor Bob Coecke), game semantics and verification (Professor Luke Ong) and constraints (Professor Peter Jeavons); *Information Systems* (jointly led by Professors Georg Gottlob and Ian Horrocks) including Professor Stephen Pulman (Computational Linguistics); *Programming Languages* (led by Professor Oege de Moor); *Verification* (leader Professor Marta Kwiatkowska) covering probabilistic and software model checking, with concurrency (Professor Bill Roscoe and Professor Gavin Lowe), and automated verification of hardware (Professor Tom Melham); and *Software Engineering* (Professor Jim Davies). Software Engineering, together with Computational Biology, provides the main focus of the department's work on e-Science. A *Security* theme (led by Roscoe) is being created to unite a number of existing and new academics working across this area and including a new *Cybersecurity Centre* which will be established shortly (under the leadership of Professor Sadie Creese).

## Linacre College

There are 38 self-governing and independent colleges at Oxford, giving both academic staff and students the benefits of belonging to a small, interdisciplinary community as well as to a large, internationally-renowned institution. The collegiate system fosters a strong sense of community, bringing together leading academics and students across subjects, and from different cultures and countries.

Linacre is a vibrant and progressive post-graduate college of Oxford University. All 450 students of the college have completed a first degree and are now studying for an advanced qualification. Linacre's prime objective is to provide the best possible environment, both intellectual and social, for its Fellows and graduate students.

There are some 50 Fellows, the majority of whom are Professors, Readers, and Lecturers in a wide range of University Faculties. The Fellowship includes some of Oxford's most distinguished scholars. About half the student body is from overseas, representing over 50 countries; they are divided almost equally between the sciences, arts and humanities. The college has 19 administrative staff, three chefs and large catering and housekeeping teams.

The college was founded in 1962 to provide a community for Oxford's growing number of post-graduate students. It was named after Thomas Linacre, a distinguished Oxford humanist and medical scientist of the early 16th Century, whose breadth of learning symbolised the new College's multi-disciplinary purpose and ideal. In 1986 the College received its Royal Charter and is now a fully independent, self-governing, registered charity. The College is governed by its Fellows and student representatives. The College Principal has overall management responsibility for the College and

its staff. He is supported by a senior management team consisting of the Vice Principal, Senior Tutor, Bursar and the Director of Development. Linacre is among the least well-endowed of the Oxford colleges.

Linacre was the first college in Oxford to accept both men and women on an equal basis. It is unusual among Oxford colleges in having no senior common room. The Fellows, staff and students share the same facilities and eat together in the dining hall in order to cultivate an egalitarian academic community. The College is family-friendly and has a strong environmental ethos.

Drawing on its current academic strengths, Linacre is making a particular contribution to the support and promotion of environmental studies in the University. In 1990 the College established a major series of public lectures on environmental issues, the Linacre Lectures; and it has close links with the University's Environmental Change Institute.

The college has been voted as Oxford's most environmentally friendly college for six years in succession by the University Students' Union. The Abraham Building, completed in 1994, was named the UK's 'Green Building of the Year'.

The college is now housed in fine buildings, most of which were purpose-built, on St Cross Road, surrounded on three sides by parks and playing fields, in a convenient location on the edge of the University Science Area and within easy reach of all the main University Departments and Libraries. The college has a number of modern teaching and seminar rooms, a well-equipped gym and small but exquisite gardens.

The college is a busy academic community throughout the year. Unlike undergraduates, graduate students remain in residence for almost the entire year. The College has only two brief periods a year when the dining room and administrative offices are closed.

Fellowships at Linacre are non-stipendiary but Fellows are entitled to free lunches and dinners in College when the College kitchens are open. They may also apply for small grants to assist with research expenses. Fellows are expected to co-operate in the running of the College. The main commitment is to attend meetings of the Governing Body which normally meets three times each term. There are also various standing committees of the Governing Body which require members, but this commitment is not arduous. Linacre is not able to offer Fellows personal study-bedrooms in College; but they may reserve rooms for tutorials, seminars, social functions, and to accommodate guests. There are no teaching duties but all Fellows are expected to act as College Advisers to up to ten students to help them with any personal as well as academic problems which they may encounter.. The College has arrangements to assist with the entertainment of students by their Advisers.

Additional information about Linacre is available on the college's website [www.linacre.ox.ac.uk](http://www.linacre.ox.ac.uk)

## Standard Terms and Conditions

### *Salary, benefits and pension*

The successful candidate will be appointed on the Oxford scale for university lecturers (the salary being in the range of £42,733 - £57,431). Lecturers appointed below the top of this range will receive annual increments until they reach the top point. There is also an annual 'cost-of-living' review. Departments may also, in wholly exceptional cases, propose the awarding within the substantive scale of additional increments to lecturers at any time during their appointment.

Additional remuneration is currently paid to those undertaking examining and graduate supervision.

Eligible staff may join the Universities Superannuation Scheme. Details are available on the website at <http://www.admin.ox.ac.uk/finance/pensions/uss/>.

### *Length of appointment*

Upon completion of an initial period of appointment (which is normally five years), a university lecturer is eligible for reappointment until retiring age, subject to the provisions of the Statutes and Regulations of the University. Evidence of lecturing competence and of substantial progress in research are prerequisites for reappointment to the retiring age.

At present the University's normal retirement date for academic and related staff is 30 September preceding the 66th birthday, except if the successful candidate can establish vested rights, as defined in the University's statutes (details available on request), to retirement at 67 or later, the date of retirement will not normally be later than the 30 September immediately preceding the 68th birthday.

For all academic and academic-related staff the University has adopted a retirement age of 30 September before the 68th birthday. There is a procedure for requesting an extension of employment beyond that date.

### *Sabbatical leave and outside commitments*

All lecturers may apply for sabbatical leave to allow them to focus on their research. In general, one term of leave is available for each six terms worked. This leave may either be taken as one term of leave after 6 terms of service, or accumulated and taken as one year of leave after 6 years of service.

Lecturers may also spend up to 30 working days in each year on projects outside their employment duties, such as consultancy, spin-out activity and membership of research councils and other bodies. There is no limit to the amount of money which staff may earn from these activities. Full details are available on the university website at <http://www.admin.ox.ac.uk/ps/staff/codes/outsidecov.shtml>. Guidance on ownership of intellectual property (<http://www.admin.ox.ac.uk/statutes/regulations/182-052.shtml>) and managing conflicts of interest (<http://www.admin.ox.ac.uk/researchsupport/integrity/conflict/policy/>) is also available on the university website.

### *Relocation expenses*

Subject to HMRC regulations and the availability of funding, a relocation allowance may be available. Further details are available on the website at <http://www.admin.ox.ac.uk/finance/expenses/relocationscheme/>



### *Family support*

The University has generous maternity and adoption leave arrangements, and also offers support leave to fathers and partners. Details are available on the website at <http://www.admin.ox.ac.uk/ps/staff/family/> and <http://www.admin.ox.ac.uk/ps/staff/academic/matleave.shtml>.

All staff are eligible to apply to use the University nurseries (although there is a long waiting list for nursery places), and the full range of tax and National Insurance savings scheme is in operation. Details are available on the University's childcare website at <http://www.admin.ox.ac.uk/eop/childcare/>.

The University will try to accommodate flexible working patterns as far as possible and there is considerable flexibility in the organisation of duties. More information on family support and flexible working policies is available on the website at <http://www.admin.ox.ac.uk/ps/staff/family/>.

### *Facilities and services*

The University has a range of facilities and benefits for its staff; more details are available on the website at <http://www.admin.ox.ac.uk/ps/staff/benefits/>.

The University Disability Office provides support to staff and students with a disability and may be contacted through its website at <http://www.admin.ox.ac.uk/eop/disab/>.

### *Equality of opportunity*

The policy and practice of the University of Oxford require that all staff are offered equal opportunities within employment. Entry into employment with the University and progression within employment will be determined only by personal merit and the application of criteria which are related to the duties of each particular post and the relevant salary structure. In all cases, ability to perform the job will be the primary consideration. Subject to statutory provisions, no applicant or member of staff will be treated less favourably than another because of age, disability, gender reassignment, marriage or civil partnership, pregnancy or maternity, race, religion or belief, sex, or sexual orientation.

### *Medical questionnaire and the right to work in the UK*

The appointment will be subject to the satisfactory completion of a medical questionnaire and the provision of proof of the right to work in the UK.

Applicants who would need a work visa if appointed to the post are asked to note that under the UK's points-based migration system they will need to demonstrate that they have sufficient points, and in particular that:

- (i) they have sufficient English language skills (evidenced by having passed a test in English, or coming from a majority English-speaking country, or having taken a degree taught in English)

and

- (ii) that they have sufficient funds to maintain themselves and any dependents until they receive their first salary payment.

Further information is available at:

<http://www.ind.homeoffice.gov.uk/workingintheuk/tier2/general/>

### *Special arrangements*

Oxford welcomes applications from candidates who have a disability. These documents will be made available in large print, audio or other formats on request. Applicants invited for interview will be asked whether they require any particular arrangements to make the interview more convenient and effective for them.

### *Data Protection*

All data supplied by candidates will be used only for the purposes of determining their suitability for the post<sup>1</sup> and will be held in accordance with the principles of the Data Protection Act 1998 and the University's Data Protection Policy (available on the website at <http://www.admin.ox.ac.uk/councilsec/dp/policy.shtml>).

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<sup>1</sup> But NB if the person appointed to the post is a migrant sponsored under the UK's points-based migration system, we are required to retain the applications of all shortlisted candidates for the duration of the sponsorship or for one year, whichever is the shorter.

**PAY SCALE FOR UNIVERSITY LECTURERS WITH NON-TUTORIAL FELLOWSHIPS**

(with effect from 1 August 2010)

<b>Main Lecturer Grade (10a)</b>		
Scale point	National Pay spine	Total Salary
11	52	£57,431
10	51	£55,758
9	50	£54,133
8	49	£52,556
7	48	£51,025
6	47	£49,539
5	46	£48,096
4	45	£46,696
3	44	£45,336
2	43	£44,016
1	42	£42,733