

UNIVERSITY OF OXFORD

**Mathematical, Physical and Life Sciences Division
Department of Physics**

in association with Mansfield College

UNIVERSITY LECTURESHIP IN THEORETICAL PARTICLE PHYSICS

Description of Joint Appointment and Application Procedure

Applications are invited for a University Lectureship in Theoretical Particle Physics. The successful candidate will also be appointed to a Non-Tutorial Fellowship at Mansfield College. The salary will be on a scale up to £56,917 per annum. Details of the Department and further details of the University post are given in Section II and further details of the College post are given in Section III.

Duties

- (i) to engage in research at an internationally competitive level;
- (ii) to participate in the teaching and administrative work of the Physics Department in both term and vacation under the direction of the Chairman of Physics and the Head of the Rudolf Peierls Centre for Theoretical Physics;
- (iii) to be responsible for the supervision of graduate students when required;
- (iv) to examine for the University when required to do so;
- (v) to participate in applications for research funding and the supervision of postdoctoral research assistants;

Selection Criteria

The successful candidate will be expected to satisfy the following selection criteria, which have been agreed by the Department of Physics and Mansfield College:

- have a doctorate in a relevant branch of theoretical particle physics;
- have an excellent (by international standards) record of theoretical research in beyond the Standard Model particle physics or a closely related field that complements and enhances the particle physics group's existing strengths. This should be supported by a strong publication list, commensurate with career stage;
- demonstrate the ability or potential to lead an internationally competitive programme in theoretical particle physics and to attract funding for research;

- have ability and readiness to teach undergraduates in both the Department of Physics and show evidence of having the skills to be an effective teacher across a range of student abilities. In particular, be able to teach the first year syllabus and a substantial part of the syllabus for the second and third years of the course and to contribute specialist knowledge in the teaching of particle physics;
- be committed to graduate teaching, be able to teach graduate courses, to supervise graduate students and to direct post-doctoral associates in theoretical particle physics.
- demonstrate willingness and ability to participate in the full range of duties in the Department

Application Procedure

Applicants should submit, in PDF format, a letter of application setting out how they meet the selection criteria, a curriculum vitae, list of publications, details of teaching experience, a statement of research interests, and the names and addresses of three referees only (not more than two of whom should be from the same institution). Applications should be sent by email to TPFacultyJob@physics.ox.ac.uk, quoting reference DR09/004, and must arrive no later than 22nd December 2009. Applicants should ask their referees to email their recommendation letters separately to the same address by the same deadline.

Short-listed candidates will be interviewed by a Joint University and College Selection Committee. The selection procedure will include a research presentation lasting 25 minutes, which will be open to members of the university, and an interview with members of the Selection Committee that will cover both research and teaching. It is planned to hold the research presentations and interviews in the week beginning 1st February 2010.

Candidates selected for interviews will be able to meet some of the staff who are not members of the Selection Committee. This does not form part of the selection process.

Those interviewed will be invited to lunch in College. This lunch does not form part of the selection process. If necessary, candidates will be offered overnight accommodation during the interview period.

All reasonable interview expenses will be reimbursed.

The recommendation of the selection committee will be subject to ratification by the Divisional Board and the Governing Body of Mansfield College.

Section II

UNIVERSITY OF OXFORD

UNIVERSITY LECTURERSHIP IN THEORETICAL PHYSICS

FURTHER DETAILS CONCERNING THE UNIVERSITY POST

A. The Department

The University of Oxford employs around 9,000 academic, research and support staff across a wide range of academic disciplines. Its mission is to achieve and sustain excellence in every area of its teaching and research, maintaining and developing its historical position as a world-class university, and enriching the international, national, and regional communities through the fruits of its research and the skills of its graduates.

The academic administration of the University is conducted through four divisions: Humanities; Social Sciences; Mathematical, Physical and Life Sciences; and Medical Sciences. The Mathematical, Physical and Life Sciences Division consists of ten constituent departments: the Department of Chemistry, Computing Laboratory, the Department of Earth

Sciences, the Department of Engineering Science, the Department of Materials, Mathematical Institute, the Department of Physics, Department of Plant Sciences, Department of Zoology and Statistics. The division provides a framework for interdisciplinary teaching and research. There are also links with the Medical Sciences Division.

The Department of Physics at the University of Oxford is made up of seven sub-departments of which one is The Rudolf Peierls Centre for Theoretical Physics and the others are Astrophysics, Atmospheric Oceanic and Planetary Physics, Atomic and Laser Physics, Condensed Matter Physics, Particle and Nuclear Physics and Teaching. It is one of the largest Physics departments in the UK, with approximately 100 permanent academic staff, 230 other postdoctoral researchers and visitors, 300 graduate students and 650 undergraduates.

The management of the department is in the hands of the Chairman of Physics, currently Professor Roger Davies, advised by the Physics Management Committee. Members of all sub-departments take part in teaching and matters such as examinations, discussions of syllabuses, lectures and liaison with undergraduates and postgraduates.

Theoretical Physics Sub-Department (The Rudolf Peierls Centre for Theoretical Physics)

The Theoretical Physics sub-department, headed by Dr John Wheeler, currently has 19 permanent staff members, 1 departmental lecturer, 4 active emeritus academics, 5 research fellows, 15 postdoctoral research assistants, 56 graduate students and typically 10 long-term visitors and associates. Members of the sub-department have a wide range of research interests covering condensed matter physics, particle physics and astrophysics. There is considerable interaction between the groups and several research activities span these categories. The sub-department runs a full course of lectures for new graduate students and a general Theoretical Physics Seminar in addition to more specialised seminars organised by the individual groups.

The Particle Physics Theory group consists of 9 permanent or long term researchers, 4 postdoctoral research assistants and fellows, and 28 graduate students and is supported by a STFC Rolling Grant, an ERC grant and EU networking grants. The group is engaged with a wide range of topical issues, many of which connect with each other and with the interests of the Theoretical Astrophysics group, as well as those of the sub-departments of Particle and Nuclear Physics and Astrophysics, and also the Mathematics Institute. The Standard Model and its extensions are investigated from several points of view; relevance for phenomenology in the next decade, in particular experiments at the LHC and neutrino oscillation experiments; astroparticle physics and cosmology including involvement in Auger and IceCube. Topics in beyond the Standard Model physics include strings, supersymmetric and other candidate unified theories of all the fundamental interactions including gravity. Quantum field theory underlies most of this work and this is also studied on the lattice, particularly with regard to the strong interactions and finite temperature phenomena, and also in the context of conformal field theory and the AdS/CFT correspondence. String theory is also actively studied with emphasis on string compactification and string cosmology.

The Astrophysics group currently consists of 3 permanent researchers, 4 postdoctoral research assistants and 10 graduate students. The current research interests include galaxy formation and cosmology, galactic dynamics and stellar chromospheres and coronae.

The Condensed Matter Theory Group currently consists of 8 permanent or long-term researchers, 9 postdoctoral research assistants and 18 graduate students. The research interests of the group are broad and include: disordered systems, soft condensed matter, statistical physics and strongly correlated systems.

Detailed information about the Department of Physics may be found at <http://www.physics.ox.ac.uk> from which there is a link to the Theoretical Physics page.

B. Standard Terms and Conditions

1. Applications for this post will be considered by a selection committee containing representatives from both the Department of Physics and Mansfield College. The selection committee is responsible for conducting all aspects of the recruitment and selection process, including making a recommendation on who should be appointed. The recommendation is made to the Mathematical, Physical and Life Sciences divisional board and to the governing body of Mansfield College, which make the final decision on the appointment. Therefore, an offer of appointment is only valid once the divisional board and the governing body have approved the recommendation of the selection committee and a formal contractual offer has been made.

2. The successful candidate will be appointed on the Oxford scale for university lecturers without tutorial fellowships, (£42,351-£56,917). 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.

The lecturer will have the option of becoming or remaining a member of the Universities Superannuation Scheme (USS).

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

4. 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.

The University's normal retirement date for university lecturers is 30 September immediately preceding the 66th birthday, except that, if the successful candidate can establish vested rights, as defined in the University's statutes (details available on request), in retirement at age 67 or later, then the date of retirement will not normally be later than the 30 September immediately preceding the 68th birthday.

5. All appointments are subject to the relevant provisions of the Statutes and Regulations of the University in force from time to time, as published from time to time in the University Gazette.

All university lecturers, with other members of the academic staff and certain senior academic-related staff, are normally members of Congregation, which is the University's ultimate governing body. Congregation's approval is required for all university statutes or amendments to statutes, and for major policy decisions, and the members of Congregation constitute the electorate for ten of the members of the main executive body (the Council of the University) and for members of a number of other university committees. Twenty or more members of Congregation may initiate the discussion by Congregation of matters of university policy, and any two members may ask questions about the policy or administration of the University. The person appointed to this post will receive full details soon after he or she takes up the appointment.

6. The holder of this post is eligible to apply for sabbatical leave. In general, one term of sabbatical leave is available for each six terms of qualifying service: qualifying service is built up on a 'rolling' basis, so that leave which is not taken is not lost (although qualifying service does not accrue beyond the maximum of 18 terms). Further details are available on request.

7. The University encourages links with industry and other outside bodies. Although the holding of outside appointments such as consultancies must be approved by the head of department, no limit as such is set on the amount of money individuals may receive in this way. The criterion is the amount of time such appointments take up: a maximum of 30 days per annum may be spent on such activities before any deduction in stipend is considered.

8. The Statutes and Regulations of the University record the extent of the University's claims to intellectual property, and the proportions in which exploitation revenues are shared with researchers. Copies of the relevant extracts are available on request.

9. All staff participate in the University's appraisal scheme which is currently under review.

10. The University has generous maternity leave arrangements. Provided that they have at least 26 weeks' service with the University at the fifteenth week before the expected week of childbirth, women may take up to 26 weeks leave on full pay, plus 13 weeks SMP, plus a further 13 weeks unpaid leave. Arrangements are available to enable a phased return to full duties; for women to return to work on a part-time basis after the birth of their child; and for paternity leave. Requests for flexible working arrangements will be considered.

11. The University has three subsidised nurseries and also subsidises places at some local nurseries, although at present there is a waiting list. In addition, staff have access to a childminding network. There is also a salary sacrifice scheme whereby parents with children at university nurseries are able to save on income tax and national insurance contributions, and a virtual voucher scheme for parents with children not at university nurseries or placed with childminders through the network whereby a saving is made on national insurance contributions. There is also a holiday play scheme for school-age children. Further information may be obtained from the childcare website (www.admin.ox.ac.uk/eop/child) or by e-mailing childcare@admin.ox.ac.uk, or writing to the Diversity and Equal Opportunities Unit, University of Oxford, University Offices, Wellington Square, Oxford OX1 2JD.

12. *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 his or her gender, marital or civil partnership status, sexual orientation, religion or belief, racial group, age or disability.

Where suitably qualified individuals are available, selection committees will contain at least one member of each sex.

13. All data supplied by applicants will be used only for the purposes of determining their suitability for the post¹ and will be held in accordance with the principles of the Data Protection Act 1998 and the University's Data Protection Policy.

14. 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.

Applicants who would need a work visa if appointed to the post are asked to note that under the UK's new 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 basic 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 dependants until they receive their first salary payment.

Further information is available at:
<http://www.ukba.homeoffice.gov.uk/workingintheuk/tier2/generalarrangements/eligibility/>.

15. All reasonable interview expenses will be reimbursed. Removal expenses and travelling expenses in connection with the move to Oxford of the successful candidate are generally paid in full in appropriate cases. Professional expenses of up to £6,500 also are available where appropriate to cover solicitors' and other costs in connection with a move. Further details are available on request.

16. Applicants should submit, in PDF format, a letter of application setting out how they meet the selection criteria, a curriculum vitae, list of publications, details of teaching experience, a statement of research interests, and the names and addresses of three referees only (not more than two of whom should be from the same institution). Applications should be sent by email to TPFacultyJob@physics.ox.ac.uk, quoting reference DR09/004, and must arrive no later than 22nd December 2009. Applicants should ask their referees to email their recommendation letters separately to the same address by the same deadline. The University

¹ But NB if the appointee to the post is a migrant sponsored under the UK's new points-based migration system, we are required to retain all applications for the duration of the sponsorship.

will assume that it is free to approach referees at any stage unless the candidate's application stipulates otherwise. Candidates who wish a referee or referees to be approached only with their specific permission and/or if they are being called for interview on the final shortlist or are in receipt of a conditional offer are asked to state such requirements explicitly alongside the details of the relevant referee(s). There is no application form, and separate application is not required for the college post.

It is planned to hold interviews in the week beginning 1st February 2010.

APPENDIX B

SALARY SCALE FOR UNIVERSITY LECTURERS WITHOUT TUTORIAL FELLOWSHIPS (with effect from October 2008)

The following scale proceeds by annual increments:

Main Lecturer Grade		
Pay spine	Salary	Scale point
52	£56,917	11
51	£55,259	10
50	£53,650	9
49	£52,086	8
48	£50,569	7
47	£49,096	6
46	£47,666	5
45	£46,278	4
44	£44,930	3
43	£43,622	2
42	£42,351	1

UNIVERSITY OF OXFORD

MANSFIELD COLLEGE

FURTHER DETAILS CONCERNING THE COLLEGE ASSOCIATION

A. *The College*

Mansfield College proposes to elect the University Lecturer in Theoretical Physics to a Non-Tutorial Fellowship at Mansfield College. The appointee will have no contractual duties for the College, or remuneration from the College. Although there is no office space available in the College the appointee will receive full dining rights, unrestricted rights to bring guests for lunch and dinner, use of College meeting rooms, the College wine cellar, and other College facilities.

A. *Mansfield College*

Throughout its history, Mansfield has worked hard to make an Oxford education available to previously excluded groups. Most recently this has taken the shape of Mansfield's design and leadership of a consortium of Oxford colleges, promoting application from Further Education colleges. At its foundation in 1838 as Spring Hill College it offered education to those who could not gain admittance to Oxford University because they were not members of the Anglican church. In 1886 the College moved to its present site in Oxford under the name of its founders, George and Elisabeth Mansfield. In 1914, some sixty years before most Oxford Colleges, Mansfield admitted its first female student. Mansfield is the smallest college of Oxford University with approximately 200 undergraduates and 70 graduates, but maintains a healthy mix of subjects at undergraduate degree level. It is one of the closest colleges to the University science area and Physics Department (less than ten minutes walk away). The current principal is Dr Diana Walford, former head of the Public Health Laboratory Service.

Further information about the College and its members can be found at www.mansfield.ox.ac.uk.

B. *Physics at Mansfield*

Mansfield offers a thriving 'subject family' of academic staff and students in Physics, Engineering and Materials, providing a lively and stimulating academic environment. Our Physics Fellows span a range of disciplines, and include the renowned astrophysicist and current President of the Institute of Physics Professor Jocelyn Bell Burnell, Professor Stephen Blundell, currently Head of Condensed Matter Physics Sub-Department, whose main interests are in magnetism and superconductivity, and Professor Steven Biller, an experimental Particle Physicist, whose main interests are in neutrino physics and particle astrophysics. We have one Fellow and one Senior Research Fellow in Engineering, two Tutorial Fellows in Materials, and the College is currently appointing a Professorial Fellow in Energy Materials. At a strategic level the College is keen to develop its science base, particularly in research, and the three Junior Research Fellowships that we award every two years are predominantly in science subjects. Mansfield admits six undergraduates a year in Physics. We currently have twelve graduate students in Physics, Engineering and Materials subjects and it is a priority to increase our graduate numbers within the subject family.

