Job Description – Senior Lecturer in Statistics

About the Role

The School of Mathematics and Statistics is a thriving community of teachers and researchers, known for its innovative development and presentation of teaching materials that can be flexibly studied by students at a distance, taking advantage of the new opportunities afforded by recent advances in technology.

The successful candidate will be based at the main Open University campus in Milton Keynes and will be expected to contribute to the Statistics Group’s research and teaching activities.

The post-holder will be expected to contribute to future REF submissions, explore external funding opportunities and supervise PhD students. In addition, as several senior members of the Statistics Group have recently retired, the successful candidate will be expected to take a lead role in developing the research of the group.

Our courses are taught through distance learning and the successful candidate will contribute to developing and delivering teaching materials for our statistics curriculum. Teaching at the Open University is collaborative and team-based, and the ability to work successfully as part of a team is an essential part of the job.

The teaching materials are primarily written texts, which increasingly also make use of online technologies, such as online quizzes, activities and short videos, to enhance the learning experience.

For module development, it is crucial that the module texts express statistical and mathematical ideas and concepts clearly, and care and attention to detail in written work is essential. Deadlines for teaching materials can often be tight and inflexible, and the successful candidate must be able to deliver teaching materials on time which are of a high quality.

For modules which students are currently studying the teaching is supported by a team of tutors providing online tutorials and written feedback on assignments. The successful candidate will contribute to timely preparation of annual updates of materials and assessment, student and tutor support on the forums and assessment processes.
Key Responsibilities
The Senior Lecturer will be based at the Open University in Milton Keynes and be expected to:

1. be an active member of the School of Mathematics and Statistics;
2. carry out their own programme of research in theoretical or applied statistics and publish the results of their research in high quality journals;
3. take a lead in developing the research culture of the Statistics Group;
4. contribute to the teaching, examination and administration of undergraduate statistics modules;
5. contribute to the design and production of new undergraduate statistics modules.

Skills and Experience
The post-holder will have

Essential
1. A PhD, or equivalent, in an area of statistics or in a closely related discipline.
2. Excellent communication skills, both oral and written.
3. The ability to work successfully in a team, including the ability to offer and receive constructive criticism.
4. Research leadership skills.
5. The ability to obtain research funding.
6. A proven research track record in statistics, demonstrated by publication in high quality journals.
7. The ability to contribute to high-quality distance learning teaching materials across the statistics curriculum and to plan and work to agreed deadlines.
8. A willingness to contribute to the life of the School beyond the core teaching and research activities.

Desirable
1. Experience of curriculum development and knowledge of a broad range of statistical topics.
2. Experience of successful supervision of postgraduate students.
3. Experience of interacting with the wider statistics community.
4. Appreciation of the particular needs of part-time distance learning students.
5. Enthusiasm for supporting higher education distance learning and for the application of new technologies to teaching and supporting students.
**School of Mathematics and Statistics**

The School is the largest UK provider of higher education mathematics and statistics teaching, with well over 15,000 student registrations each year. Our courses cover both undergraduate and postgraduate curriculum which is taught both inside and outside the UK. The School’s research and teaching covers a broad range of topics in mathematical sciences, across Statistics, Pure and Applied Mathematics, and Mathematics Education.

Within the School there is a vibrant research environment, with about 50 academic members of staff together with postdoctoral researchers and PhD students. Our staff include two LMS Whitehead Prize winners and an IoP Maxwell Medallist, and our emeritus staff include an AMS Whiteman Prize winner, a RSS Bradford Hill Medallist, a Fellow of the American Statistical Association and a Fellow of the Institute of Mathematical Statistics.

In the 2014 REF, 75% of our research outputs were rated as world leading or internationally excellent.

The School provides a friendly, flexible and inclusive working environment and is actively striving to achieve gender equality in terms of opportunity and success for all, both within the School and for our students. The School holds an Athena SWAN bronze award and is currently working towards a silver award. Further information about the School of Mathematics and Statistics is available at [http://www.mathematics.open.ac.uk/](http://www.mathematics.open.ac.uk/).

**Statistics Group Research**

There are currently four statistics research groups in the School.

Bayesian Statistics: including Bayesian dynamic graphical models for forecasting multivariate time series, prior distribution assessment for multivariate models and non-linear Bayesian forecasting.

Medical Statistics: exploring imputation methods for missing variables across epidemiological studies, statistics methods for single-case studies, usage of experts’ opinion to inform prioritization in medical research and clinical trials.

Multivariate Statistics: including research into subjective probability distribution in multivariate settings, penalized/sparse methods for dimension reduction, extending classical multivariate techniques for analysing data with more variables than observations and principal component analysis.

Biostatistics: modelling of human phenotypes and disease, such as facial morphology, or pain sensitivity; statistical genetics including analysing characteristics from a genetic perspective and studying the genetic patterns of human populations.

There is also a broad range of research into statistical methodology and applications undertaken by members of the statistics group which are not covered by these four areas such as: statistical and computational methods in engineering, space-time modelling of pollution processes, statistical aspects of chaotic maps, sonification and mixed methodology of qualitative and quantitative research. There are strong ongoing collaborations in areas such as medicine, neuropsychology and earth sciences. In addition there is a strong contribution from the group into the School’s mathematics...
and statistics pedagogical research which directly informs our mathematics and statistics teaching provision.

Members of the Statistics Group play an influential role in statistics nationally and internationally, including involvement with the Royal Statistical Society.

**Statistics teaching**

Students take our statistics modules for many reasons: intrinsic interest, career progression, or to support their studies in other areas of mathematics, computing, science or other disciplines. The main teaching activity of Open University academics consists of working in teams to write modules and the associated assessment materials, although there is scope for face-to-face teaching. The School is proud of the innovative nature of its modules and is constantly striving to be at the forefront of new developments in the teaching of mathematics and statistics. The Statistics Group is responsible for six undergraduate modules in statistics:

*Introducing statistics* (M140) – a level 1 module providing students with an introduction to statistics.

*Analysing data* (M248) – a level 2 module covering core material such as distributions, hypothesis testing, confidence intervals and simple linear regression.

*Practical modern statistics* (M249) – a level 2 module providing an introduction to the specialisms of medical statistics, time series, multivariate statistics and Bayesian statistics.

*Applications of probability* (M343) – a level 3 module covering applied stochastic modelling topics such as Poisson processes, queueing theory, genetics and birth-death processes.

*Linear statistical modelling* (M346) – a level 3 module covering linear and generalised linear modelling.

*Mathematical statistics* (M347) – a level 3 module covering some of the mathematical and theoretical underpinning of statistical techniques.

These modules are compulsory for students enrolled on our RSS accredited Honours degree in Mathematics and Statistics. The modules are also taken by students studying Mathematics, Economics and a range of other Open University qualifications including our new Data Science degree and by students who take individual modules on an ad-hoc basis. In addition these modules feed into two Certificates in Statistics which the RSS publicise on their website. Typically, each year around 1750 students enrol to take our level 1 statistics module, and around 300-400 enrol to take each of our levels 2 and 3 modules. The Open University has an international reputation for its high-quality teaching and the Statistics Group aims to produce some of the best teaching materials within the university.

Further details of these qualifications and modules are available from the University’s website at:

http://www3.open.ac.uk/courses

(choose *Mathematics and Statistics*, and then *Modules*).
**Application and Interview Information**

If you would like to discuss the particulars of this role before making an application please contact the Head of School, Dr Andrey Umerski, on +44(0)1908 652710 or email: andrey.umerski@open.ac.uk.

Your application should contain:

1. an application form completed in full;

2. an up to date curriculum vitae that includes details of relevant teaching and research experience, courses taught, research students supervised, grants received, publications, and professional activities. Please remove any information from your CV that might give an indication of your race, religion or belief, or sexual orientation, as these details are irrelevant to your application. You should include your current salary details;

3. a covering letter (maximum 1250 words) explaining how your experience and skills match the person specification.

As part of the final selection process shortlisted candidates will be invited to give a presentation on their research, including an outline of how they would support the growth of research in the Statistics Group. Candidates will also be asked to produce a piece of teaching material and attend an individual interview.

The decision on the appointment rests solely with the Appointing Committee. The interview panel will be chaired by The Executive Dean or one of the Associate Deans. Other members of the interview panel to be confirmed but will include Dr Andrey Umerski, Head of School of Mathematics and Statistics.