

Research Associate – PERFORMS/PRISM

Job Ref: REQ17904

As part of the University's ongoing commitment to redeployment, please note that this vacancy may be withdrawn at any stage of the recruitment process if a suitable redeployee is identified.

This is an opportunity to work on a ground breaking research project dealing with detecting early signs of breast cancer (PERFORMS) and a new project (PRISM) developing an e-learning approach to train radiologists in interpreting mpMRI imaging for prostate cancer.

PERFORMS

In the UK all women over the age of 50 years are screened for breast cancer every three years by having mammography. These mammographic images are then examined by radiologists using high resolution digital clinical workstations for early signs of potential disease. Such cancer is very rare and often hard to detect as early signs of abnormality can be very small and subtle. Consequently, the PERFORMS self-assessment scheme was designed to aid all UK radiologists detect breast cancer as early as possible.

The PERFORMS scheme has run nationally for 30 years, is a world first scheme, and was designed to help radiologists develop and maintain their mammographic image interpretation skills. The overall background to the scheme is well described in this early article (GALE, A.G., 2003: PERFORMS - a self-assessment scheme for radiologists in breast screening. *Seminars in Breast Disease*, 6(3), pp. 148-152) with more recent work detailed here <http://publications.lboro.ac.uk/publications/all/collated/coyc.html> .

Annually, challenging mammographic cases are selected nationally to use in the scheme. All UK breast screening centres then acquire these from us and download these image sets on to their clinical workstations. Breast radiologists access the PERFORMS reporting App from our website, examine these images and record their clinical decisions. Their data are immediately automatically analysed and information fed back to them; information is also transferred to our SQL database and subsequently further examined (e.g. using Excel and SPSS) to produce a wide range of confidential reports and scientific research papers. Further training is then offered through our website which presents very sophisticated peer review interaction and feedback.

PRISM

Currently, early signs of prostate cancer are very hard to identify accurately and consequently men are subjected to biopsy of the prostate in order to determine if they have cancer. However, a very recent UK clinical trial (PROMIS) has demonstrated that if men have multi-parametric MRI imaging (mpMRI) of the prostate first then many individuals are found not to need a biopsy at all. This is a very important development, but nationally radiologists now need to be trained in interpreting these complex medical images. Working with expert radiologists and Prostate Cancer UK the PRISM project will develop a demonstrator sophisticated e-learning platform to train radiologists in how to interpret these mpMRI images.

THE POSITION

This important post in the Applied Vision Research Centre (AVRC) is diverse and encompasses both a regular service aspect (to provide regular confidential assessments of all UK breast screeners, as described above in PERFORMS) as well as a research and development function (in both PERFORMS and PRISM). The appointee will work alongside other scientists in the team and will: participate in acquiring suitable challenging confidential test sets of mammographic cases and their suitable standardisation prior to distribution to all breast screeners; maintaining links with all UK screening centres and, where needed, to visit such centres and present feedback. It also involves further development of the interactive PERFORMS project website where users log in and access the

PERFORMS App and receive confidential feedback. Additionally, it includes maintaining the scheme's database and performing appropriate data extraction, analyses and aid in the preparation of various reports. There is also the need to liaise with breast screening centres, senior health professionals, hospital IT departments and PACS managers as well as answer any queries from users. For the PRISM project research will include developing an e-learning platform by visiting hospital trusts and liaising with radiologists, gathering test mpMRI images and developing training materials with feedback to participants.

The projects provide a rich source of ongoing research information and so the appointee will research alongside Dr Yan Chen and other colleagues. It is envisioned that this will involve providing key psychology/ergonomics aspects to ongoing research which encompasses the development of new on-line training approaches, new forms of data analyses (e.g. Receiver Operator Characteristic approaches such as JAFROC), the development of a range of computing platforms for examining medical images, and the expansion of the scheme into other radiological areas. If appropriate, there is the potential to register for a part time PhD.

The position is full time and there will also be the opportunity to work on a variety of related exciting state of the art related research projects. Currently we are involved in the introduction of new tomosynthesis 3-dimensional (DBT) breast cancer screening into the UK where we are determining aspects of the training needs. The post would suit someone who has a keen interest in health matters and wishes to translate psychological theory or ergonomic principles into applied health situations.

Job Description

Job Grade: Specialist and Supporting Academic 6

Job Purpose

To carry our research activities on the PERFORMS breast screening project and the PRISM mpMRI in Prostate Cancer Project within the AVRC.

Job Duties

This is a multi-disciplinary role and will involve the following:

- To work with complete confidentiality and sensitivity to participants and their data.
- To undertake research appropriate to the research projects under the direction of the Principal Investigator and in collaboration with other scientists.
- To provide experimental design and perform detailed data and statistical analyses for the projects.
- To review literature and maintain an up-to-date awareness of current and emerging research relevant to the projects.
- To design and carry out research studies for PRISM at NHS Trusts.
- To work as part of team to deliver the PERFORMS scheme to specified deadlines.
- To be responsible for the performance monitoring of participants and using appropriate actions according to the Royal College of Radiology guidelines for PERFORMS.
- To respond to queries from participants relating to their data according to set procedures.
- To be responsible for the collection of radiological opinion data from expert radiologists on both mammographic and prostate radiological images within required timescales.
- To compile such radiological opinion data appropriately for use in the two projects.
- To document all the results and analyses and to produce interim and final reports as required in conjunction with the Principal Investigator.
- To produce journal and conference papers arising from the research.
- To ensure all relevant permissions are obtained for all published information.
- To undertake training and present research findings at conferences as appropriate.
- To deliver a version of the PERFORMS scheme, where required, in postgraduate courses in mammography.

Related Activities

- To research collaboratively with other AVRC staff.
- To work with senior colleagues to identify and secure appropriate research funding.

- To participate in regular project meetings with colleagues and the Centre Head.
- To comply with internal requirements for administrative procedures.
- To supervise research students researching in a relevant area to this project.
- To undertake such other duties as may be reasonably requested and that are commensurate with the nature and grade of the post.

Points to Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility

Reports to the Head of AVRC/Senior Research Fellow.

Person Specification

Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

- 1 – Application
- 2 – Test/Assessment Centre/Presentation
- 3 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Experience of carrying out original research which has been presented or published	1,3
	Previous experience of experimental design and statistical data analysis	1,3
	Previous experience of dealing with people	1,3
Skills and Abilities	Knowledge and use of applied and experimental research methodologies	1, 2, 3
	Competence in IT skills including MS Office and statistical software (SPSS)	1, 2, 3
	Good English verbal and written communication skills	1, 2, 3
	Communication skills sufficient to be able to liaise with a variety of health professionals and also to be able to orally present research findings in a variety of formats	1, 2, 3
	Project management skills and the ability to meet deadlines	1,3
	Accuracy and attention to detail	1,3
	Flexibility	1,3
Training	A willingness to undertake further training as appropriate and adopt new procedures as and when required	1,3
Qualifications	A first degree in psychology, ergonomics or an appropriate cognate subject	1,3
Other	Willingness to travel to research locations within the UK	1,3
	Commitment to observing the University's Equal Opportunities policy at all times	1,3

Desirable Criteria

Area	Criteria	Stage
Experience	Writing of project reports	1,3
	Experience of human factors	1,3
	Familiarity with medical imaging, breast screening or the NHS	1,3
	Experience of computer programming (e.g. Matlab)	1,3
	Web design experience	1,3
	Experience with Drupal web design or other web design software	1,3

Skills and Abilities	Ability to prepare research proposals	1,3
Qualifications	PhD in relevant area	1,3
Training	Aptitude and motivation to assume more senior duties	1,3

Conditions of Service

The position is full-time and fixed-term for one year. Salary will be on Specialist and Supporting Academic Grade 6, £29,799 to £38,883 per annum, subject to annual pay award and at a starting salary to be confirmed on offer of appointment.

The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff, details of which can be found [here](#).

The University is committed to enabling staff to maintain a healthy work-home balance and has a number of family-friendly policies which are available at <http://www.lboro.ac.uk/services/hr/a-z/family-leave-policy-and-procedure---page.html>.

We also offer an on-campus nursery with subsidised places, subsidised places at local holiday clubs and a childcare voucher scheme (further details are available at: <http://www.lboro.ac.uk/services/hr/a-z/childcare-information---page.html>

In addition, the University is supportive, wherever possible, of flexible working arrangements. We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see <http://www.lboro.ac.uk/services/hr/athena-swan/>

Informal Enquiries

Informal enquiries should be made to Dr Yan Chen, Head of AVRC by email at y.chen@lboro.ac.uk or by telephone on 01509 635739.

Applications

The closing date for receipt of applications is **6 November 2017**.