UNIVERSITY OF DERBY
JOB DESCRIPTION

<table>
<thead>
<tr>
<th>JOB TITLE</th>
<th>Researcher (Postdoctoral): Epidemiology of oral HPV infection in tonsil tissue</th>
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<tbody>
<tr>
<td>DEPARTMENT / COLLEGE</td>
<td>College of Life and Natural Sciences</td>
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<tr>
<td>LOCATION</td>
<td>Kedleston Road</td>
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<tr>
<td>JOB NUMBER</td>
<td>0203-18</td>
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<td>SALARY</td>
<td>£24,285 to 37,706 per annum</td>
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<td>REPORTS TO</td>
<td>Lecturer in Cellular and Molecular Biology (University of Derby) and Assistant Dean Learning and Teaching (Aston University)</td>
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Role Summary

Applications are invited for a Postdoctoral Researcher to work on a project, funded by the University of Derby, to determine the prevalence of infection of oral Human Papillomavirus (HPV) in healthy tonsil tissue (removed from patients undergoing routine tonsillectomy). The project will identify the most common strain of HPV found in the oropharynx, investigate whether the individual’s lifestyle can influence viral infection rates. The role is based in the Human Sciences Research Centre, at the University of Derby. This is an 18 month full-time fixed-term post starting as soon as possible.

Principal Accountabilities

Under the guidance of the investigators, the role of the Postdoctoral Researcher will be to:

- Assist in the recruitment of participants from Royal Derby Hospital to the study
- Adapt our current NHS IRAS ethical application to extend the study and permit recruitment from to two additional sites - Leicester Royal Infirmary and Queens Medical Centre (QMC), Nottingham
- Undertake qPCR screening of participant samples to identify prevalence and strain of HPV
- Undertake qRT-PCR and western blotting to examine the pathogenesis of oncogenic HPV gene expression
- Analyse questionnaires (collected from participants) to determine whether lifestyle choices can influence viral infection
- Contribute to the preparation of 3* and 4* manuscripts for submission to high impact
Human Papillomavirus (HPV), is the causative agent of cancers of the genital tract; predominantly cervical cancer. Over the past 30 years, the prevalence of cervical cancer has declined due to effective screening procedures and the introduction of vaccination programmes against high risk (cancer-causing) HPVs. Conversely, the prevalence of HPV positive Head and Neck Squamous Cell Carcinoma (HNSCC), has been increasing, particularly in young men [1]. HPV is strongly associated with oropharyngeal carcinoma (OPC), a subset of HNSCCs, arising in tonsils and base of tongue [2]. It is projected the prevalence of HPV positive OPC will surpass HPV positive cervical cancers by 2020 [3], with other studies suggesting this is already the case [4].

Despite a thorough understanding of the viral life cycle (prevalence, pathogenesis, and persistence) of cervical infection, there is limited understanding of the viral infection in the oropharynx; with no screening practices, the trend is for individuals, predominantly male, to present late and with established OPC [5, 6]. As such, there is a need to understand the viral lifecycle of HPV within the oropharynx to determine how HPV causes OPC. There are very few studies that examine the rates (prevalence) of oral HPV in tissues that are known to develop HPV-related OPC; the tonsil. Therefore this study will investigate the frequency and pathogenesis of active oral HPV infections within those cells that present with HPV-OPC. qPCR and western blotting methods will be used to assess the viral strain, oncogenic gene and protein expression, and integration status, of HPV within the tonsillar tissue. An accompanying questionnaire addressing the individuals' lifestyle choices (sexual behavior, smoking and alcohol use) will be analysed by generalized linear modelling to examine whether these behaviours influence the prevalence and pathogenesis of an oral HPV infection. As such, this work will begin to assess both the prevalence of oral HPV DNA, and how HPV infection is prognostic for the subsequent development of HPV-OPC.

Person Specification

Short listing will be carried out by assessing suitability against the criteria set out in the person specification, as far as it is reasonable to do so before the interview.

- **Essential Criteria**

- **Qualifications**
  - PhD in Virology or a closely related discipline.

- **Experience**
  - Extensive experience in qPCR and development of this methodology
  - Laboratory experience of gene expression and protein expression
  - Handling of human samples and associated ethical and HTA requirements
  - Statistical methods for the analysis of questionnaire data
  - Scientific report and bid writing, and participation in scientific dissemination

- **Skills, knowledge and abilities**
  - Knowledge of methodology design and experimental troubleshooting
  - Ability to work with both academic and medical professionals
  - Excellent written and oral communication skills
  - Digital and IT skills, particularly related to the use of statistical software

- **Business requirements**
  - Willingness to work flexible hours; and travel for conferences/work at other sites or locations as necessary for the project in a time- and cost-effective manner
  - Willingness to work as part of a team and/or alone when required

- **Desirable Criteria**

- **Qualifications**
  - Previous post-doctoral work on a related subject

- **Experience (in one or more of the following areas)**
  - Track record in bid writing to external funding bodies;
  - Publication of papers in peer reviewed journals of high quality;
  - Research collaboration in previous projects with national/international experts;
  - Generating and/or capturing evidence of research impact.

- **Skills, knowledge and abilities**
  - Public health knowledge related to the project
  - Good level of time and project management
  - Critical evaluation of the scientific literature
Benefits

The postdoctoral researcher will have their own desk and computer, in a shared office in the College of Life and Natural Sciences, at the Kedleston Road site of the University of Derby.

As well as competitive pay scales, we offer generous holiday entitlement. We also offer opportunities for further salary progression based on performance, and the opportunity to join a contributory pension scheme.

For more information on the benefits of working at the University of Derby go to

https://jobs.derby.ac.uk/display.aspx?id=1912&pid=0&tabId=230