Institution: Anglia Ruskin University

Unit of Assessment: UoA 3 (Allied Health Professions, Dentistry, Nursing and Pharmacy)

a. Context: Our *vision and eye research* produces impact for numerous non-academic stakeholders across a variety of domains, including:

(i) *Health and wellbeing* through the enhancement of services offered to visually impaired patients, benefiting them, the community, voluntary organisations and healthcare providers.

(ii) *Economic improvements* through increased efficiency with our refined community-based referral pathway for patients with suspected glaucoma, benefiting Care Commissioning Groups (CCGs), healthcare providers and NHS practitioners (i.e. ophthalmologists, general practitioners and optometrists).

(iii) *Increased awareness* of the potential burden of eye diseases through the work of the Vision Loss Expert Group (VLEG) on the Global Burden of Disease Study (GBD), benefiting UK and international policymakers, including the Government of Trinidad and Tobago and the International Agency for the Prevention of Blindness (IAPB).

(iv) *Increased commercial output* through our engagement with industry, benefiting contact lens and medical devices manufacturers and software companies who seek to increase profitability, sustainability, growth and innovation through Knowledge Transfer Partnerships (KTPs).

b. Approach to impact: Our Vision and Eye Research Unit (VERU) is committed to maximising the impact of its research. We use a number of approaches to achieve this:

Direct dissemination of research results. Relevant beneficiaries and end-users are identified and approached. Research findings are disseminated via seminars, clinical forums and brainstorming meetings to explore how current projects may be best exploited to produce vision care improvements. Beneficiaries and end-users have been broadly categorised into five groups:

(i) *Charities*: Our research has been disseminated directly to CEOs and research officers of the International Agency for the Prevention of Blindness (IAPB), Fight for Sight, Sightsavers, and the Royal National Institute of Blind People (RNIB). Key staff are invited to meetings and workshops to help identify areas that affect the independence, safety and wellbeing of patients. We then seek to apply our research to these areas of concern, with findings disseminated back to stakeholders. We have liaised with key workers from Cam Sight (who provide support for visually impaired people, their carers and public service providers in Cambridge), low vision practitioners working in the NHS and fall prevention nurses, to develop new rehabilitation processes that would improve patient independence, reduce incidents of falling and enhance wellbeing. For example, our research identified the significant role of depression on the quality of life of visually impaired patients, leading to the introduction of depression-monitoring procedures by Cam Sight which were subsequently tested, evaluated and incorporated into their rehabilitation procedures. A large falls clinic in Cambridgeshire now takes visual function in dim light into account when assessing its patients. Other stakeholders who have benefited from our research through direct contact include the Ménière's Society, the Evelyn Trust, and RP Fighting Blindness.

(ii) *UK Government, Strategic Policymakers and Professional Bodies (UK and internationally)*: Our research has been disseminated to key influential stakeholders including the Rt Hon Mr Andrew Lansley (the Secretary of State for Health, 2010-12), Lord Howe (Parliamentary Undersecretary of State for Quality, responsible for quality at the Department of Health, 2010-present), the Indian Medical Association and the Council of the Royal College of Surgeons. These meetings have raised awareness of our research and its potential relevance to ongoing policy discussions. Other government stakeholders who have commissioned reports from our research include the Home Office Scientific Development Branch (now the Centre for Applied Science & Technology).

(iii) *NHS clinicians, general practitioners and optometrists* who care for patients suffering from eye diseases. For example, dissemination of our research on diabetes in South Asian patients to healthcare practitioners both in the UK and overseas has led to enhanced healthcare offered to patients (see case study B).

(iv) *Healthcare commissioners:* Recent NICE guidelines for glaucoma referral has led to a growing concern amongst healthcare providers as to whether there is sufficient capacity to meet demand. We developed a new referral refinement pathway for glaucoma that increased efficiency, enhanced patient experience and decreased the demands on NHS resources with

no reduction in patient safety. These findings were disseminated through formal meetings and workshops to various care commissioners leading to the adoption of the new pathway in Barnet (The Royal Free and Edgware Hospitals) and Islington (Moorfields Eye Hospital).

(v) *International government departments and non-governmental organisations (NGOs)* through our Corporate Management Team (CMT), which comprises the Vice Chancellor, Deputy and Pro Vice Chancellors, who disseminate our research during their official overseas visits. For example, our research from the Vision Loss Experts Group of the GBD Study identified regions where prevalence data for blindness are scarce. Engagement with national governments facilitated through CMT led to the commissioning of a national survey of blindness with the Government of Trinidad and Tobago, ensuring that the data can be used to identify future funding priorities which will improve eye care treatment to those with high risk of blindness.

Formal appointments of NHS clinical staff: To facilitate the rapid adoption of our research, we invite clinical researchers on NHS appointments to join VERU as visiting staff. Current visiting staff from hospitals across the UK include: Keenan (Addenbrooke's), Thomas (Ipswich), Ratnarajan (Aylesbury), Patel (Colchester), Silvester (Countess of Chester), and Braithwaite (Hinchingbrooke). These appointments enable our laboratory-based researchers to benefit from clinical perspectives, maximising the potential for patient benefit. Adoption into clinical practice is facilitated through direct dissemination of our research at conferences and hospital seminars. For example, one of our NHS clinical researchers (Rajan) identified a need for the refinement of current corneal transplantation surgery for patients suffering with endothelial cell failure. Ensuing research developed a new refined technique, 'micro-thin endothelial keratoplasty', which has improved surgical and visual outcomes. This research was rapidly disseminated through a VERU-led annual Corneal and Cataract Conference (2013), together with other national and international conferences, leading to the development of a prototype device by Network Medical Products Ltd.

Engagement with Industry: Companies with the potential to benefit from our research expertise are identified and approached via the central Research, Development and Commercial Services' (RDCS) Knowledge Transfer Partnership (KTP) office. A series of brainstorming sessions led to successful KTP partnerships with Ultravision PLC (a contact lens manufacturer) who used our research expertise to assess a new contact lens design. This has led to increased growth and improved revenue for the company. Our collaborative work with Medisoft Ltd, to develop new software modules for the management of glaucoma and uveitis, will be used by NHS Trusts once complete. Similar approaches have led to consultancies offered by other industrial partners to innovate and increase revenue (Bausch & Lomb, Pfizer, Acucela-C, Takeda, SARcode Bioscience, Santen, Shire and Johnson & Johnson Vision Care Inc).

Anglia Ruskin University supports impact generation in our Unit by:

(i) Marketing our research via press releases; an equivalent value of £190,000 of press coverage has been realised through VERU-related marketing within the REF period. In addition, VERU and PMI brochures and newsletters are distributed regularly to 200 Partners, CEOs of acute NHS Trusts and Healthcare contacts in Essex. In addition, a brochure exemplifying our research-related engagement with industry has been distributed to 1,000 small and medium-sized companies throughout Essex and Cambridgeshire.

(ii) Hosting conferences and symposia to disseminate research: an annual national Cataract and Cornea Conference to increase access to our research by clinician delegates (2012 and 2013); a symposium to deliver research results to Department of Health representatives and UK vision charities (2013); a seminar for clinical ophthalmology leads in all NHS Trusts in Essex (2010).

(iii) Support (travel and time) for researchers to disseminate important findings to beneficiary-led meetings, for example: International Low Vision Society meetings in Montreal and Kuala Lumpur that are attended by researchers, clinicians, patients, support groups and charities (e.g. RNIB); RP Fighting Blindness meetings; Diabetes UK; Glaucoma Society.

(iv) Access to 21 external members of the Postgraduate Medical Institute (PMI) at Anglia Ruskin University, including all NHS acute hospitals, primary care and mental health trusts in Essex, along with Essex County Council, Ramsay and Nuffield Hospitals. As VERU is part of the PMI, it has full access to the Board of PMI comprising GPs, CCGs and providers who identify priority research areas with a potential to improve patient care.

(v) Infrastructure investment for a brand new research facility for VERU (with a significant

investment of £900,000) offering state-of-the-art ophthalmic and research examination facilities that exceed those available in many nearby hospitals. This enables us to offer patients care which has been informed by our evidence-based research.

(vi) A commitment to the 'Manifesto on Public Engagement' of the National Coordinating Centre for Public Engagement (NCCPE): Funded by the UK Higher Education Funding Councils, Research Councils UK and the Wellcome Trust, the manifesto outlines aims and aspirations for institutions to show their support for the Concordat for Engaging the Public with Research.

c. Strategy and plans. The primary strategy of VERU is to focus resources on projects that have the potential to benefit non-academic stakeholders. To achieve this, we are committed to using funds generated through REF 2014 and 20% of indirect costs from our research grants with full economic costings to:

(i) *Further enhance our collaborative research dissemination network.* At present this network consists of eye-care practitioners. We will further develop our Public Patient Involvement (PPI) group who will play a critical role throughout the research process. This will include key people from social services, industry partners, community nurses and influential members from NGOs, in order to identify priority areas of eye related patient-benefiting research.

(ii) *Work with our new Anglia Ruskin Clinical Trials Unit (ARCTU)* in order to benefit patients in Essex who currently have limited access to new therapies. We will increase the number of National Institute for Health Research (NIHR)-adopted portfolio studies that provide evidence to underpin eye and health care improvements.

(iii) *Work with our new MedTech Campus* to facilitate industrial collaboration. MedTech has three sites: Southend, Chelmsford and Harlow, and was launched by Lord Howe . It is designed to support new high-tech startups, in partnership with Chelmsford City Council, Harlow Council and Southend Borough Council. With 1.7 million square feet of innovation space, it will be the largest MedTech centre in the UK, helping to increase our engagement with companies serving the eye health market.

(iv) *Respond to future government healthcare* priorities by targeting resources and expertise to address problems highlighted as being of mounting concern. The PMI's partnership with 21 Health and Social Care organisations, together with our VERU NHS visiting clinicians, will enable us to respond to new healthcare priorities. Furthermore, our membership of the University College London Health Partnerships (UCLHP) Academic Health Science Network (AHSN) will enable us to access the collaborative resources, expertise, infrastructure and facilities required to translate this research into practical improvements in vision healthcare.

(v) *Emphasise the importance of impact generation* and promote its early consideration by introducing a new 'identify impact' section to our research proposals. We will arrange regular reviews of ongoing research projects to discuss the potential for impact creation, and maintain databases that detail research impact. In addition, we will disseminate impact more widely to non-academic beneficiaries through our own VERU website and Health and Wellbeing boards such as Health Watch and patient-led portals such as INSPIRE.

d. Relationship to case studies: The two case studies demonstrate our approach to impact as discussed above. Case Study A describes the improved healthcare and resource planning using data from the Global Burden of Disease (GBD) Study's Vision Loss Expert Group (VLEG). Impact was achieved through the University's Corporate Management Team and VERU making contact with the Government of Trinidad and Tobago, and highlighting the scarcity of data on the prevalence of blindness. This led directly to the commissioning of the National Eye Survey of Trinidad & Tobago (NESTT). In addition, dissemination of data to relevant stakeholders including the World Economic Forum and PricewaterhouseCoopers led them to use the research findings when developing economic reports that aim to increase awareness of the population health risks and the associated economic impact. Case Study B, on diabetic eye complications, exemplifies our approach of enabling impact through the direct dissemination of results. Action was taken to identify national and international regions where diabetic eye health is a concern, and where the research results would be of greatest benefit. Rapid adoption of research findings was facilitated via communication with relevant stakeholders, including senior diabetic healthcare consultants in Pakistan, plus a variety of healthcare providers in East Africa and the UK (for example Peterborough, which has a very high prevalence of diabetic complications) including general practitioners and ophthalmology clinical leads.