University of Birmingham

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About

John Curnow is a senior non-clinical lecturer in the School of Immunity & Infection in the College of Medical and Dental Sciences.

John has published over 50 research papers in scientific journals in the field of translational human immunology, in particular ocular immunology. He has received grants from Fight for Sight, the Medical Research Council and the MS Society.

In addition to his research he is committed to research-focused teaching and at both an undergraduate and postgraduate level.

Qualifications

- PhD Immunochemistry 1991
- BSc (Hons) Biology 1988

Biography

John Curnow qualified with a BSc (Hons) in Biology from the University of Southampton in 1988, going on to study for a PhD in Immunochemistry which he attained in 1991. Following a 3 year post-doctoral fellowship at the Centre d'Immunologie in Marseille where he studied mechanisms of T cell tolerance, he moved to Oxford where he developed his interest in human translational immunology, and in particular autoimmune and inflammatory diseases. In 1998 John moved to Birmingham as a lecturer in the Academic Unit of Ophthalmology, within the School of Immunity & Infection.

Over the past 10 years his research group has developed an international reputation in studies of the mechanisms controlling inflammation in patients with uveitis (intraocular inflammation). His work has been presented at a number of international meetings and his is frequently invited to give lectures.

Teaching

Teaching Programmes

- **BMedSci (/undergraduate/courses/med/medical-sci.aspx)**
- **MBChB (/undergraduate/courses/med/medicine.aspx)**
- **MRes (/postgraduate/courses/combined/med/health-research.aspx)**

Postgraduate supervision

John has supervised a number of doctoral research students and currently has students studying in a number of areas including:

- The role of T lymphocytes in ocular disease
- Differentiation of T helper subsets

If you are interesting in studying any of these subject areas please contact John on the contact details above, or for any general doctoral research enquiries, please email: **dr@contacts.bham.ac.uk (mailto:dr@contacts.bham.ac.uk)** or call +44 (0)121 414 5005.

For a full list of available Doctoral Research opportunities, please visit our **Doctoral Research programme listings (http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show)**

Research

RESEARCH THEMES

Inflammation and inflammatory disease; Immune regulation

RESEARCH ACTIVITY

Uveitis (intraocular inflammation)

The eye is normally protected from the harmful side-effects of immune responses. However, for patients with uveitis this degree of protection appears to have failed and they can develop sight-threatening inflammation. Our research aims to determine how inflammation in the eye of patients with uveitis is regulated. We are currently

studying the role of both aggressive and regulatory T cell subsets in this disease. This work is in collaboration with the clinicians in the unit, Prof Phil Murray and Dr Alastair Denniston.

T cell differentiation

Central to our understanding of autoimmune and inflammatory diseases, is our knowledge of how the relevant lymphocyte subsets differentiate in a healthy context. There are a wide variety of different types of lymphocyte. Our current projects are attempting to characterise these cells in more detail from the blood of healthy volunteer donors. We are examining the features of the cells, how they function and what controls their differentiation.

Multiple sclerosis

The central nervous system, like the eye, is relatively protected from damaging inflammation. However in patients with multiple sclerosis there is a destructive inflammatory process with many pathogenic lymphocytes entering the central nervous system. We are currently studying these cells to determine which cells are specific to this disease and how they relate to the clinical progression. This work is in collaboration with consultant neurologists at the QE Hospital Birmingham.

Other activities

- Consultant for Celentyx Ltd.

Publications

Denniston AK, Tomlins PJ, Williams GP, Kottoor S, Khan IJ, Oswal K, Salmon M, Wallace GR, Rauz S, Dr. Murray PI, Curnow SJ. (2012), Aqueous humor suppression of dendritic cell function helps maintain immune regulation in the eye during human uveitis. Invest. Ophthal. Vis. Sci. In press

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Turan N, Kalko S, Stincone A, Clarke K, Sabah A, Howlett K, Curnow SJ, Rodriguez DA, Cascante M, O'Neill L, Egginton S, Roca J, Falciani F. (2011), A systems biology approach identifies molecular networks defining skeletal muscle abnormalities in chronic obstructive pulmonary disease. PLoS Comput Biol. Epub Sep 1.

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Whitehead KJ, Smith CG, Delaney SA, Curnow SJ, Salmon M, Hughes JP, Chessell IP. (2010), Dynamic regulation of spinal pro-inflammatory cytokine release in the rat in vivo following peripheral nerve injury. Brain Behav Immun. 24(4):569-76.

Agius E, Lacy KE, Vukmanovic-Stejic M, Jagger AL, Papageorgiou AP, Hall S, Reed JR, Curnow SJ, Fuentes-Duculan J, Buckley CD, Salmon M, Taams LS, Krueger J, Greenwood J, Klein N, Rustin MH, Akbar AN. (2009), Decreased TNF-alpha synthesis by macrophages restricts cutaneous immunosurveillance by memory CD4+ T cells during aging. J. Exp. Med.