



Prof. Richard M. Maizels

Professor

University of Glasgow, UK

Professor Rick MAIZELS is at the Wellcome Centre for Molecular Parasitology in the University of Glasgow's Institute of Infection, Immunity and Inflammation, in the UK. He is an immunologist interested in fundamental questions of how and why parasites manipulate the sophisticated mammalian immune system, and how that system has evolved in the face of parasite immunomodulatory strategies. His laboratory focuses on the most complex parasites to invade the body – multicellular helminths – which cause widespread tropical diseases while displaying profound immuno-regulatory capability. The central questions his group addresses are: (i) how do parasites manipulate the host immune system? (ii) what is the impact of this modulation on immunological diseases? and: (iii) what parasite molecules are responsible for immunomodulation? Rick moved to the University of Glasgow in 2016; between 1995 and 2015 he held the Chair of Zoology at the University of Edinburgh, and was previously Professor of Parasite Immunology at Imperial College London, where he moved in 1983. Prior to this, he held positions at the National Institute for Medical Research in London (1973-1976 and 1979-1983), as well as UCLA (1977-1979) and California Institute of Technology (1986-1977). He was elected Fellow of the Royal Society of Edinburgh in 2002, and made a Senior Fellow of the American Asthma Foundation in 2010.

Date of Birth : 14 May 1953

Employment

1976 - 1977 Research Fellow in Genetics, California Institute of Technology, Pasadena
1977 - 1979 Postdoctoral Fellow, Microbiology, University of California at Los Angeles
1979 - 1983 Scientific Staff, National Institute for Medical Research, Mill Hill, London
1983 - 1995 Lecturer/Reader/Professor, Biology, Imperial College London
1995 - 2015 Professor of Zoology, University of Edinburgh
2016 - Professor of Parasitology, Wellcome Centre for Molecular Parasitology,
 Institute of Infection, Immunity and Inflammation University of Glasgow

Education

1973 **BSc** (Hons) 2(i) Zoology, University College London, August 1973
1976 **PhD**, Immunology, National Institute for Medical Research, October 1976

Selected Publications 2010-2016

Grainger JR, Smith KA, Hewitson JP, McSorley HJ, Harcus Y, Filbey KJ, Finney CAM, Greenwood EJD, Knox DP, Wilson MS, Belkaid Y, Rudensky AY, Maizels RM (2010) Helminth secretions induce *de novo* T cell Foxp3 expression and regulatory function through the TGF- β pathway. *J Exp Med* **207**: 2331-41

Wilson MS, Taylor MD, O’Gorman MT, Balic A, Barr TA, Filbey K, Anderton SM, Maizels RM (2010) Helminth-induced CD19⁺CD23^{hi} B cells modulate experimental allergic and autoimmune inflammation. *Eur J Immunol* **40**: 1682-1696

Hewitson JP, Harcus Y, Murray J, van Agtmaal M, Filbey KJ, Grainger JR, Bridgett S, Blaxter ML, Ashton P, Ashford D, Curwen R, Wilson R, Dowle A, Maizels RM (2011) Proteomic analysis of secretory products from the model gastrointestinal nematode *Heligmosomoides polygyrus* reveals dominance of Venom Allergen-Like (VAL) proteins. *J Proteomics* **74**: 1573-1594

McSorley HJ, O’Gorman MT, Blair N, Sutherland TE, Filbey KJ, Maizels RM (2012) Suppression of type 2 immunity and allergic airway inflammation by secreted products of the helminth *Heligmosomoides polygyrus*. *Eur J Immunol* **42**: 2667-2682

Reynolds LA, Maizels RM (2012) Cutting Edge: In the absence of TGF- β signaling in T cells, fewer CD103⁺ regulatory T cells develop, but exuberant IFN- γ production renders mice more susceptible to helminth infection. *J Immunol* **189**: 1113-1117

Hewitson JP, Ivens AC, Harcus Y, Filbey KJ, McSorley HJ, Murray J, Bridgett S, Ashford D, Dowle AA, Maizels RM (2013) Secretion of protective antigens by tissue-stage nematode larvae revealed by proteomic analysis and vaccination-induced sterile immunity. *PLOS Pathogens* **9**: e1003492

Buck AH, Coakley G, Simbari F, Kumar S, Lear M, Abreu-Goodget C, Harcus Y, Blaxter M, Ivens A, Maizels

- RM (2014) Exosomes secreted by a nematode parasite transfer RNA to mammalian cells and regulate genes of the innate immune system. *Nature Comm* **5**: 5488
- Filbey KJ, Grainger JR, Smith KA, Boon L, van Rooijen N, Harcus Y, Jenkins S, Hewitson JP, Maizels RM (2014) Innate and adaptive type 2 immune cell responses in genetically controlled resistance to intestinal helminth infection. *Immunol Cell Biol* **92**: 436-448
- McSorley HJ, Blair NF, Smith KA, McKenzie ANJ, Maizels RM (2014) Blockade of IL-33 release and suppression of type 2 innate lymphoid cell responses by helminth secreted products in airway allergy. *Mucosal Immunol* **7**: 1068–1078
- Reynolds LA, Harcus Y, Smith KA, Webb LM, Hewitson JP, Ross EA, Brown S, Uematsu S, Akira S, Gray D, Gray M, MacDonald AS, Cunningham AF, Maizels RM (2014) MyD88 signaling inhibits protective immunity to the gastrointestinal helminth parasite *Heligmosomoides polygyrus*. *J Immunol* **193**:2984-93
- Reynolds LA, Smith KA, Filbey KJ, Harcus Y, Hewitson JP, Yebra M, Maizels RM (2014) Commensal-pathogen interactions in the intestinal tract: Lactobacilli promote infection with, and are promoted by, helminth parasites. *Gut Microbes* **5**: 10-19
- Hewitson JP, Filbey KJ, Esser-von Bieren J, Camberis M, Schwartz C, Murray J, Reynolds LA, Blair N, Robertson E, Harcus Y, Boon L, Huang SCC, Yang L, Tu Y, Miller, MJ, Voehringer D, Le Gros G, Harris N, Maizels RM (2015) Concerted activity of IgG1 antibodies and IL-4/IL-25-dependent effector cells trap helminth larvae in the tissues following vaccination with defined secreted antigens, providing sterile immunity to challenge infection. *PLOS Pathogens* **11**e1004676
- Gerbe F, Sidot E, Smyth DJ, Ohmoto M, Matsumoto I, Dardalhon V, Cesses P, Garnier L, Bruschi M, Harcus Y, Zimmerman VS, Taylor N, Maizels RM, Jay P (2016) Intestinal epithelial tuft cells initiate type 2 mucosal immunity to helminth parasites. *Nature* **529** : 226-230