



Nicholas R.J. Gascoigne

Address: National University of Singapore

Country: Singapore

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Aberystwyth University, United Kingdom	BSc (Hons)	1977-80	Zoology
University College London, United Kingdom	PhD	1980-83	Immunology
Stanford Univ. School of Medicine, Stanford CA	Postdoc	1983-87	Molecular Immun.

Personal Statement

My lab has been involved in basic studies of the development of T cells, TCR repertoire, biophysical measurements of TCR-ligand interactions, development of FRET imaging techniques to investigate interactions between signaling molecules in live cells, and many other aspects of immunology. We cloned the gene for Themis, discovered its crucial importance in positive selection by making a knockout mouse, and identified its role in TCR-mediated signaling. Additionally, we are now involved in projects on immune responses in infectious disease, cancer and transplantation.

Positions and Honors

Positions and Employment

1980-1983	Graduate student, ICRF (now CRUK) Tumor Immunology Unit, University College London. "The Regulation of the Immune Response to Minor Alloantigens". Advisor: Prof. N. Avrion Mitchison.
1983-1987	Postdoctoral Fellow, Stanford University School of Medicine. Advisor: Mark M. Davis, Ph.D.
1987-1992	Assistant Member, Department of Immunology, The Scripps Research Institute.
1993-1997	Associate Professor, Dept. of Immunology, The Scripps Research Institute.
1997-1/05	Associate Professor with tenure, Dept. of Immunology, The Scripps Research Institute.
2/05-7/13	Professor, Dept. of Immunology and Microbiology, The Scripps Research Institute.
8/13-present	Adjunct Professor, Dept. of Immunology and Microbiology, The Scripps Research Institute.
2010-7/13	Course Director, Immunology graduate course at TSRI.
1990-7/13	Faculty, Graduate Program in Biology. TSRI Graduate Recruitment committee '99-'08.

- 2010-7/13 Course Director, Immunology graduate course at TSRI.
 8/13-present Professor and Head (Chair), Dept. of Microbiology and Immunology, Yong Loo Lin School of Medicine, National University of Singapore, Singapore.
 2014- present Faculty member: NGS: NUS Graduate School for Integrative Sciences and Engineering.

Other Experience and Professional Memberships

- 1981- Member, British Society of Immunology
 1988- Member, American Association of Immunologists
 1992-2000 Minority Affairs Committee, AAI
 1994-1998 American Heart Association, Immunology and Microbiology Study Committee,
 1995-2001 Associate Editor, Journal of Immunology
 1995 US Army Breast Cancer peer review panel
 1997- Concern Foundation for Cancer Research, grant review committee
 1999 NIH Study Section (*ad hoc*) Allergy and Immunology (ALY)
 2002- Member, Biophysical Society
 2006-2009 Program Committee, AAI
 2004-2008 NIH Study Section (standing member) Cellular and Molecular Immunology-A (CMI-A)
 2004-2008 Section Editor, Journal of Immunology
 2009 NIH ARRA grant reviewer
 2009 Austrian Science Fund, DK-plus review committee, Vienna, Austria
 2010- Associate Editor, Frontiers in T Cell Biology
 2013-present Singaporean Society for Immunology (Council member since 2015)
 2017-present President, Singaporean Society for Immunology
 2017-present Review Panel, NMRC (Singapore) open fund individual research grants (OF-IRG)

- Other NIH SEP (ALY) '97, (ZRG1 IMM-N) '11, NIH Special Review Committee '93. Grant Reviewer; NSF, MRC (UK), Wellcome Trust, NCI (Canada), Health Research Council (NZ), Royal Society (NZ), etc.
 Ad hoc reviewer: Nature, Science, Cell, Nat. Immunol., Immunity, J. Exp. Med., PNAS, PLoS, EMBO J., Eur. J. Immunol., etc.

Honors

- 1979 ICRF Summer Student at ICRF Tumour Immunology Unit, UCL, London
 1980-1983 Medical Research Council Studentship
 1983-1985 Cancer Research Institute Fellowship
 1983 Damon Runyon-Walter Winchell Cancer Research Fund Fellowship (declined)
 1985-1987 Leukemia Society of America Special Fellowship
 1985 Arthritis Foundation Fellowship (declined)
 1988-1991 March of Dimes Birth Defects Foundation, Basil O'Connor Starter Scholar Research Award
 1989-1994 Scholar of the Leukemia Society of America
 2014-2017 Provost's Chair, National University of Singapore.
 2016 Guy Newton Sabbatical Fellowship, Dunn School of Pathology, Oxford University, UK

C. Selected Peer-reviewed Publications (*Selected from 89 refereed papers, plus 51 chapters and reviews*)

1. Brameshuber, M., Kellner, F., Rossboth, B.K., Ta, H., Alge, K., Sevcsik, E., Gohring, J., Axmann, M., Baumgart, F., **Gascoigne, N.R.J.**, Davis, S.J., Stockinger, H., Schutz, G.J., and Huppa, J.B. (2018). Monomeric TCRs drive T-cell antigen recognition. *Nature Immunol.* In press.
2. Gautam, N., Sankaran, S., Yason, J.A., Tan, K.S.W., and **Gascoigne, N.R.J.** (2018). A high content imaging flow cytometry approach to study mitochondria in T cells: MitoTracker Green FM dye concentration optimization. *Methods* **134-135**: 11-19
3. Tay, N.Q., Lee, D.C.P., Chua, Y.L., Prabhu, N., **Gascoigne, N.R.J.***, and Kemeny, D.M. (2017). CD40L expression allows CD8+ T cells to promote their own expansion and differentiation through dendritic cells. *Front. Immunol.* **8**: 1484 (doi: 10.3389/fimmu.2017.01484) (*Corresponding Author)
4. Lai, J.Y., Choo, J.A.L., Tan, W.J., Too, C.T., Oo M.Z., Suter, M.A., Mustafa, F.B., Srinivasan, N., Chan, C.E.Z., Lim, A.G.X., Zhong, Y.J., Chan, S.H., Hanson, B.J., **Gascoigne, N.R.J.**, and MacAry, P.A. (2017). T-cell receptor-like antibodies mediate complement-dependent cytotoxicity against Epstein-Barr virus-transformed B lymphoblastoid cells expressing different HLA-A*02 microvariants. *Sci. Rep.* **7**: 9923
5. Chan J.H.S., Chua, Y.L., Peh, H.Y., Jovanovic, V., **Gascoigne, N.R.J.**, Wong, W.S., Chew, F.T., Hanson, B.J., Kemeny, D.M., and MacAry, P.A. (2017). Molecular engineering of a therapeutic antibody for Blo t 5-induced allergic asthma. *J. Allergy Clin. Immunol.* **139**: 1705-1708
6. Lai, J.Y., Tan, W.J., Too, C.T., Choo, J.A.L., Wong, L.H., Mustafa, F.B., Srinivasan, N., Lim, A.P.C., Zhong, Y.J., **Gascoigne, N.R.J.**, Hanson, B.J., Chan, S.H., Chen, J.Z., and MacAry, P.A. (2016). Targeting Epstein-Barr virus transformed B lymphoblastoid cells using antibodies with TCR-like specificities. *Blood.* **128**: 1396-1407
7. **Gascoigne, N.R.J.**, Rybakina, V., Acuto, O., and Brzostek, J. (2016). TCR signal strength and T cell development. *Annu. Rev. Cell Dev. Biol.* **32**: 327-348
8. Almeida, A.F., Tenno, M., Brzostek, J., Li, J.L.Y., Allies, G., Hoeffel, G., See, P., Ng, L.G., Fehling, H.J., **Gascoigne, N.R.J.**, Taniuchi, I., and Ginhoux, F. (2015). Identification of a novel lymphoid population in the murine epidermis. *Sci. Rep.* **5**: 12554 (doi: 10.1038/srep12554)
9. Rivino, L., Kumaran, E.A., Thein, T.-L., Too, C.T., Gan, V.C.H., Hanson, B.J., Wilder-Smith, A., Bertolotti, A., **Gascoigne, N.R.J.**, Lye, D.C., Leo, Y.S., Akbar, A.N., Kemeny, D.M., and MacAry, P.A. (2015). Virus-specific T lymphocytes home to the skin during natural dengue infection. *Sci. Transl. Med.* **7**: 278ra35 (doi: 10.1126/scitranslmed.aaa0526)
10. Paster, W., Bruger, A.M., Katsch, K., Gregoire, C., Roncagalli, R., Fu, G., **Gascoigne, N.R.J.**, Nika, K., Cohnen, A., Feller, S.M., Simister, P., Molder, K.C., Cordoba, S.-P., Dushek, O., Malissen, B., and Acuto, O. (2015). A THEMIS:SHP complex promotes T cell survival. *EMBO J.* **34**: 393-409
11. Casas, J., Brzostek, J., Zarnitsyna, V.I., Hong, J.-S., Wei, Q., Hoerter, J.A.H., Fu, G., Ampudia, J., Zamoyska, R., Zhu, C., and **Gascoigne, N.R.J.** (2014). Ligand-engaged TCR is triggered by Lck not associated with CD8 coreceptor. *Nature Commun.* **5**: 5624 (doi 10.1038/ncomms6624)
12. Kong, K.-F.[†], Fu, G.[†], Zhang, Y., Casas, J., Canonigo-Balancio, A.J., Becart, S., Kim, G., Yates, J.R. 3rd, Kronenberg, M., **Gascoigne, N.R.J.***, and Altman, A.* (2014). Protein kinase C- δ controls CTLA-4-mediated regulatory T cell function. *Nature Immunol.* **15**: 465-472 (*Co-senior authorship; [†]Co-first authorship). PMID: PMC4040250

13. Nabekura, T., Kanaya, M., Shibuya, A., Fu, G., **Gascoigne, N.R.J.**, and Lanier, L.L. (2014). Costimulatory molecule DNAM-1 is essential for optimal differentiation of memory natural killer cells during mouse cytomegalovirus infection. *Immunity* **40**: 225-234
14. Fu, G., Casas, J., Rigaud, S., Rybakin, V., Lambolez, F., Brzostek, J., Hoerter, J.A.H., Paster, W., Acuto, O., Cheroutre, H., Sauer, K., and **Gascoigne, N.R.J.** (2013). Themis sets the signal threshold for positive and negative selection in T-cell development. *Nature* **504**: 441-445
15. Hoerter, J.A.H., Brzostek, J., Artyomov, M.N., Abel, S.M., Casas, J., Rybakin, V., Ampudia, J., Lotz, C., Connolly, J.M., Chakraborty, A.K., Gould, K.G., and **Gascoigne, N.R.J.** (2013). Coreceptor affinity for MHC defines peptide specificity requirements for TCR interaction with coagonist peptide-MHC. *J. Exp. Med.* **210**: 1807-1821
16. Paster, W., Brockmeyer, C., Fu, G., Simister, P., de Wet, B., Martinez-Riano, A., Hoerter, J.A.H., Feller S.M., Wuelfing, C., **Gascoigne, N.R.J.** and Acuto, O. (2013). GRB2-mediated recruitment of THEMIS to LAT is essential for thymocyte development. *J. Immunol.* **190**: 3749-3756.
17. Fu, G., Hu, J., Niederberger-Magenat, N., Rybakin, V., Casas, J., Yachi, P.P., Feldstein, S., Ma, B., Hoerter, J.A.H., Ampudia, J., Rigaud, S., Lambolez, F., Gavin, A.L., Sauer, K., Cheroutre, H., and **Gascoigne, N.R.J.** (2011). Protein Kinase C δ is required for T cell activation and homeostatic proliferation. *Science Signaling* **4**: ra84. PMID: PMC3242502
18. Rybakin, V., Clamme, J.-P., Ampudia, J., Yachi, P.P., and **Gascoigne, N.R.J.** (2011). CD8 $\alpha\alpha$ and $\beta\beta$ isotypes are equally recruited to the immunological synapse through their ability to bind MHC class I. *EMBO Rep* **12**:1251-1256. PMID: PMC3245696
19. Fu, G., Vallée, S., Rybakin, V., McGuire, M.V., Ampudia, J., Brockmeyer, C., Salek, M., Fallen, P.R., Hoerter, J.A.H., Munshi, A., Huang, Y.H., Hu, J., Fox, H.S., Sauer, K., Acuto, O., and **Gascoigne, N.R.J.** (2009). Themis controls thymocyte selection through regulation of T cell receptor-mediated signaling. *Nature Immunol.* **10**: 848-856. PMID: PMC2757056