CURRICULUM VITAE

John Irving Bell

DATE OF BIRTH: 1st July 1952

NATIONALITY: Canadian (UK Permanent Resident)

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UNIVERSITY POSTS CURRENTLY HELD:

1987 to date	Hon. Consultant Physician, Oxford Radcliffe NHS Trust
1992 to date	Nuffield Professor of Clinical Medicine Chairman, Department of Medicine, Oxford University School of Medicine
1993 to date	Founder, Wellcome Trust Centre for Human Genetics
1999 to date	Chairman, Partnership Board, Oxford Centre for Diabetes, Endocrinology and Metabolism
1999 to date	Chairman, Trials and Epidemiology Building, Oxford
2002 -	Regius Professor of Medicine, Oxford

POSTS PREVIOUSLY HELD

1979-1982	Postgraduate Clinical Training in Oxford and London
1982-1987	Clinical Fellow, Department of Medicine, Stanford University, Stanford, California, USA
1982-1987	Postdoctoral Fellow, Department of Medical Microbiology, Stanford University, Stanford, California, USA
1987-1989	Wellcome Senior Clinical Fellow and Honorary Consultant Physician, Nuffield Departments of Clinical Medicine and Surgery, John Radcliffe Hospital, Oxford
1989-1992	University Lecturer, Nuffield Department of Clinical Medicine, Oxford University
1992 to 2002	Nuffield Professor of Clinical Medicine, Oxford University

EDUCATION

1966-1971	Ridley College, Canada
1975	B Med Sci (Honours). University of Alberta
1976	BA (Honours), Physiological Sciences, 1st Class, Magdalen College, Oxford University
1979	BM, BCh. Magdalen College, Oxford University
1990	DM Magdalen College, Oxford University
1992	FRCP Royal College of Physicians, London

FELLOWSHIPS

1982	John Radcliffe Research Fellowship, University College, Oxford
1983-1987	Alberta Heritage Trust Fund for Medical Research Fellowship
1987-1989	Wellcome Trust Senior Fellow in Clinical Science
1990	Non-stipendary Fellow, Magdalen College, Oxford
1992	Professorial Fellow, Magdalen College, Oxford

1992	Fellow, Royal College of Physicians
1998	Founder Fellow, Academy of Medical Sciences

AWARDS AND SCHOLARSHIPS

1971	Mason Gold Medal, Ridley College, Canada
1972-1975	Province of Alberta Scholarship
1973	Ambassador's Prize in American History
1975-1978	Rhodes Scholarship
1977	Radcliffe Infirmary Prize in Surgery
1978	Commonwealth Scholarship
1978	Spray Prize in Clinical Biochemistry, Oxford University
2002	Finalist, Descartes Prize
2003	Honorary DSc, University of Alberta, Canada

VISITING PROFESSORSHIPS AND NAMED LECTURES

1991	Norbert Freinkel Lecturer - American Diabetes Association
1995	Alkis Seraphim Lecture, Cambridge University
1996	Visiting Professor, Duke University School of Medicine, North Carolina, USA
1996	Almoth Wright Lecture, St. Mary's Hospital Medical School
1998	Wade Lecture, University of Southampton Medical School
1999	Visiting Professor, Duke University School of Medicine, North Carolina, USA
2001	Visiting Professor in Translational Medicine, University of Alberta, Canada
2002	7th Annual Jus Prize, University of Toronto

INTERNATIONAL SCIENTIFIC ADVISORY BOARDS

1989-	Member, Scientific Advisory Committee, Alberta Heritage Foundation, Canada
1994-1996	Scientific Visiting Committee, Virginia Mason Research Center, USA
1994	Scientific Advisory Board, Medical Research Council, Tropical Medicine Unit, Gambia
1994	International Review Panel, Medical Research Council of Canada
1995	Networks of Centres of Excellence Selection Committee, Medical Research Council of Canada
1999	Astra Zeneca
1999	NovoNordisk AS
2000	Roche Biosciences Scientific Advisory Board
2000	Canadian Institutes for Health Research Directors Scientific Advisory Board
2001	Genome Canada Review Committee
2001	Singapore Government Advisory Committee on Medical Education in Singapore
2002	Biomedical Sciences International Advisory Council of Singapore
2002	President's International Advisory Committee for Canadian Institutes of Health Research
2003	Scientific Council, Consortium National de Recherche en Genomique

MEDICAL, SCIENTIFIC & ADMINISTRATIVE ORGANISATIONS

1989-1990	*Member*, Human Gene Mapping Project (HGMP) Grant Review Panel
1989-1990	*Chairman*, Automated Sequencing Subcommittee, Medical Research Council
1990	*Member*, Association of Physicians of Great Britain and Ireland
1990	*Member*, Human Genome Organisation (HUGO)
1990-1994	*Member*, Cell Panel, Committee A, Medical Research Council
1991-1995	*Member*, Molecular and Cell Biology Panel, Wellcome Trust
1991-1996	*Member*, Nuffield Foundation, Oliver Bird Fund Committee
1991	Scientific Co-ordinating Committee, Arthritis and Rheumatism Council of Great Britain
1992	*Member*, International T Cell Receptor Nomenclature Committee
1992-	*Member*, Medical Research Fund Committee, University of Oxford
1992-1995	Genetics Interest Group, Wellcome Trust
1992-1997	*Chairman*, Wellcome Trust Centre for Human Genetics
1993	Human Genome Mapping Project Committee, MRC
1993-	*Member*, Nuffield Benefaction Committee, University of Oxford

1993 *Member*, MRC HGMP Co-ordinating Committee
1993 *Member*, Department of Health, Expert Advisory Group for Hammersmith & Queen Charlotte's SHA
1993 *Member*, Office of Science & Technology, Human Genome Research Expert Working Group
1993-1995 *Chair*, Information Management Service Unit, University of Oxford
1993-1995 *Member*, Curriculum & Examinations Committee, University of Oxford
1993-1995 *Chairman*, Industrial Advisory Group, MRC
1993-2000 *Member*, Biosciences Research Board, University of Oxford
1993-2000 *Member*, Planning and Development Committee, Faculty of Medicine, University of Oxford
1994- *Member*, Oxford University Boat Club Executive Committee
1994-1995 *Chair*, NHS R & D Working Group, Genetics of Common Disease
1994-2000 *Member*, Clinical Faculty Board, University of Oxford
1994-2000 *Member*, Computing Strategy Group, University of Oxford
1995 *Member*, College Committee on Medical Education & Staffing, Royal College of Physicians
1995-1996 *Chairman*, Regional Sub-Specialty Committee in General Medicine
1995-1996 Regional Specialty Adviser in General Medicine
1995-1997 *Member*, Discretionary Awards Committee, Oxford Radcliffe NHS Trust
1995-1997 *Chairman*, Diabetes, Endocrinology and Metabolism Planning Committee, Oxford Radcliffe NHS Trust
1995-1998 *Member*, Specialist Advisory Committee in General (Internal Medicine), Joint Committee on Higher Medical Training, Royal College of Physicians
1995-1998 *Trustee*, Oxford Diabetes Trust
1996-2002 *Member of Council*, Medical Research Council (United Kingdom)
1996-1999 *Chair*, Medical Research Council, Clinical Training and Career Development Panel
1996-2001 *Chairman of Examiners* or *Senior Examiner*, Oxford University Clinical School, BM examination
1997- *Reviewer*, Hong Kong Medical Research Council
1997- *Member*, MRC Strategy Development Group
1997 *Member*, Oxford Health Development Agency (Anglia & Oxford Regional NHS)
1997-1998 *Trustee*, Mathilda and Terence Kennedy Institute of Rheumatology (United Kingdom)
1997-1999 *Member*, Academic Medicine Committee, Royal College of Physicians
1998 *Chair*, MRC Career Establishment Grants Panel
1998 *Member*, Advisory Group on Scientific Advances in Genetics, MRC/Department of Health (United Kingdom)
1998 *Member*, Chief Executive's Advisory Committee on Research Relevant to Health in Developing Societies, MRC
1999- *Member*, Advisory Board, University of Oxford Challenge Seed Fund
1999-2000 *Member*, ARC Programme Grant Sub-committee
2001 *Member*, Review Committee, Lund University School of Medicine
2000 *Chairman*, Foresight Panel on Genetics in Medicine
2000- *Member*, Working Party on Biomedical Collection, MRC and Wellcome Trust
2000- *Member*, Divisional Board
2000- *Member*, Division of Medical Sciences Board, Oxford University
2000- *Member*, Planning and Resource Allocation Committee, Division of Medicine
2000- *Member*, Strategy Board, Division of Medicine
2001 *Member*, Medical Education Review Panel, Singapore
2001- *Chairman*, NIH-Oxford Graduate Student Program
2001- *Member*, Council, Oxford University
2002- *Trustee*, The Rhodes Trust
2002- *Trustee*, Nuffield Medical Trust
2002- *Member*, Oxford University Finance Committee
2002- *Member*, Oxford University Intellectual Property Advisory Group
2002- *Chair*, Academy of Medical Sciences Working Group on Impediments to Medical Research
2003- *Chair*, Scientific Advisory Committee, UK Biobank

SPORT

1977	Oxford University Lightweight Boat Club (half-blue)
1994	Oxford University Boat Club Trustee
1996	Senior Member Oxford University Boat Club

DIRECTORSHIPS

1993-2001	*Founding Non-Executive Director and Deputy Chairman,* PowderJect Plc (Oxford)
1996-	*Non-Executive Director,* Isis Innovation Limited (University of Oxford)
1997-	*Founding Non-Executive Director* and *Deputy Chairman,* Oxagen Ltd.
1997-1998	*Non-Executive Director,* Mathilda & Terence Kennedy Institute of Rheumatology
1999-2001	*Founding Director*, *Chairman* (1999) and *Deputy Chairman* (2000-2001), Avidex Ltd
2001-	*Member,* Board of Directors, Roche Holding AG
2001-	*Member*, Council, Oxford University

MAJOR GRANTS (SINCE 1990), excluding Fellowships/Studentships/Project Grants

1991	Wellcome Trust Programme Grant	£750,000
1992 – 1997	MRC Programme Grant (with Wordsworth and Lathrop) *Genetics of rheumatoid arthritis*	£800,000
1993-1999	Core Grant - Wellcome Trust Centre for Human Genomics with Morris) Extended in 1998	£15,000,000
1995 – 2000	MRC Programme Grant (with A.J. McMichael) *Cellular and molecular basis of immunodominance*	£1,800,000
1997	Link Grant (MRC)	£450,000
1998 – 2002	RIO Programme (with Hill, Thursz and Thomas) *The genetic susceptibility to Hepatitis B and C*	£3,500,000
1999 - 2003	MRC Unit in Human Immunology Group Leader	£900,000
2000	MRC Structural Genomic Strategic Grant (with Stuart and Jones) *Member of Management Group*	£6,000,000
2001	Wellcome Trust Programme Grant (with Goodnow and Cornall) *A programme of ENU mutagenesis to identify the pathways governing lymphocyte responses to antigen*	£1,800,000
2002	Co-ordinator – EU Functional Genomics Grant 'Developing the Technology for Genomic Epidemiology'.	€15,000,000
2001	Merck (with Collins and Lathrop) – Cardiovascular genetic epidemiology. Contract under negotiation.	£1,000,000

Nuffield Department of Clinical Medicine

The Department now brings in approximately a third of the University's total research income and conducts half the research activity of the new Division of Medical Sciences (Clinical and Pre-clinical Medicine). Over the past nine years, I have attempted to develop a broad base of biomedical science in the NDM, stretching from molecular and structural biology, through the population-based epidemiology and clinical trials. This strategy has been driven by the availability of genetic and genomic technologies that have relevance to virtually every area of biomedical research. This approach has proved to be successful in terms of activity; the Department has expanded its research income from a turnover of £5 million per year in 1992-1993 to £37 million per year in 2000-2001, growing 10%-30% per annum in recent years. I have promoted and developed programmes in the Department in the genetics of common disease, structural biology including structural genomics, bioinformatics, genetic epidemiology, and developmental biology. These have all been novel areas for the Clinical Faculty and have relied on the recruitment of international leaders in these fields for the successful development of these programmes. I have successfully recruited and built programmes in bioinformatics (Cardon, Mott), structural (Stuart, Jones, Fuller) and developmental biology (Robertson) and the genetics of common disease (Lathrop, Monaco, Brown). Expansion into these areas of research has made the Department one of Europe's leading centres in functional genomics. Two of the five major programmes short-listed by the pre-selection committee for the EU Functional Genomics initiatives were network based in the NDM in Oxford. In translational research, it contains two of the largest clinical trials and epidemiology programmes in the UK – that led by Sir Richard Peto and Professor Rory Collins at the Clinical Trials Service Unit, and the Cancer Epidemiology Unit, led by Professor Valerie Beral. In addition, the Department has been active in developing translational research within the framework of its diabetes, vaccine, tropical medicine and cancer programmes.

Division of Medical Sciences

The NDM has played a crucial role in strategic developments within the Faculty of Medical Sciences. The development of the new campus on the Churchill site, which comprises eight newly funded institutes, either recently built or currently under construction, was a development conceived and promoted by me in my role as Nuffield Professor. The Department of Medicine is the senior partner in most of these Institutes. They include the Wellcome Trust Centre for Human Genetics, the Oxford Centre for Diabetes, Endocrinology and Metabolism, the Oxford Vaccine and Tropical Medicine Centre, the Centre for Cell and Molecular Physiology, the Cryo-Electronmicroscopy Category III Facility, the Structural Genomics Building, the Bone and Joint Research Centre, the Trials and Epidemiology Building and, in the near future, the Centre for Cancer Medicine. When completed, this will be one of the largest research campuses in biomedical science in Europe. The development of this 'Research Crescent' concept has required more than £100 million to be raised outside the University for capital infrastructure and senior posts. These funds have been raised from a variety of sources, including private individuals, research charities and government organisations, and much of this fund raising has occurred through leadership from the NDM. These developments have been integrated to a strategic plan for the Faculty, written originally by me for the Oxford Development Agency and based on a matrix of platform technologies and clinical areas of research. This strategic document remains the template for future developments in the Clinical School. It has required the recruitment and development in completely new areas of research as well as the strengthening of existing programmes.

Commercialisation

The capacity for commercialisation of basic biomedical science within the Faculty has been transformed in the past ten years. I have been a member of the Board of Isis Innovation for the past five years and have been directly involved in the founding of a series of biotechnology companies including Oxagen, Avidex, Oxxian and PowderJect Pharmaceuticals. I have sat as a Non-Executive Director and either Chairman or Deputy Chairman of all of these companies. I have also facilitated the creation of a number of other biomedical spinouts. The Department's ability to utilise the commercial opportunities as a further source of research income for the Faculty has been responsible for a significant rise in Oxford University Research income over the past two years. I have also pioneered a venture philanthropy fund for the University which ahs partnered Oxford with five major American universities.

Individual Science Programme

Since 1986, my major contributions have been in the field of Immunogenetics. As a Fellow in Professor Hugh McDevitt's lab in Stanford, I was involved in the molecular characterisation of the human Major Histocompatibility Complex Class II region. Over this period, I played an importing role in cloning and characterising a large set of HLA DR and DQ alleles in the human MHC (Bell *et al*. *PNAS*. 1987). This data provided the basis for a clear understanding of the contribution of shuffled hypervariable regions, presumably by gene conversion, to the diversity of human MHC class II alleles. In addition, it provided the information necessary to analyse the molecular basis for HLA disease associations. The most prominent of these sequence-based associations were those recognised in diabetes (Todd *et al. Nature*, 1987) and rheumatoid arthritis (Wordsworth *et al*. *PNAS*, 1989). The newly cloned alleles also provided the necessary reagents for the first definitive physical map of the human MHC class II region done by a graduate student working for me, and applied, for the first time, pulse field gel electrophoresis to the physical mapping of a known human genetic locus (Hardy *et al*. *Nature* 1986).

Between 1987 and 1995, my group focussed on further studies in disease association extending these immunogenetic studies in autoimmune disease beyond the HLA to include other genetic susceptibility determinants. Work done in collaboration with Professor Mark Lathrop and Dr Cecile Julier defined the role of the insulin region on chromosome 11p as the second major locus in diabetes susceptibility (Julier *et al. Nature*, 1991). This paper was the first to utilise a combination of linkage and association in nuclear families, an approach subsequently modified as the TDT test, to identify the role of this locus in disease. It also revealed an important parent of origin effect. Subsequent work in the laboratories fine mapped this region to a 4.1kb segment of DNA upstream of the insulin gene associated with the VNTR (Lucassen *et al*, *Nature Genetics*, 1993) and suggested that variable expression of INS might underlie susceptibility (Lucassen *et al, Hum Mol Genet*, 1995). In addition to this work on non-HLA genes in type I diabetes, I contributed to genome-wide linkage studies in autoimmune disease, particularly in rheumatoid arthritis and inflammatory bowel disease (Satsangi *et al, Nature Genetics*, 1996).

Drs David Jackson and Gavin Screaton in my laboratory were responsible for the characterisation of a number of other lymphocytes cell surface molecules contributing to lymphocyte homing and apoptosis (Jackson *et al. J Biol Chem*, 1992; Screaton *et al. PNAS* 1992; Screaton *et al. PNAS* 1997). The CD44 gene was cloned by expression cloning using the unassigned antibody 8p25. This molecule proved to be extensively alternatively spliced and full characterisation of the genomic structure by my group revealed the molecular basis for this extreme degree of diversity. In order to characterise the molecular basis of this splicing, a collaboration with Dr Adrian Krainer at Cold Spring Harbor allowed my laboratory to identify and characterise three human pre-mRNA splicing to three novel human pre-mRNA splicing factors (SR proteins) (Screaton *et al. EMBO* , 1995), and several novel alternatively spliced death receptors.

My laboratory has also had a long-standing interest in the human T-cell antigen receptor. My group was amongst the first to refine and systematically apply anchored PCR to identify the range of human T-cell receptors involved in antigen specific immune responses and to use the unbiased method to characterise the T-cell repertoire for V_α and V_β chains in peripheral blood. These studies (Moss *et al. PNAS,* 1991; Moss *et al. Eur J Immunol,* 1993) revealed the remarkable homogeneity in

T-cell V_α and V_β sequences seen in responses to the HLA-A2.1 restricted influenza virus matrix peptide 57-58 restricted T-cell response and the oligoclonal populations of T-cells in peripheral blood in a variety of conditions, including CMV infection.

In 1995, the laboratory began to actively develop recombinant protein expression around receptors and co-receptors on the lymphocyte cell surface. In collaboration with Professors David Stuart and Yvonne Jones, my group undertook a series of studies characterising the nature of peptide binding in MHC class I molecules, in particular HLA-B53 (Smith *et al, Immunity*, 1996), B8 and the atypical Class I molecule, HLA-E (O'Callaghan *et al*, *Mol Cell*, 1998). My laboratory was able to successfully express CD8 $\alpha\alpha$ and crystallised this molecule as a co-crystal with MHC class I. The structure revealed that the CD8 molecule clamps a flexible loop to the α3 domain between two CDR-like loops of the CD8 sub-units, similar to an antibody antigen interaction (Gao *et al, Nature*, 1997). The ability to efficiently express and refold HLA class I molecules in my laboratory permitted the generation of the first effective MHC tetramers. This work, done by Professor Paul Moss in collaboration with Dr John Altman from Dr Mark Davis's laboratory and Professor Andrew McMichael, was the first indication that MHC tetramers could be used to identify antigen specific T-cell populations allowing enumeration of T-cell populations from peripheral blood or tissue (Altman *et al. Science,* 1998). The ability to express a T-cell receptor utilising a *fos jun* tail permitted the laboratory to study the contribution of TCR and CD8 to MHC peptide binding (Wyer *et al, Immunity*, 1999). These experiments, done in collaboration with Professor Anton van der Merwe utilising plasmon resonance, revealed that CD8 MHC interaction has very low affinity and very rapid kinetics, and that CD8 contributed little biophysical to TCR MHC binding affinities. In addition, kinetic analysis of T-cell receptors binding MHC peptide, suggested that confirmational adjustments occurred during association and dissociation (Willcox *et al, Immunity*, 1999).

Clinical and Teaching Responsibilities

Clinically, the Department has retained active participation in Acute General Medicine, a major arena for Clinical School education and has simultaneously maintained active teaching programmes in the subspecialties of Nephrology, Infectious Disease, Chest Medicine, Diabetes, Endocrinology, Rheumatology and Dermatology. The Acute Medicine Service has, like most such activities in the NHS, come under severe pressure in recent years. The Department has played a crucial role in maintaining the viability of this service and still contributes 25% of its clinical activity. I have participated actively in this service in the past nine years and have undertaken between twenty and thirty acute takes each year. I have been Senior Medical Examiner or Chairman of Examiners for medical students for the past nine years, during which time we have begun to reform the examination structure and to reform and modernise the examination structure in post-graduate training. The Department has on its books approximately seventy graduate students a year. I have introduced regular reviews of these students by independent faculty and have instigated several new initiatives to bring in several new graduate students to the University, including the NIH Oxford Graduate Student Programme, which provides the National Institutes of Health with a training programme for graduate students funded by the NIH. We are currently developing similar graduate student programmes in Diabetes and Metabolism (funded by the pharmaceutical industry) and with Singapore. We have had unparalleled success in obtaining clinical fellowships for our trainees.

PUBLICATIONS

SCIENTIFIC ARTICLES

Mason DY, Bell JI, Christensson KB & Biderfield P. An immunohistological study of human lymphoma. Clinic Exp Imm; 40: 235. 1980

Gatter KC & Bell JI. Immunofluorescent study of the ampicillin rash. Clin Allergy; 12: 279-280. 1982

Bell JI, Wainscoat JS, Old JM, Chlouverakis C, Keen H, Turner RC & Weatherall DJ. Maturity onset diabetes of the young is not linked to the insulin gene. Brit Med J; 286: 590-591. 1983

Ratcliffe PJ, Bell JI, Collins JK, Frakowiak RS & Rudge P. Late onset post-traumatic hypothalmic hypothemia. J Neurol Neurosurg Psychiatry; 46: 72-74. 1983

Wainscoat JS, Bell JI, Old JM, Weatherall DJ, Furbetta M,Galanello R & Cao A. Globin gene mapping in Sardinian patients homozygous for Thalassaemia. Mol Biol Med; 1: 1-10. 1983

Wainscoat JS, Bell JI, Thein SL, Higgs DR, Sergeant GR, Peto TEA & Weatherall DJ. Multiple origins of the sickle mutation:evidence from β S globin gene cluster polymorphism. Mol Biol Med; 1: 191-197. 1983

Bell JI, Estess P, St John T, Saiki R, Watling DL & Erlich HA. DNA sequence and characterisation of human class II major histocompatibility complex beta chains. Proc Natl Acad Sci; 82: 3405-3409. 1984

Bell JI, Denney DY & McDevitt HO. Structure and polymorphism of murine and human class II major histocompatibility antigens. Immun Rev; 84: 51-57. 1985

Wainscoat JS, Thein SL, Higgs DR, Bell JI, Weatherall DJ, Al-Awamy BH & Serjeant GR. A genetic marker for elevated levels of haemoglobin F in homozygous sickle cell disease. Br J Haematol; 60: 261-268. 1985

* Hardy D, Bell JI, Long EO, Lindsten J & McDevitt HO. Mapping of the class II region of the human major histocompatibility complex by pulsed-field gel electrophoresis. Nature; 323: 453-455. 1986

Bell JI, Rassenti L, Smoot G, Smith K, Newby C, Hohlfeld R, Toyka K, McDevitt HO & Steinman L. HLA-DQ beta-chain polymorpism linked to myasthenia gravis. Lancet; : 1058-1060. 1986

Holloman JD, Bell JI, Kilduff TS, Dement WC, Guilleminault C. HLA-DR Restriction-Fragment-Length polymorphisms in narcolepsy. J of Neuroscience Research; 18: 239-244. 1987

Wainscoat JS, Pilkington S, Peto TEA, Bell JI & Higgs DR. Allele-specific DNA identity patterns. Hum Genet; 75: 384-387. 1987

Bell JI & McDevitt HO. Polymorphism in the class II region of the human major histocompatibility complex. In: Molecular Biology of Homo Sapiens. Cold Spring Harbour Symposium on Quantitative Biology: 75-82. 1987

Bell JI, MacMurray AJ, Denney D, Foster LS, Watling Dl & McDevitt HO. Molecular mapping of the class II region of the human MHC.I. DRβ. J Immunol; 139: 562-573. 1987

MacMurry AJ, Bell JI, Denney D, Foster LS, Watling DL & McDevitt HO. Molecular mapping of the class II region of the human MHC.II. DQβ. J Immunol; 139: 574-586. 1987

Lee BM, Bell JI, Rust N & McDevitt HO. DQb polymorphism among DR2 haplotypes. Immunogenetics; 26: 85-91. 1987

* Bell JI, Denney D, Foster L, Belt T & McDevitt HO. Allelic variation in the DR subregion of the human major histocompatibility complex. Proc Natl Acad Sci; 84: 6234-6238. 1987

* Todd JA, Bell JI & McDevitt HO. HLA-DQ? gene contributes to susceptibility and resistance to insulin-dependent diabetes mellitus. Nature; 329: 599-604. 1987

Bell JI, Steinman L, Toyka K & McDevitt HO. HLA-DQ restriction fragment length polymorphisms in myasthenia gravis. Anal NY Acad Sci: 382-387. 1987

Hurley CK, Gregersen P, Steiner N, Bell JI, Hartzman R, Nepom G, Silver J & Johnson AH. Polymorphism of the HLA-D region in American blacks. J Immunol; 140: 885-892. 1988

Todd JA, Acha-Orbea H, Bell JI, Chao N, Fronek Z, Jacob CO, McDermott M, Sinha AA, Timmerman L, Steinman L & McDevitt HO. A molecular basis for MHC class II-associated autoimmunity. Science; 24: 1004-1009. 1988

Todd JA, Bell JI & McDevitt HO. A molecular basis for genetic susceptibility to insulin-dependent diabetes mellitus. Trends in Genetics; 4: 129-134. 1988

Weatherall DJ, Bell JI, Clegg JB, Flint J, Higgs DR, Hill AVS, Pasvol G & Thein SL. Genetic factors as determinants of infectious disease transmission in human communities. Phil Trans Roy Soc Series B; 321: 327-348. 1988

Bell JI, Todd JA & McDevitt HO. The molecular basis of HLA disease association. Advances in Human Genetics; 18: 1-35. 1989

Bangham CRM, Daenke S, Phillips RE, Cruichshank JK & Bell JI. Enzymatic amplification of exogenous and endogenous retroviral sequences from DNA of patients with tropical spastic paraparesis. EMBO Journal; 7: 4179-4184. 1989

Bell JI & Todd JA. HLA class II sequences infer mechanisms for major histocompatibility complex associated disease susceptibility. Molecular Biology and Medicine; 6: 43-53. 1989

* Wordsworth BP, Lanchbury JSS, Sakkas LT, Welsh KI, Panayi GS & Bell JI. HLA DR4 subtype frequencies in rheumatoid arthritis indicate that DRB1 is the major susceptibility locus within the HLA class II region. Proc Natl Acad Sci; 86: 10049-10053. 1989

Bell JI. The Polymerase Chain Reaction. Immunology Today; 10: 351-355. 1989

Rosenberg W, Wordsworth BP, Jewell D & Bell JI. Locus telomeric to HLA-DPB encodes susceptibility to coeliac disease. Immunogenetics; 30: 307-310. 1989

Bell JI. MHC and disease susceptibility. Current Opinion in Immunology; 2: 114-116. 1989

Bell JI. Chromosome crawling in the MHC. Trends in Genetics; 5: 289. 1989

Bell JI & Wordsworth BP. More molecular immunogenetics. Brit J Rheumatol; 28: 170-173. 1989

Bell JI. Human genetic information. Prenatal Diagnosis, Current Practice and Future Trends in Science, Law and Ethics. CIBA Symposium. 1989

Wordsworth BP, Hughes D, Allan I, Keat A & Bell JI. Chlamydial DNA is absent from the joints of patients with sexually acquired reactive arthritis. Brit J Rheum; 29: 208-210. 1990

Jackson DG & Bell JI. Isolation of a cDNA encoding the human CD38 (T10) molecule, a cell surface glycoprotein with an unusual discontinuous pattern of expression during lymphocyte differentiation. J Immunol; 144: 2811-2815. 1990

Ratcliffe PJ, Jones RW, Phillips RE, Nicholls LG & Bell JI. Oxygen-dependent modulation of erythropoietin mRNA levels in isolated rat kidneys studied by RNAse protection. J Exp Med: 172. 1990

Wordsworth BP, Allsop CEM, Young RP & Bell JI. HLA-DR typing using DNA amplification by the polymerase chain reaction and sequential hybridisation to sequence-specific oligonucleotide probes. Immunogenetics; 32: 413-418. 1990

Hyer RN, Julier C, Buckley JD, Trucco M, Rotter J, Spielman R, Barnett A, Bain S, Boitard C, Deschamps I, Todd JA, Bell JI & Lathrop GM. High resolution linkage mapping for susceptibility genes in human polygenic disease: insulin-dependent diabetes mellitus and chromosome 11q. Am J Hum Genet; 48: 243-257. 1991

Wordsworth BP, Stedeford J, Rosenberg WMC & Bell JI. Limited heterogeneity of the HLAclass II contribution to susceptibility to rheumatoid arthritis is suggested by positive associations with HLA-DR4, DR1 and DRw10. Br J Rheumatol; 30: 178-180. 1991

Mehal WZ, Wordsworth BP, Taylor CJ, Bell JI, Fleming KA & Chapman RW. HLA-DRw52a is not a specific susceptibility antigen for primary sclerosing cholangitis (Letter). New Engl J Med: 1252. 1991

Ong B, Willcox N, Wordsworth BP, Beeson D, Vincent A, Altmann D, Lanchbury JSS, Harcourt GC, Bell JI & Newsom-Davis J. Critical role for the Val/Gly86 HLA-DRβ dimorphism in autoantigen presentation to human T cells. Proc Natl Acad Sci; 88: 7343-7347. 1991

* Moss PAH, Moots RJ, Rosenberg WMC, Rowland-Jones SJ, Bodmer HC, McMichael AJ & Bell JI. Extensive conservation of a and b chains of the human T cell antigen receptor recognising HLA-A2 and influenza A matrix peptide. Proc Natl Acad Sci; 88: 8987-8990. 1991

McMichael A & Bell JI. HLA B27: a disease associated response gene. Annal Inst Pasteur; 142: 475-482. 1991

Lo Y-M D, Mehal WZ, Wordsworth BP, Chapman RW, Fleming KA, Bell JI & Wainscoat JS. HLA typing by double ARMS. The Lancet; 338: 65-66. 1991

Lanchbury JSS, Jaeger EEM, Wordsworth P, Hall MA, Sansom DM, Stedeford J, Bell JI & Panayi GS. Strong primary selection for the Dw4 subtype of DR4 accounts for the HLA-DQw7 association with Felty's syndrome. Hum Immunol; 32: 1 56-64 1991

Loveridge JA, Rosenberg WMC, Kirkwood TBL & Bell JI. The genetic contribution to human T cell receptor repertoire. Immunology; 74: 246-250. 1991

Wordsworth BP & Bell JI. Polygenic susceptibility in rheumatoid arthritis. Ann Rheum Dis; 50: 343-346. 1991

* Julier C, Hyer RN, Davies J, Merlin F, Soularue P, Briant L, Cathelineau G, Deschamps I, Rotter J, Froguel P, Boitard C, Bell JI & Lathrop GM. Insulin-IGF2 region on chromosome 11p encodes a gene implicated in HLA-DR4-dependent diabetes susceptibility. Nature; 354: 155-159. 1991

Wordsworth BP, Stedeford J, Rosenberg WMC & Bell JI. Limited heterogeneity of the HLA class II contribution to susceptibility to rheumatoid arthritis is suggested by positive associations with HLA-DR4, DR1 and DRw10. Brit J Rheum; 30: 178-180. 1991

Cornélis F, Hashimoto L, Loveridge J, MacCarthy A, Buckle V, Julier C & Bell JI. Identification of a CA repeat at TCRA locus using yeast artificial chromosomes: a general method to generate highly polymorphic markers at chosen loci. Genomics;
13: 3 820-825. 1992

Wordsworth BP & Bell JI. The immunogenetics of rheumatoid arthritis. Springer Seminars in Pathology and Immunopathology. Springer Semin Immunopathol; 14: 59-78. 1992

Rosenberg WC, Moss PAH & Bell JI. Variation in human T-Cell receptor Vβ and Jβ repertoire: analysis using anchor polymerase chain reaction. Eur J Immunol; 22: 541-549. 1992

Rosenberg WMC, Bushell A, Higgins R, Wordsworth BP, Wood KJ, Bell JI & Morris PJ. Isolated HLA-DP mismatches between donors and recipients do not influence the function or outcome of renal transplants. Hum Immunol; 33: 5-9. 1992

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