VOLUME EDITORS

Christine A. Biron is the Esther Elizabeth Brintzenhoff Professor and former Chairperson in the Department of Molecular Microbiology and Immunology at Brown University in Providence, RI, USA. She trained at the University of Massachusetts in Amherst and Worcester, the University of North Carolina in Chapel Hill, and Scripps Research Foundation in La Jolla, California. She was a Visiting Scientist at the Karolinska Institute in Stockholm, Sweden, as well as a Visiting Professor at Trinity College Dublin, Ireland. A past Scholar of the Leukemia Society of American, she has served as Associate Editors for the *Journal of Immunology and for Immunity*, on the Editorial Board for *Virology*, on National Institutes of Health USA (NIH) Study Sections, on the Board of Scientific Counselors of the National Cancer Institute (NCI), on the US—Japan Immunology Board for National Institutes of Allergy and Infectious Diseases (NIAID), and on the Board of Scientific Counselors of the NIAID. Professor Biron was a Distinguished Lecturer at the 2015 Meeting of the American Association of Immunologists. She is currently a *Journal of Experimental Medicine* Advisory Editor, an Editor for *mBio,* and on the External Scientific Advisory Board for the Trudeau Institute. She is a member of the American Association of Immunologists, American Society for Virology, the Society for Leukocyte Biology, and the International Cytokine and Interferon Society, and an elected Fellow of both the American Association for the Advancement of Science and the American Academy of Microbiology.

Professor Biron focuses her research on innate immunity to viruses, particularly at the level of natural killer (NK) cells, cytokines, and signal transducers and activators of transcription (STATs). Her work has made important contributions to the understanding of (1) NK cell regulation and function, (2) induction and cellular sources of innate cytokines, (3) cytokines in health and disease, and (4) unique roles for, and intracellular mechanisms regulating the functions of, type 1 interferons (IFNs) in NK and CD8 T cells. She is an author or coauthor of over 145 primary research papers, reviews, book chapters, and commentaries.

Marina Cavazzana is a pediatrician, Professor of Hematology since 2000, and Director of the Department of Biotherapy at Hospital Necker, University Paris Descartes. She is the Director of the Inserm/Assistance Publique — Hôpitaux de Paris GHU Ouest Biotherapy Clinical Investigation Center and leads a research Laboratory at Imagine Institute. She studied medicine in Padua, Italy, and received the degree, Doctor of Medicine in 1983, her certification in Pediatrics in 1987 and a PhD in Life Sciences in 1993 (University Paris VII).

Her main research and clinical interests are development of the immune system, genetic diseases of the hematopoietic system, and cell and gene therapy. She has initiated several clinical trials based on the use of *ex vivo* gene-modified cells to treat patients with inherited disorders, with encouraging preliminary clinical results. This work was rewarded by the American Society of Hematology (Award on Clinical Research in Gene Therapy in 1999), by the French Academy of Sciences (Special Medical Award in 2000 and Jean-Pierre Lecocq Award on Gene Therapy in 2004). She was awarded the title of Officier de l'Ordre National de la Légion d'honneur in 2011 and given the Irène Joliot Curie 2012 award 'Scientific Women of the Year' (Science Academy and French Ministry of Education and Research).

Dr Marco Colonna was born in Parma, Italy. He received his medical degree and his specialization in Internal Medicine at Parma University. He completed his postdoctoral training at the National Cancer Institute (Genova, Italy), Roswell Park Memorial Institute (Buffalo, New York, USA), and Harvard Medical School (Cambridge, Massachusetts, USA). He became a scientific member of the Basel Institute for Immunology in Basel, Switzerland, a leading center for immunology research. Since 2001 he has been a Professor of Pathology and Immunology at Washington University School of Medicine in St. Louis, MO.

Dr Colonna's research focuses on immunoreceptors. In this field his accomplishments encompass identification and characterization of the Killer cell Ig-like receptors and HLA-C polymorphisms as their inhibitory ligands, as well as the discovery of the LILR and TREM inhibitory and activating receptor families. Through analysis of the cellular distribution of these receptors, he identified plasmacytoid dendritic cells as source of IFN-α/β in antiviral responses and innate lymphoid cells that produce IL-22 in mucosae. His current areas of research include (1) innate lymphoid cells in mucosal immunity, (2) plasmacytoid dendritic cells in host defense and autoimmunity, and (3) innate immunoreceptors in Alzheimer's disease.

Anne Cooke is an Emeritus Professor of Immunology at the University of Cambridge. She obtained her BSc (Hons) Biochemistry from the University of Glasgow and her DPhil in Immunology from the University in Sussex. Her research interest in autoimmune diseases crystallized during her research time at the Middlesex Hospital Medical School/University College London in Professor Ivan Roitt's Department. Initially studying autoimmune hemolytic disease, she moved to studies of autoimmune thyroid disease and ultimately to Type 1 diabetes. She then moved to the University of Cambridge. She had a very successful collaboration with Dr Joyce Baird on Type 1 diabetes studies in the BB rat where they identified the early immunological events leading to diabetes onset in this model using sequential pancreatic biopsies. By using the NOD mouse, she further investigated genetic and environmental influences on diabetes development. Alongside her colleague, Dr Jenny Nichols, she isolated NOD ES cells which have facilitated genetic and transgenic studies in this murine model of Type 1 diabetes. Her current research continues in the study of environmental effects on Type 1 diabetes onset and the development of novel therapeutic approaches and new ways of analyzing events unfolding in the diabetic pancreas.

She is a Fellow of the Academy of Medical Sciences, Fellow of the Society of Biologists, Honorary Doctor at the University of Copenhagen, Denmark, and an Honorary Fellow of UCL, London.

Anthony L. DeFranco received the PhD in Biochemistry in 1979 from the University of California, Berkeley, for thesis work on bacterial chemotaxis with Daniel Koshland. He then did postdoctoral work on B cell activation with William Paul at the National Institutes of Health in Bethesda, Maryland, until 1983 when he joined the faculty of the Department of Microbiology and Immunology, University of California, San Francisco. He was promoted to Professor in 1994 and served as Chairman of the Department from 1999 to 2009.

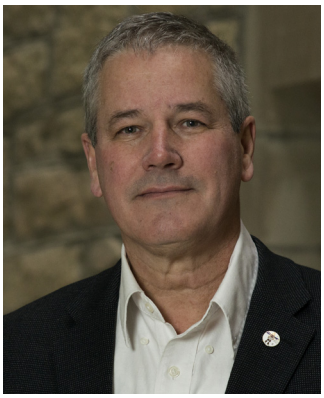
Dr DeFranco's research has centered on understanding the roles of cell surface receptors in regulating immune responses, with focus on the B cell receptor for antigen (BCR) and Toll-like receptors (TLRs). His laboratory established that the BCR signals via activation of protein tyrosine phosphorylation and that phosphorylation of the membrane immunoglobulin-associated polypeptides Igα and Igβ was an essential early step in the signaling mechanism and was restricted to ligand-engaged BCRs. They also established the role of tyrosine phosphorylation in BCR signaling via PIP2 hydrolysis. Using genetically modified mice, they established the critical role for Src-family and Syk tyrosine kinases in primary macrophages signaling downstream of activating Fc receptors. They also established the critical role of the Src-family tyrosine kinase Lyn in mediating inhibitory receptor signaling to attenuate BCR signaling and have studied the mechanism by which Lyn-deficiency leads to lupuslike autoantibody production in mice.

In studies of TLR signaling, Dr DeFranco's laboratory characterized signaling in macrophages responding to the TLR4 ligand LPS and demonstrated activation of the Erk and JNK MAP kinases as important signaling events. Recently they generated a conditional allele of the gene encoding the key TLR signaling component MyD88 and have used it to create mice lacking MyD88 in dendritic cells or B cells. These mice have been used to analyze the functions of TLR signaling response in various infection models, in the germinal center antibody response, and in the Lyn-deficiency model of lupus. These studies revealed that TLR signaling in B cells via TLR7 or TLR9 plays an important role in the affinity maturation of B cells, including the generation of neutralizing antibodies to a number of viruses.

Dr DeFranco served on the Editorial Board of the *Journal of Immunology* as Section Editor and Deputy Editor (1999–2001), served as a guest editor for the *Annual Reviews of Immunology* (1990–2001), served as lecturer in the American Association of Immunologists Advanced Immunology Course (1995–97), and on the AAI Awards Committee (2002–05). He was a co-organizer of the 2001 Keystone Conference entitled B cell Immunobiology and Disease. He has served on the Leukemia and Lymphoma Society of America's career development committee (1999–2005), on the NIH Experimental Immunology study section, including as its Chair (1995–97). He currently serves on the European Research Council's panel for pan-Europe junior faculty grants (2012–16) and on the NIH Cellular and Molecular Immunology A (CMIA) panel (2014 to present). Together with Richard Locksley and Miranda Robertson, he authored the Immunology textbook, *Immunity: the Immune Response in Infectious and Inflammatory Disease* (New Science Press, 2007).

Tim Elliott left the University of Oxford with a first in Biochemistry in 1983 then did a PhD in antibody engineering at the University of Southampton in 1986. He completed his postdoctoral training at MIT with Herman Eisen at the Center for Cancer Research. In 1990 he returned to the University of Oxford to join the Institute for Molecular Medicine as a Wellcome Trust Research Fellow, joining a key group of immunologists studying antigen presentation at the molecular level. This turned out to be a golden era of discovery in antigen processing: defining the immunostimulatory properties of MHC Class I molecules and elucidating the molecular mechanisms of the antigen processing pathway. In 1993 he was appointed to a lectureship and later a Professorship at Balliol College, University of Oxford, as a Wellcome Trust Senior Fellow in Basic Biomedical Science. In 2000, he moved to the University of Southampton as Professor of Experimental Oncology and 5 years later became Associate Dean for the Faculty of Medicine. During this time he has incorporated discoveries in the areas of antigen processing, T cell regulation and immunodominance into the development of new cancer immunotherapies.

Dr Olivera (Olja) J. Finn is University of Pittsburgh Distinguished Professor of Immunology and Surgery and Founding Chair of the Department of Immunology, the position she held from 2001 to 2013. She was Program Leader of the Cancer Immunology Program at the University of Pittsburgh Cancer Institute from 1991 to 2014. After receiving her PhD in Immunology at Stanford University in 1980, under the mentorship of Dr Henry S. Kaplan, and completing her postdoctoral training there in 1982 under the mentorship of Dr Ronald Levy, Dr Finn moved to Duke University and in 1991 to the University of Pittsburgh. She gained prominence through her original focus on transplantation biology and later through her basic and applied research focused on tumor antigens and the development of cancer vaccines. She has an extensive track record of research accomplishments reported in over 170 peer-reviewed papers and numerous reviews and book chapters. She is the discoverer of the MUC1 tumor antigen and has published extensively and continuously for the last 25 years on her basic and preclinical work on the development and evaluation of MUC1 cancer vaccines. She has been a coinvestigator on a dozen clinical trials of various MUC1 vaccines in pancreatic, colon, breast, prostate, and lung cancer. Dr Finn and her team also identified cyclin B1 as a tumor antigen and published several papers on its excellent potential as a cancer vaccine. Her current efforts are on the development of preventative cancer vaccines. She is on the editorial board of many cancer journals and advisory boards of many cancer centers and several companies. She is an active member of the American Association of Immunologists where she served 7 years as Council member and 1 year as President. She is also a member of the American Association for Cancer Research and Past Chair of the Steering Committee of the AACR Cancer Immunology (CIMM) Working Group.



John R Gordon received his PhD in immunology (1983, with John Allen) from the University of Saskatchewan. He moved to a postdoctoral fellowship at the National Institute for Medical Research, Mill Hill (1984–87, with Diane McLaren), and then to Harvard Medical School/Beth Israel Hospital (1987–91, with Steve Galli), where he focused on mast cell biology and, more specifically, cytokine production by these cells. In 1991 he moved back to the University of Saskatchewan as an Associate Professor in the Western College of Veterinary Medicine.

Dr Gordon's lab has examined the immunobiology of allergic reactions, but also extended out to address roles of the ELR-CXC chemokines in neutrophilic inflammatory reactions. They developed, patented, and licensed out a series of antagonistic interleukin-8 analogs that have been shown to have substantial therapeutic effects in a number of model systems. In 2007 he moved to the Department of Medicine at the University of Saskatchewan where he served a number of administrative roles. He is presently a Professor in the Division of Respirology, Critical Care, and Sleep Medicine.

Dr Gordon has published over 110 peer-reviewed reports and received multiple awards for his research. He has chaired or sat on a number of review panels, including as chair of the Canadian Institutes of Health Research Immunology and Transplantation grant panel, the Gairdner Foundation Medical Review Panel, and presently as Vice president of the Canadian Society for Immunology.

Dr Gordon's research interests continue to be in the field of the biology of cells associated with allergic and inflammatory reactions, but also the development and translation into the clinic of dendritic cell immunotherapeutic approaches for allergic and inflammatory diseases. For example, they have shown that tolerogenic dendritic cells can abrogate the disease phenotype in mouse models of asthma and peanut anaphylaxis, and recapitulated this with T cells from atopic asthmatic individuals, documenting the mechanisms by which the treatment dendritic cells induce regulatory T cell responses in each system.

Dr Cynthia J. Guidos obtained her BSc and PhD degrees at the University of Alberta in Edmonton and did postdoctoral training with Dr Irving Weissman at Stanford University. She established her independent research program at the Hospital for Sick Children Research Institute in 1991, where she is currently a Senior Scientist in the Developmental and Stem Cell Biology Program. She is also a Professor in Department of Immunology in the Faculty of Medicine at the University of Toronto. The long-term goal of her research program is to define molecular mechanisms of T lymphocyte development in the thymus. She published the first direct demonstration that CD4/CD8 double positive thymocytes are the immediate precursors of mature CD4 and CD8 T cells and that positive selection precedes negative selection for certain self antigens. Since then she has elucidated how pre-TCR and TCR signals promote distinct developmental transitions as T cells mature in the thymus. In recent years, Dr Guidos has focused on elucidating the functions and regulation of Notch1 signaling at each stage of intrathymic T cell development. Notch signaling is highly conserved and regulates intercellular communication to control cell fate decisions and homeostasis in many tissues. Her work has demonstrated critical roles for Lunatic Fringe, a glycosyltransferase that modifies the extracellular domain of Notch receptors, in strengthening Delta-like4-induced Notch1 activation during T-lineage and during thymocyte β-selection. Her latest work revealed that interleukin-7 collaborates with Notch signaling to coordinate proliferation, differentiation, and *TCRA* recombination during thymocyte β-selection. Her current efforts are focused on characterizing Notch functions in development and homeostasis of innate T cells and their roles in autoinflammatory disease.

Dr Guidos also has led and collaborated in large-scale projects that seek to define and understand how normal developmental programs become subverted during the development of leukemia. She established novel murine models of pre-B cell leukemia, the most common cancer of childhood, and used these models to identify the SYK tyrosine kinase as a new therapeutic target in B cell acute lymphoblastic leukemia (B-ALL). Finally, Dr Guidos has a long-standing interest and expertise in flow and mass cytometry and serves as Scientific Director of the largest research flow facility in Canada.

Dr Guidos has chaired and served on grant panels at the Canadian Institutes of Health Research, the Canadian Cancer Society Research Institute, and the National Institutes of Health (USA). She has organized and chaired numerous international conferences in immunology, served on journal editorial boards, and as an ad-hoc reviewer for top-tier Immunology journals.

Following undergraduate programs in agriculture and veterinary science, Wayne Hein completed his PhD in immunology at the John Curtin School of Medical Research, Australian National University. Over the next 13 years, he conducted basic research at the Basel Institute for Immunology, Switzerland, into the immune system, using sheep as a model animal. Following a move to New Zealand, his research interests focused on applied immunoparasitology. From 2007 to 2010 he was the Director of the Hopkirk Research Institute located at Massey University which investigated parasitic and infectious diseases of livestock. From 2011 to 2014 he was Head of the School of Veterinary and Biomedical Sciences at James Cook University, Australia. Professor Hein is currently Head of the School of Animal and Veterinary Sciences and Dean of Roseworthy Campus at the University of Adelaide. Professor Hein has published extensively in basic and applied immunology of ruminants and participated in numerous scientific advisory and review committees.

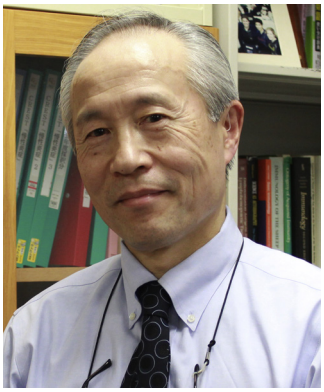
Paul M. Kaye trained in parasitology at Imperial College London, before studying for his PhD in Immunology under Professor Sir Marc Feldmann at the Imperial Cancer Research Fund's Tumour Immunology Unit at University College London. After establishing his career in infectious disease immunology over a 20-year period at the London School of Hygiene and Tropical Medicine, Paul moved to the University of York in 2004 as founding Director of the Centre for Immunology and Infection. Paul is a Wellcome Trust Senior Investigator, and in 2015 he was elected as a Fellow of the Academy of Medical Sciences. His basic research focuses on antigen presenting cell biology, with a particular emphasis on the temporal and tissue-specific changes that occur during the progression of inflammatory and infectious disease. Experimental models of visceral leishmaniasis provide the major context for his research, complemented more recently by clinical research on human leishmaniasis. The experimental approaches used in his laboratory are interdisciplinary, coupling computational modeling, intravital imaging, transcriptomics, and conventional approaches in cellular immunology. Paul's group has recently conducted a successful first-in-human clinical trial of a new adenovirus-based therapeutic vaccine for leishmaniasis and a Phase II trial to evaluate efficacy for the treatment of post-kala-azar dermal leishmaniasis is ongoing, in collaboration with the Institute of Endemic Diseases, Khartoum.

Alberto Mantovani, MD, is Professor of Pathology at the Humanitas University in Milano and Scientific Director of the Istituto Clinico Humanitas. His interests have always been focused on the mechanisms of immunological defense, innate immunity in particular. He has contributed to the advancement of knowledge in this area both by formulating new paradigms and by identifying new molecules and functions.

For his research activity he has received several national and international awards, including the Biotec Award, Marie T. Bonazinga Award, the EFIS Schering-Plough Award, the Galileo Galilei International Award, and the Milstein Award. In recognition of his contribution to medical science, Alberto Mantovani was unanimously nominated 'Outstanding Scientist 2009' by the Scientific Council of the William Harvey Research Institute. He is Vice President/President Elect of the International Union of Immunological Societies (2013–16). He served in the Board of the Global Alliance for Vaccines and Immunization (GAVI) (2007–10). He has served in the board of national and international scientific societies, including the International Cytokine Society where he was President (2009–10). For many years now, bibliometric analysis indicates him as the most cited Italian researcher working in Italy, as well as one of the most cited immunologists in the world. He has received more than 74,000 citations and has an H-index of 134 (Scopus), 117 (ISI), 154 (Google Scholar).

Dr Alberto Martin is an Associate Professor in the Department of Immunology at the University of Toronto. He did his undergraduate training at McGill University. He completed his graduate work with a PhD in 1999 in the Department of Immunology at the University of Toronto, working on the autoimmune condition dermatomyositis. Dr Martin then pursued postdoctoral training at Albert Einstein College of Medicine in the Bronx with Dr Matthew D. Scharff. This training focused on characterizing the molecular mechanisms of secondary antibody responses, namely somatic hypermutation and class switch recombination, which are two processes that are central to the efficient neutralizing of pathogens and toxins. In 2003, he was recruited as a faculty member to the Department of Immunology at the University of Toronto.

Dr Martin's research is focused in three main areas. His main interests include antibody production, how high-affinity antibodies are generated, and how antibodies of different classes are produced. Both of these processes are necessary for an efficient antibody response. In addition, he has investigated how these processes are linked to lymphoma generation, due to the now-recognized link between antibody production and cancer development. Dr Martin is also investigating the role of the gut microbiota in the etiology of colon cancer.



Masayuki Miyasaka is Professor Emeritus of Osaka University, Japan, and a FiDiPro (Finland Distinguished Professor) of the Academy of Finland. He was formerly Professor and Chairman of the Laboratory of Immunodynamics, Department of Immunology and Microbiology, at the Osaka University Graduate School of Medicine in Osaka, Japan (1994–2012). He was President of the Japanese Society for Immunology (2006–08). He was also an Editor of *FEBS Letters* (1998–2012), an Associate Editor of *Immunology* (2004–07) and is currently an Associate Editor of *International Immunology*. He received the MD from the Kyoto University School of Medicine in Japan in 1973 and PhD in immunology from the John Curtin School of Medical Research, Australian National University in Canberra in 1981. He then served as a member of the Basel Institute of Immunology in Switzerland (1981–86), where he studied the ontogeny of the lymphoid system and lymphocyte migration. Currently, Dr Miyasaka is interested in the molecular mechanisms underlying lymphocyte trafficking into various tissues as well as the mechanism of tumor metastasis *in vivo*. Main topics of his research are (1) physiological recruitment of lymphocytes and dendritic cells from the body into secondary lymphoid tissues and (2) functions and regulation of intercellular adhesion molecules and chemokines, and their regulators.

Born in England, Dr Tim Mosmann grew up in South Africa and then moved to Canada for his PhD studies on transcriptional regulation in mouse cytomegalovirus. As a postdoctoral fellow, he switched to immunology and studied the regulation of synthesis and secretion of components of antibodies. On establishing his lab in Edmonton, Canada, he started to work on T cell lines, and shortly after was recruited to DNAX, a start-up company in Palo Alto. DNAX was acquired by Schering Plough and operated as a basic discovery division of the pharmaceutical company. There was a strong focus on characterization and cloning of cytokines in the immune system, and as part of this work, Dr Mosmann established a high-throughput proliferation and cytotoxicity assay for cytokines. He used this assay to show that there were discrete patterns of cytokines produced by different T cell lines, and this work expanded into the characterization of different functions and further cytokine patterns of Th1 and Th2 T cells. The Th1/Th2 'dichotomy' demonstrated that effector T cells were specialized for different functions and laid the groundwork for more recent demonstrations of additional stable or semistable T cell subsets. This work also led to the prediction of a cross-regulatory cytokine, resulting in the discovery of IL-10. Later work focused on a subset of uncommitted precursor T memory cells that constitute a surprisingly large proportion of many human immune responses. More recently, Dr Mosmann has focused on the objective analysis of flow cytometry data, collaborating on the development of algorithms that allow objective mining of the rich information contained in flow cytometry data sets.

Dr Antonius (Ton) Rolink received his PhD in 1983 from the Free University of Amsterdam. Then he joined the Basel Institute for Immunology where he was a member until 1995 and then a permanent member until 2001. During this time he worked in close collaboration with Prof. Fritz Melchers. In 2001 after the Basel Institute for Immunology was closed, he became Professor of Immunology at the University of Basel. This professorship was endowed by Hoffmann La Roche Ltd, Basel.

Ton Rolink's scientific research focuses on the molecular mechanisms guiding the development of the hematopoietic system in general and B lymphocytes in special.