

Curriculum Vitae, 23 October 2021

Roy O. Weller

Emeritus Professor and Consultant in Neuropathology

Southampton University Faculty of Medicine and Southampton University Hospitals

Home: Qazvin, 22 Abbey Hill Road · Winchester SO237AT · United Kingdom · Tel +44 (0) 1962 867465
roy.weller@ntlworld.com

Academic qualifications from Guy's Hospital Medical School and Royal College of Pathologists

BSc {Hons} Anatomy	1959
MB BS (London)	1962
PhD (London)	1967
MCPATH	1970
MD (London)	1971
FRCPath	1982

Most recent previous appointment

Senior Lecturer (Professor from 1978) and Consultant Neuropathologist in Southampton University Faculty of Medicine and Southampton University Hospitals Trust 1973 - 2003

Past appointments

Guy's Hospital Medical School: London

House Officer, Junior Lecturer in Anatomy and Pathology, Lecturer in Pathology, 1961 - 1967

United States National Institute of Health: Post-Doctoral Fellow in Neuropathology, Albert Einstein College of Medicine, New York, USA, 1967 - 1968

Guy's Hospital Medical School, Lecturer and Senior Lecturer in Pathology, 1968 - 1972

Institute of Psychiatry and Guy's-Maudsley, London Consultant Neuropathologist, 1971 - 1972

Managerial roles 1975 - 2003

Senior Managers' course at Cranfield Business School, 1992

Southampton University Hospitals Trust

Chairman of Division of Pathology, 1975-1978

Clinical Services Director (Pathology), 1989 - 1993

Chairman of Clinical Audit Committee, 1991 - 1993

Member of the Clinical Management Board, 1989 - 1993

Research and Development Committee, 1992 - 1995

Wessex Region / Deanery

Regional Adviser for Postgraduate Education / Chair of Pathology Training Committee (Wessex Deanery), 1994 - 2003

Member of Wessex Regional Research Grants Committee, 1993

Regular lecturer to British Young Scientists Groups in the Wessex Region, 1990 - 1995

Southampton University

Deputy Dean of Medicine, 1979 - 1984

Chairman of Southampton University Library Committee, 1984 - 1988

Coordinator 4th Year Study in Depth, 1989 - 2001 – Student research Projects

Chairman of the Ethics committees for Medical, Nursing, and M.Sc. Rehabilitation students, 1989 - 2001

Coordinator of Nervous System Course 2nd year Medicine, 1974 - 1990

National

President of the British Neuropathological Society, 2001 - 2002

Instigator of National External Quality Assurance (EQA) Scheme for Neuropathology: National Organiser, 1990 - 1996

Chairman of Neuropathology Subcommittee Royal College of Pathologists (RCPATH): 1985 - 1988

Examiner in Neuropathology RCPATH, 1976 - 2003 : Chairman of Examiners, 1990 - 1995

National Speciality Adviser for Neuropathology RCPATH, 2000 - 2004

Chairman of MRC Steering committee for Huntington's disease transplants, 2002 - 2007

Chairman of MRC Steering committee for the IOP brain bank London, 2002 - 2007

Member MRC CFAS committee 2002 – Chairman, 2015 - 2020

Chairman BDR Joint Management and Steering Group, 2009 - 2013

Examiner for BSc – Royal London Hospital, 2002 - 2005

Chairman Grants Advisory Board Alzheimer's Society UK, 2013 - 2018

International

Editor in Chief, 1989 - 1999, of Neuropathology & Applied Neurobiology - an International Journal (Now Consulting Editor)

Member of Editorial Boards (past and present of some 12 International Journals)

Chairman: Scientific Committee organising programme for the XIVth International Congress of Neuropathology Birmingham September 2000 with more than 700 delegates

International Society of Neuropathology; Executive and Council, 1996 - 2003, Vice President, 1998 - 2003

Assessor for Research Grants for MRC, German Ministry of Health, EEC, and adviser to Singapore Government for Neuropathology

Invited lectures 2000 - 2015

Germany Switzerland, Japan, Finland, India, USA, France Mexico, China, Netherlands, Italy, Malaysia, Mexico and Brazil. Visiting Professor: Zürich, Beijing, Harare, Singapore

Recent prizes

Alfons Maria Jacob prize awarded by the Deutsche Gesellschaft für Neuropathologie und Neuroanatomie, 2006
International Prize for Translational Neuroscience awarded by the Council of the Gertrud Reemstma Foundation, administered by the Max Planck Society, September 2020

Past research fields of activity

Peripheral neuropathies, Atherosclerosis, Hydrocephalus, Brain tumours
Meninges and meningitis. Cerebral tumours and muscle disease Clinical Pathology Studies

Recent research focus

Lymphatic drainage of the brain along basement membranes in the walls of cerebral capillaries and arteries- (Intramural Peri-Arterial Drainage (IPAD) and its impairment with age as a major factor in the aetiology of Cerebral Amyloid Angiopathy (CAA) and Alzheimer's disease.

Research methods

Clinicopathological correlation, Histology, histochemistry, Cell culture immunocytochemistry Scanning and transmission Electron Microscopy; Confocal Microscopy

Clinical service

I was responsible with my colleagues for the Neuropathological Service for a population of 2.8 million people in Wessex. This entailed a biopsy service for neurosurgical lesions, muscle biopsies, nerve biopsies and eye lesions with regular Multidisciplinary Team Meetings. We also managed a referral service for biopsies and post-mortem brains for the whole range of neuropathological lesions. Postgraduate Clinical Pathology was part of this activity.

Membership of scientific societies

British Neuropathological Society; Pathological Society UK; French, German, and Swiss Neuropathological Societies; American Association of Neuropathology; Royal College of Pathologist

Publications

My colleagues and I published over 200 peer reviewed papers in the 55 years between 1965 and 2020 (see PubMed). I have written, contributed to, or edited 8 major textbooks on Neuropathology and written chapters for several other books. My research papers include observational studies on human neuroanatomy and neuropathology; many of these observations were used to direct hypothesis-based experimental studies. My early work covered several fields including peripheral neuropathies, muscle disease and growth-hormone-related Creutzfeldt Jacob disease. However, the major theme that my colleagues and I developed from the 1960s was the relationships between fluid and the brain; this research started with hydrocephalus but later concentrated mainly upon the pathways by which CSF from the subarachnoid spaces and interstitial fluid (ISF) and solutes from the brain parenchyma drain to cervical lymph nodes. There are no conventional lymphatic vessels in the brain;

ISF and solutes drain along basement membranes in the walls of cerebral capillaries and arteries (Intramural Peri-Arterial Drainage (IPAD) pathways. The restricted size of IPAD pathways appears to play a role in Immune Privilege of the brain as IPAD pathways do not allow traffic of antigen presenting cells directly from the brain to cervical lymph nodes. Although we have contributed to an understanding of mechanism involved in Neuroimmunology, the major focus of our research has been upon the role of Age-related failure of IPAD in the aetiology of Alzheimer's disease and cerebral amyloid angiopathy (CAA). Based on observations in human brains and testing hypotheses in experimental studies Roxana Carare, Cheryl Hawkes, Entan Zhang, Shinya Kida and many other colleagues, we developed the Hypothesis that Age-related impairment of IPAD is associated with loss of homeostasis in the brain with failure of elimination of amyloid beta ($A\beta$) and fluid along IPAD pathways. Such failure appears to result in the accumulation of $A\beta$ as plaques in the brain in Alzheimer's disease and deposition of $A\beta$ in IPAD pathways in CAA and the accumulation of fluid in the cerebral white matter. Defining the motive forces for IPAD and why they fail with advancing age is fostering the development of therapeutic strategies to facilitate the elimination of $A\beta$ in older people for the prevention of Alzheimer's disease and CAA.

Our research has sometimes been controversial and occasionally iconoclastic, but our major Hypothesis continues to be substantiated.

Other activities

Member of Winchester Music Club (Established 1925) with regular concerts in Winchester Cathedral. I have been a Guide in Winchester Cathedral since 2005 and from 2011 - 2014, I was Editor of the Winchester Cathedral Record that published research articles about the Cathedral.