

Diagnoses ad curationes

Neuroimmunological disorders and therapeutics in 2025

10th National Neuroinflammatory Forum Friday 28th March 2025

FACULTY PROFILES



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Dr. Patrick Waters

Co-Director Autoimmune Neurology Diagnostic Laboratory

Nuffield Dept. of Clinical Neurosciences, University of Oxford, England

Patrick Waters completed his undergraduate studies in biochemistry at University College Cork (1994) and received a PhD on the structural prediction of the Fv region of a human IgG immunoglobulin from the University of East London (1999) under the guidance of Prof. Shawn Doonan.

I pursued postdoctoral studies with Prof. Nick Willcox developing MHC Class II tetramers to identify specific CD4+ T cells in autoimmune myasthenia gravis and created fragments of surfactant proteins A, D and C1q as therapeutics in allergic asthma and invasive pulmonary aspergillosis with Dr. Uday Kishore. Since 2007 I have worked in the identification of antibody targets in central nervous system diseases, modelling their pathogenic mechanisms and developing diagnostic assays.



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Professor Eoin Flanagan

Professor of Neurology & Chair of Division of MS & Autoimmune Neurology

Mayo Clinic, Rochester, USA

Dr Eoin Flanagan is a Professor of Neurology, Chair of the Division of MS and Autoimmune Neurology and Program Director of the Autoimmune Neurology Fellowship at Mayo Clinic (Rochester, MN). He completed medical school at University College Dublin in Ireland and did neurology residency, fellowships in neuroimmunology and a Masters in Clinical and Translational Science at Mayo Clinic. He is Principal Investigator on an NIH RO1 grant studying MOGAD, was a co-author on its 2023 diagnostic criteria and is site principal investigator for two MOGAD clinical trials and is a member of the steering committee of one of the trials. He co-leads the imaging focus area of the upcoming 2025 NMOSD diagnostic criteria and was a member of the 2023 MS differential diagnosis consortium. He directs courses on myelitis, MOGAD and NMOSD at the AAN and CMSC annual meetings and is course director for the Mayo Clinic MS and Autoimmune Neurology biennial CME course. He is a member of the editorial boards of the Journal of Neurologic Sciences, N2 Journal and Neuroimmunology Reports. He is Guest Editor for the first ever Continuum on Autoimmune Neurology and is an author of the UpToDate articles on MOGAD. He has received multiple awards for teaching in neurology and was the recipient of the Grass Foundation Award in Neuroscience from the American Neurologic Association. He has expertise in autoimmune encephalitis, MS, NMOSD and paraneoplastic neurologic disorders.



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Professor Sarah Flanagan Wesley

Assistant Professor of Neurology

Columbia University Vagelos College of Physicians & Surgeons, New York, USA

Sarah Flanagan Wesley, MD MPH graduated medicine at the Royal College of Surgeons in Ireland, followed by residency in neurology at the Icahn School of Medicine at Mount Sinai in New York and then fellowship in neuroimmunology at Yale School of Medicine.

Upon completing her training, she was on faculty at Yale as an Assistant Professor of Neurology, working in the neuroimmunology subdivision. She was a founding member of Yale's first immunotoxicity tumor board for management of immune-related adverse events. In 2020 she moved to Columbia University College of Physicians and Surgeons in New York where she is currently an Assistant Professor of Neurology. In addition to a robust clinical practice, she serves as lead for the neuro-immunotoxicity program, which includes neurological management of and research on immunotoxicity from cancer immune checkpoint inhibitors and CAR T-cell treatment.



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Professor Sean Pittock

Professor of Neurology

Mayo Clinic, Rochester, USA

Sean J. Pittock, M.D., is the Glenn W. and Katherine K. Hasse Chair of Neurology and a consultant in the Division of Multiple Sclerosis and Autoimmune Neurology, Department of Neurology at Mayo Clinic in Rochester, Minnesota. Dr. Pittock has a joint appointment in the Division of Clinical Biochemistry and Immunology, Department of Laboratory Medicine and Pathology. He serves as a director of the Neuroimmunology Laboratory (NIL), and he is the Marilyn A. Park and Moon S. Park, M.D., Director of the Center for Multiple Sclerosis and Autoimmune Neurology. He joined the staff of Mayo Clinic in 2005 and holds the academic rank of professor of neurology, Mayo Clinic College of Medicine and Science. Dr. Pittock is recognized with the distinction of the Applebaum Family Professorship in Neurosciences.

Dr. Pittock received his M.B., B.A.O., B.Ch., and M.Med.Sc. from University College Dublin and his M.D. from the Royal College of Surgeons in Ireland. After completing training in both internal medicine and neurology in Ireland, he moved to Rochester, Minnesota, where he completed neurology residency and neuroimmunology fellowship at Mayo Clinic.

Dr. Pittock's clinical interests include autoimmune neurological disorders, paraneoplastic diseases, neuromyelitis optica and multiple sclerosis. His research focuses on the diagnosis and treatment of multiple sclerosis and autoimmune disorders that target the central and peripheral nervous systems. He has worked with the NIL team on a variety of novel antibody discoveries including novel biomarkers of CNS demyelinating disorders and autoimmune neurological diseases, and he helped develop the largest biorepository of CNS inflammatory disorders in the world. He is focused on novel approaches to biomarker discovery and development of cutting-edge assays that assist clinicians in diagnosing, prognosticating and treating CNS diseases. He led the first phase 3 trial in neuromyelitis optica spectrum disorder (NMOSD) — resulting in the first FDA- approved drug based on Mayo Clinic's mechanistic discoveries.



Dr. Pittock's research is funded by the National Institute of Neurological Disorders and Stroke, foundations and industry partners. He has been invited to give over 200 presentations on his research and has authored more than 600 journal articles, abstracts and other publications. He edited the first textbook of Autoimmune Neurology.

Dr. Pittock founded the Autoimmune Neurology Clinic in 2006, the first of its type in the U.S. and now a thriving practice withing the Division of MS and Autoimmune Neurology. This clinic interacts closely with the NIL and has allowed the development of a unique translational practice extending the laboratory's serological findings directly to the bedside.

In recognition of his work, Dr. Pittock has received numerous awards and honors, including the Woltman Award for Clinical Excellence in Neurology, conferred by Mayo Clinic; and the Harold Miller Prize, conferred by the Irish Neurological Association. He also was selected to present the Parisi Lecture at the American Association of Neuropathologists in 2017, the John N. Whitaker Memorial Lecture in MS at The University of Alabama in 2022, and the Kirshner Lecture at Vanderbilt University School of Medicine in 2023. In 2024 he was made a fellow of both the American Academy of Neurology and the Royal College of Physicians of Edinburgh. He and the other members of the NMOSD team were awarded the Mayo Clinic Team Science award in 2024 for their "biomarker to near cure research" in the field of MS spanning over 20 years.

In addition to his clinical and research activities, Dr. Pittock holds master's faculty privileges in Clinical and Translational Science at Mayo Clinic Graduate School of Biomedical Sciences. He has taught numerous courses, including neuroimmunology, neurology and multiple sclerosis, while mentoring many medical students, residents and fellows in these specialties. Many of his mentees are now national and international leaders in the field of autoimmune neurology.

Dr. Pittock co-founded and subsequently chaired the Autoimmune Neurology Section of the American Academy of Neurology. He has previously chaired the Autoimmune Neurology Special Interest Group of the American Neurological Association.



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Professor Sarosh R. Irani, B.M.B., Ch., D.Phil.,

Professor of Neurology & Neuroscience

Mayo Clinic, Florida, USA

Sarosh R. Irani, B.M.B., Ch., D.Phil., is a Mayo Clinic neurologist and scientist who leads a research team studying autoimmune neurological diseases. By studying patient samples, Dr. Irani and his team have made several findings that have been published in major journals

His clinical team has:

- Recognized clinical features, particularly faciobrachial dystonic seizures, in people with LGI1 and CASPR2 autoantibodies.
- Found distinctive movement disorders and psychopathological features related to NMDAR-antibody encephalitis.
- Highlighted evidence supporting the importance of early immunotherapy in patients with autoimmune neurological diseases.

In the laboratory, his team has:

- Described LGI1 and CASPR2 antibodies and discovered their associated human leukocyte
 - antigens.
- Found autoreactive B cells from the blood, tumors and lymph nodes of people with autoimmune encephalitis and neuromyelitis optica.
- Cloned autoantigen-reactive monoclonal antibodies to re-create these diseases for research.



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Dr. Irani has supervised more than 50 international clinicians and scientists. He also has mentored several students to complete their doctoral degrees and many fellows to obtain independent funding.

Focus Areas

Dr. Irani's clinical research interests include:

- Better understanding how autoimmune encephalitis affects people to define markers and measure effectiveness in clinical trials.
- Characterizing the effects of immunotherapies to achieve the best outcomes.
- Finding and understanding the phenotypes of people with encephalitis to better recognize these conditions.

Dr. Irani's laboratory interests include:

- Defining B cell dynamics. Dr. Irani's team researches the cross-compartmental dynamics of B cells. The team studies B cell receptor sequence profiles in spinal fluid and blood, and the neck lymph nodes.
- Monoclonal antibodies. Dr. Irani's team has gathered data on over 1,000 monoclonal antibodies directed against the antigenic targets of patients. These targets include LGI1, CASPR2, aquaporin-4 and NMDA receptors. Dr. Irani is working to better understand how monoclonal antibodies reproduce aspects of autoimmune diseases.
- Other neurological conditions. Dr. Irani's team translates findings to understand the immunology of epilepsy, rapidly progressive dementia and multiple sclerosis.



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Prof. Xavier Montalban

Director of the MS Centre of Catalonia - Cemcat

Vall d'Hebron University Hospital

Dr. Xavier Montalban is director of the Multiple Sclerosis Center of Catalonia (Cemcat) at Vall d'Hebron University Hospital, professor of neurology at Universitat Autònoma de Barcelona and Universitat de Vic – Universitat Central de Catalunya, in Barcelona, Spain, head of the Neuroimmunology Research Group at Vall d'Hebron Research Institute, and senior consultant of the Department of Neurology at Vall d'Hebron University Hospital. Previously, he served as chair of the Department of Neurology at Vall d'Hebron University Hospital from 2012 to December 2024. He also held the position of director of the Division of Neurology and professor of neurology at the University of Toronto from 2017 to 2020.

His research interests include clinical trials, as well as clinical, MRI, and biological factors of disease prognosis and treatment response, alongside immunological mechanisms of the disease.

He has been sought for many leadership roles, such as president (2014–2016) and current honorary member of the Council of the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS). He was also co-chair of the Steering Committee of Magnetic Imaging in Multiple Sclerosis (MAGNIMS) and member of the Steering Committee of the International Progressive MS Alliance. Since January 2025, he has been serving as the current co-president of the Board of the European Charcot Foundation (ECF), further solidifying his influence in the MS field.

In addition to his current roles, Dr. Montalban has been a member of the Scientific Committee and a board member of the European Charcot Foundation. He also chaired the International Advisory Committee on Clinical Trials in Multiple Sclerosis sponsored by ECTRIMS and the National Multiple Sclerosis Society (NMSS) until December 2024, a role that underscored his prominence in the MS research community.





Institute



Dr. Montalban has authored over 800 original and revision publications in international peer-reviewed journals, accumulating over 65,000 citations. His Scopus H-Index is 110 (January 2025), and in the last seven years, he has been ranked among Clarivate's most cited researchers. He has been the principal investigator (PI) or collaborator in more than 35 competitive grants and has participated as PI in over 150 clinical trials.

Among the awards received, it is worth highlighting the 2022 John Dystel Prize, awarded jointly by the National Multiple Sclerosis Society (NMSS) and the American Academy of Neurology (AAN), and the 2023 Charcot Award granted by the Multiple Sclerosis International Federation (MSIF), which recognizes a lifetime of achievement in outstanding research into understanding and treating MS. Additionally, he received the 2024 Fundación Lilly Biomedical Research Award for Clinical Research and the 2023 Award for Research Trajectory in Catalan Institute of Health (ICS) Hospitals.