34TH CONGRESS OF THE EUROPEAN COMMITTEE FOR TREATMENT AND RESEARCH IN MULTIPLE SCLEROSIS

10–12 OCTOBER 2018, BERLIN, GERMANY

Scientific Programme

Wednesday, 10 October 2018

Hot Topic, Hall B

08:00 - 08:45   **Hot Topic 1: Hot topics in MS neuropathology**

Chairs
M. Inglese (New York, US)
R. Reynolds (London, UK)

08:00 - 08:15	1	**Myelocortical multiple sclerosis: cortical neuronal loss in the absence of cerebral white matter demyelination** B. Trapp (Cleveland, US)
08:15 - 08:30	2	**Meningeal inflammation as a driver of cortical pathology** R. Magliozzi (Verona, IT)
08:30 - 08:45	3	**Pathology of radiologically isolated syndrome** C. Lucchinetti (Rochester, US)

Educational Session, Hall D

08:00 - 09:30   **Educational Session 1: Pregnancy management in MS**

Level: Basic

Chairs
K. Hellwig (Bochum, DE)
A. Langer-Gould (Pasadena, US)

08:00 - 08:30	4	**Symptomatic treatment of MS and pregnancy / lactation management** M. Magyari (Copenhagen, DK)
08:30 - 09:00	5	**The natural history of MS during pregnancy and the postpartum period in contemporary MS cohort** A. Langer-Gould (Pasadena, US)
09:00 - 09:30	6	**MS medication in people with MS planning a pregnancy: an update** K. Hellwig (Bochum, DE)

Educational Session, Hall E

08:00 - 09:30   **Educational Session 2: Practical treatment recommendations based on new guidelines in MS**

Level: Basic

Chairs
X. Montalban (Toronto, CA)
D. Pelletier (Los Angeles, US)

Scientific Programme

08:00 - 08:30	7	**ECTRIMS/EAN MS treatment guidelines** X. Montalban (Toronto, CA)	
08:30 - 09:00	8	**AAN treatment guidelines** D. Pelletier (Los Angeles, US)	
09:00 - 09:30	9	**What else is needed in real life and is not covered by the guidelines?** T. Kalincik (Melbourne, AU)	

Educational Session, Hall F

08:00 - 09:30   **Educational Session 3: Neurofilament light chains in MS: where do we stand, the long road to clinical application**

Level: Intermediate

Chairs
C. Teunissen (Amsterdam, NL)
F. Piehl (Stockholm, SE)

08:00 - 08:30	10	**The long road to clinical application: where do we stand with neurofilament light chain in MS?** D. Leppert (Basel, CH)
08:30 - 09:00	11	**The long road to clinical implementation** C. Teunissen (Amsterdam, NL)
09:00 - 09:30	12	**Clinical application today and tomorrow** F. Piehl (Stockholm, SE)

Educational Session, Hall G

08:00 - 09:30   **Educational Session 5: Impact and management of comorbidities in MS**

Level: Intermediate

Chairs
R.A. Marrie (Winnipeg, CA)
H. Tremlett (Vancouver, CA)

08:00 - 08:30	16	**The impact of comorbidity on multiple sclerosis** R.A. Marrie (Winnipeg, CA)
08:30 - 09:00	17	**Bidirectional relationships between comorbidity and disease-modifying therapy** H. Tremlett (Vancouver, CA)
09:00 - 09:30	18	**Management of psychiatric comorbidity in multiple sclerosis** A. Feinstein (Toronto, CA)

Scientific Programme

		Educational Session, Hall H
08:00 - 09:30		**Educational Session 4: Immunology of MS**
		Level: Advanced
		Chairs E. Meinl (Martinsried, DE) V.W.W. Yong (Calgary, CA)
08:00 - 08:30	13	**B cells and T cells in MS** E. Meinl (Martinsried, DE)
08:30 - 09:00	14	**Myeloid cells in MS** V.W.W. Yong (Calgary, CA)
09:00 - 09:30	15	**Systems Immunology to model, predict and monitor multiple sclerosis** C. Farina (Milan, IT)

		Hot Topic, Hall B
08:55 - 09:40		**Hot Topic 2: Digital MS: improving data acquisition and analysis**
		Chairs J. Haas (Berlin, DE) M. Magyari (Copenhagen, DK)
08:55 - 09:10	19	**Towards standardisation of clinical documentation in MS** M. D'Souza (Basel, CH)
09:10 - 09:25	20	**Automated MR image analysis** D.L. Arnold (Montreal, CA)
09:25 - 09:40	21	**Using mobile devices for patient reported outcomes** T. Ziemssen (Dresden, DE)

		Young Scientific Investigators' Session, Hall C
09:00 - 10:15		**Young Scientific Investigators' Session 1: Imaging**
		Chairs M.S. Freedman (Ottawa, CA) H.F. Harbo (Oslo, NO)
09:00 - 09:15	22	**Demyelination, inflammation and axonal loss explain different patterns of fractional anisotropy abnormalities in MS cortical normal appering gray matter and lesions** P. Preziosa (Amsterdam, NL)
09:15 - 09:30	23	**Multicentre MAGNIMS study group trial investigating the correlation between cortical and periventricular pathology in MS** L. Pirpamer (Graz, AT)

09:30 - 09:45	24	**MRI brain T1 gray matter/white matter contrast in multiple sclerosis versus migraine using magnetization prepared rapid gradient echo (MPRAGE) sequences** T. Mitrovic (Basel, CH)
09:45 - 10:00	25	**T1-weighted signal intensity change in the dentate nucleus of MS patients after repeated application of linear and macrocyclic gadolinium-based contrast agents** S. Grahl (Munich, DE)
10:00 - 10:15	26	**Brain age estimation in a longitudinal cohort of patients with multiple sclerosis** E.A. Høgestøl (Oslo, NO)

Hot Topic, Hall B

09:45 - 10:30   Hot Topic 3: Biosimilars and follow-ups

Chairs
J. Hillert (Stockholm, SE)
A. Wilkins (Bristol, UK)

09:45 - 10:00	27	**Regulator's perspective** R. Anour (Vienna, AT)
10:00 - 10:15	28	**Generic, biosimilar and complex non-biologic follow-on drugs: the clinician's perspective** J. Cohen (Cleveland, US)
10:15 - 10:30	29	**The European biosimilar experience: lessons learned from a maturing market** U. Banning (Frankfurt, DE)

Hot Topic, Hall D

09:45 - 10:30   Hot Topic 4: New approaches for microscopic and macroscopic imaging

Chairs
J. Antel (Montreal, CA)
B. Stankoff (Paris, FR)

09:45 - 10:00	30	**In vivo brain imaging in experimental models** T. Misgeld (Munich, DE)
10:00 - 10:15	31	**MRI based molecular imaging** C. Stagg (Oxford, UK)
10:15 - 10:30	32	**PET based molecular imaging** B. Bodini (Paris, FR)

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		Hot Topic, Hall E
09:45 - 10:30		**Hot Topic 5: Mechanisms of CNS autoimmunity**
		Chairs
		R. Liblau (Toulouse, FR)
		M. Friese (Hamburg, FR)
09:45 - 10:00	33	**Innate immunity**
		M. Prinz (Freiburg, DE)
10:00 - 10:15	34	**B and T cells in multiple sclerosis**
		T. Korn (Munich, DE)
10:15 - 10:30	35	**Blood brain barrier**
		A. Prat (Montreal, CA)

		Educational Session, Hall F
09:45 - 10:30		**Case-based Educational Session 6: How to manage non-response to highly active (second line) drugs?**
		Chairs
		A.J. Coles (Cambridge, UK)
		J. Sastre-Garriga (Barcelona, ES)
09:45 - 10:07	36	**Case 1**
		A.J. Coles (Cambridge, UK)
10:07 - 10:29	37	**Case 2**
		J. Sastre-Garriga (Barcelona, ES)

		Educational Session, Hall G
09:45 - 10:30		**Case-based Educational Session 7: Progressive MS: who should be treated and how to monitor treatment response?**
		Chairs
		B.A. Cree (San Francisco, US)
		P.S. Sørensen (Copenhagen, DK)
09:45 - 10:07	38	**Case 1**
		B.A. Cree (San Francisco, US)
10:07 - 10:29	39	**Case 2**
		P.S. Sørensen (Copenhagen, DK)

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Educational Session, Hall H

09:45 - 10:30   **Case-based Educational Session 8: Should all MS patients be treated?**

Chairs
A. Chan (Bern, CH)
M. Stangel (Hannover, DE)

09:45 - 10:07	40	**Pro** M. Stangel (Hannover, DE)	
10:07 - 10:29	41	**Con** A. Chan (Bern, CH)	

Plenary Session, Hall A

11:00 - 12:15   **Plenary Session 1: Welcome and ECTRIMS Lecture**

Chairs
R. Hohlfeld (Munich, DE)
B. Hemmer (Munich, DE)
D. Miller (London, UK)

11:00 - 11:30	42	**Welcome to ECTRIMS 2018** D. Miller (London, UK) R. Hohlfeld (Munich, DE)
11:30 - 12:15	43	**Multiple sclerosis in the digital age: 'seeing through a glass darkly'** A. Compston (Cambridge, UK)

Satellite Symposium, Hall A

12:30 - 13:30   **Satellite Symposium 1: Data • Analysis • Technology • Application developments on the frontiers of MS**

Supported by Biogen
* the approved dosing schedule for natalizumab is 300 mg once every 4 weeks

Chairs
H.-P. Hartung (Düsseldorf, DE)

12:30 - 12:35	44	**Introduction** H.-P. Hartung (Düsseldorf, DE)
12:35 - 12:45	45	**The clinical data on extended interval dosing (EID) with natalizumab*** J. Foley (Salt Lake City, US)
12:45 - 13:00	46	**Biological hypotheses and experimental approaches suggested by available natalizumab data** S.E. Goelz (Portland, US)

13:00 - 13:10	47	**Serum neurofilament light (sNfL) from a research point of view** C. Teunissen (Amsterdam, NL)
13:10 - 13:25	48	**The clinical relevance of serum neurofilament light (sNfL)** R.J. Fox (Cleveland, US)
13:25 - 13:30	49	**Closing remarks** H.-P. Hartung (Düsseldorf, DE)

Satellite Symposium, Hall D

12:30 - 13:30 **Satellite Symposium 2: THC: CBD in multiple sclerosis spasticity symptoms: newest evidence confirming efficacy and safety**

Supported by Almirall S.A.

Chairs
T. Ziemssen (Dresden, DE)

12:30 - 12:40	50	**Welcome**
12:40 - 13:00	51	**THC: CBD post-approval pragmatic studies evidence** F. Patti (Catania, IT)
13:00 - 13:20	52	**THC: CBD post-approval clinical trials evidence** J. Marková (Prague, CZ)
13:20 - 13:30	53	**Closing**

Scientific Session, Hall B

13:30 - 15:00 **Scientific Session 1: How real world data can inform treatment decisions**

Chairs
S. Vukusic (Lyon, FR)
O. Stuve (Dallas, US)

13:30 - 13:50	54	**Efficacy in the real world** T. Kalincik (Melbourne, AU)
13:50 - 14:10	55	**Traps and pitfalls (methodological issues)** M.P. Sormani (Genoa, IT)
		Platform presentations of related original papers
14:10 - 14:22	56	**Multiple sclerosis in Germany 2018 - update on baseline data from the German MS Registry** P. Flachenecker (Bad Wildbad, DE)

Scientific Programme

14:22 - 14:34	**57**	**Determinants of disability accumulation in secondary-progressive multiple sclerosis**
		N. Lizak (Melbourne, AU)
14:34 - 14:46	**58**	**Familial multiple sclerosis: comparing demographic and clinical characteristics with sporadic form**
		S. Eichau (Sevilla, ES)
14:46 - 14:58	**59**	**Comparative effectiveness of switching to natalizumab or fingolimod after relapse on first-line relapsing-remitting multiple sclerosis therapy: propensity score matching analysis from the MSBase registry**
		T. Spelman (Solna, SE)

Scientific Session, Hall C

13:30 - 15:00	**Scientific Session 2: Paediatric MS**

Chairs
T. Chitnis (Boston, US)
S. Tenembaum (Buenos Aires, AR)

13:30 - 13:50	**60**	**Emerging biomarkers in paediatric MS**
		A. Bar-Or (Philadelphia, US)
13:50 - 14:10	**61**	**Treatment of paediatric MS in the era of increasingly powerful therapy**
		B. Banwell (Philadelphia, US)
		Platform presentations of related original papers
14:10 - 14:22	**62**	**Predictors of epilepsy and subsequent relapse in children with acute disseminated encephalomyelitis**
		T. Rossor (London, UK)
14:22 - 14:34	**63**	**White matter development after pediatric onset multiple sclerosis and monophasic demyelinating disease: volume, magnetisation transfer ratio, and signal mass MRI changes**
		R.A. Brown (Montreal, CA)
14:34 - 14:46	**64**	**Usefulness of IgG oligoclonal bands, antibodies to MOG (MOG-IgG), and the application of the 2017 McDonald criteria in the evaluation of children with a first demyelinating episode: a prospective multicenter study**
		T. Armangue (Barcelona, ES)
14:46 - 14:58	**65**	**MOG-IgG1 antibodies in children**
		G. Fadda (Philadelphia, US)

Educational Session, Hall F

13:30 - 15:00 **Educational Session 9: Clinical trials in MS: the need for novelty**

Level: Advanced

Chairs
M.P. Sormani (Genoa, IT)
J. Chataway (London, UK)

13:30 - 14:00	66	**Endpoints in MS clinical trials: going beyond EDSS** F. Pellegrini (Zug, CH)
14:00 - 14:30	67	**More flexibility for future MS trials: adaptive designs** J. Chataway (London, UK)
14:30 - 15:00	68	**Prognosis, response to therapy and treatment effect: easy to say, hard to measure** M.P. Sormani (Genoa, IT)

Educational Session, Hall G

13:30 - 15:00 **Educational Session 10 (IMSCOGS): Innovation in MRI in relation to cognitive and neuropsychiatric phenomena in MS**

Level: Advanced

Chairs
C. Enzinger (Graz, AT)

13:30 - 14:00	69	**Neuropathological injury in MS and relationship to structural MRI metrics** J. Geurts (Amsterdam, NL)
14:00 - 14:30	70	**Functional MRI studies in MS: update on brain plasticity and repair** C. Enzinger (Graz, AT)
14:30 - 15:00	71	**Functional relevance of MRI in early MS, correlation with cognitive performance and related outcomes** B. Brochet (Bordeaux, FR)

Educational Session, Hall H

13:30 - 15:00 **Educational Session 11: Molecular mechanisms of tissue injury in cortical MS lesions**

Level: Advanced

Chairs
J. Van Horssen (Amsterdam, NL)
D.J. Mahad (Edinburgh, UK)

| 13:30 - 14:00 | 72 | **Unraveling the cause of neuronal mitochondrial dysfunction in MS** |
| | | J. Van Horssen (Amsterdam, NL) |

| 14:00 - 14:30 | 73 | **Uncovering the pathogenesis of synapse loss in cortical MS and its models** |
| | | M. Kerschensteiner (Munich, DE) |

| 14:30 - 15:00 | 74 | **Understanding the early clinical and pathological consequences of mitochondrial dysfunction in progressive MS** |
| | | D.J. Mahad (Edinburgh, UK) |

Satellite Symposium, Hall A

13:45 - 14:45   **European Charcot Foundation Symposium: Towards imaging biomarkers for disease progression in MS**

Chairs
G. Comi (Milan, IT)
D. Miller (London, UK)

| 13:45 - 14:05 | 75 | **What should be imaged in progressive MS: the lesson from pathology** |
| | | H. Lassmann (Wien, AT) |

| 14:05 - 14:25 | 76 | **Is the progression a synchronous process in CNS compartments: MRI evidences** |
| | | M. Filippi (Milan, IT) |

| 14:25 - 14:45 | 77 | **Understanding progression: a PET imaging perspective** |
| | | B. Stankoff (Paris, FR) |

Young Scientific Investigators' Session, Hall D

13:45 - 15:00   **Young Scientific Investigators' Session 2: Immunology/Neurobiology**

Chairs
S. Dhib Jalbut (New Brunswick, US)
C. Teunissen (Amsterdam, NL)

| 13:45 - 14:00 | 78 | **Cytoskeletal breakdown during axon injury in a mouse model of neuromyelitis optica** |
| | | M. Herwerth (München, DE) |

| 14:00 - 14:15 | 79 | **Mucosal addressin cell adhesion molecule 1 mediated intestinal lymphocyte homing is critical for the development of experimental autoimmune encephalomyelitis** |
| | | K. Kuhbandner (Erlangen, DE) |

| 14:15 - 14:30 | 80 | **Vitamin D augments glucocorticosteroid efficacy via inhibition of mTORc1** |
| | | M. Bagnoud (Bern, CH) |

| 14:30 - 14:45 | 81 | **A novel β1-integrin/KV1.3 -mediated vesicular glutamate release pathway in Th17 cells** |
| | | K. Birkner (Mainz, DE) |

| 14:45 - 15:00 | 82 | **The oligodendroglial differentiation block in multiple sclerosis- mediated by intrinsic or extrinsic factors?** |
| | | L. Starost (Münster, DE) |

Nurses' Session, Hall E

13:45 - 15:00   Nurses' Session 1: Digital solutions

Chairs
L. Keenan (London, UK)
B. Porter (London, UK)

| 13:45 - 14:10 | 83 | **Digital solutions that support MS nursing care** |
| | | R. Morrison (Lewis, UK) |

| 14:10 - 14:35 | 84 | **Adolescent transition - lessons from two specialist centres** |
| | | K. Hanson (London, UK) |

| 14:35 - 15:00 | 85 | **Digital care programme NeuroResponse** |
| | | B. Porter (London, UK) |

Scientific Session, Hall A

15:30 - 17:00   Scientific Session 3: Risk management with MS therapies

Chairs
T. Derfuss (Basel, CH)
L. Brundin (Stockholm, SE)

| 15:30 - 15:50 | 86 | **Risk prediction and monitoring** |
| | | H. Wiendl (Münster, DE) |

| 15:50 - 16:10 | 87 | **Treatment of PML and other opportunistic infections** |
| | | J. Berger (Philadephia, US) |

Platform presentations of related original papers

| 16:10 - 16:22 | 88 | **Mortality rates in large US and Swedish rituximab-treated multiple sclerosis cohorts** |
| | | A. Langer-Gould (Pasadena, US) |

| 16:22 - 16:34 | 89 | **Cancer risk among Swedish multiple sclerosis patients: a nationwide cohort study comparing rituximab, fingolimod and natalizumab** |
| | | P. Alping (Stockholm, SE) |

| 16:34 - 16:46 | 90 | **Severe encephalitis and meningoencephalitis with systemic symptoms after daclizumab therapy for multiple sclerosis** |
| | | I. Metz (Göttingen, DE) |

16:46 - 16:58	**91**	**Monitoring CNS inflammatory activity in natalizumab related PML with TSPO-PET**
		C. Mahler (München, DE)

Scientific Session, Hall B

15:30 - 17:00   **Burning Debate: The new McDonald diagnostic criteria are controversial making them difficult to use in clinical practice**

Chairs

E. Waubant (San Francisco, US)
A. Thomson (London, UK)

15:30 - 15:35	**92a**	**Introduction**
		E. Waubant (San Francisco, US)
15:35 - 15:55	**92**	**Yes**
		F. Zipp (Mainz, DE)
15:55 - 16:15	**93**	**No**
		J. Oh (Toronto, CA)
16:15 - 17:00		**Questions from Twitter and the audience**

Scientific Session, Hall C

15:30 - 17:00   **Scientific Session 4 (IMSCOGS): Cognition in MS**

Chairs

R.H. Benedict (Buffalo, US)
D. Langdon (London, UK)

15:30 - 15:50	**94**	**Potential of exercise and cognitive training**
		I.-K. Penner (Düsseldorf, DE)
15:50 - 16:10	**95**	**Cognitive rehabilitation and neuroimaging**
		J. DeLuca (West Orange, US)
		Platform presentations of related original papers
16:10 - 16:22	**96**	**Damage to long-range connections is especially relevant for cognitive impairment in multiple sclerosis**
		K.A. Meijer (Amsterdam, NL)
16:22 - 16:34	**97**	**Early focal inflammatory disease is associated with long-term cognitive performance in relapse-onset multiple sclerosis**
		W. Brownlee (London, UK)
16:34 - 16:46	**98**	**Cognitive processing speed assessment in clinical practice: clinical, patient reported outcome, and quantitative MRI correlations**
		K. Nakamura (Cleveland, US)

16:46 - 16:58	99	**The effect of depression and bipolar disorder on multiple sclerosis disability worsening**

S. Binzer (Stockholm, SE)

Young Scientific Investigators' Session, Hall D

15:30 - 16:45   Young Scientific Investigators' Session 3: Clinical

Chairs
R. Diem (Heidelberg, DE)
K. Selmaj (Lodz, PL)

15:30 - 15:45	100	**Immunological phenotyping identifies MS patients with accentuated immune cell activation upon anti-CD20 treatment**

S. Häusser-Kinzel (Göttingen, DE)

15:45 - 16:00	101	**Cladribine personalised dosing in people with MS (n>200) - four years experience in clinical care**

S. De Trane (London, UK)

16:00 - 16:15	102	**Importance of CD4+CCR5+ effector memory cells for immune surveillance**

S. Herich (Muenster, DE)

16:15 - 16:30	103	**Aquaporin-4-IgG seropositivity is associated with worse visual outcomes after optic neuritis, independent of inner retinal layer thinning and microcystic macular pathology**

E. Sotirchos (Baltimore, US)

16:30 - 16:45	104	**Vitreous haze as a novel marker for neurodegeneration in MS possibly indicating impairment of the retinal glymphatic system**

D. Coric (Amsterdam, NL)

Nurses' Session, Hall E

15:30 - 16:45   Nurses' Session 2: MS Nursing around the world

Chairs
A.K. Krakau Hansen (Copenhagen, DK)
R. Forsberg (Copenhagen, DK)

15:30 - 15:55	105	**The female sexuality related to the male with MS who has erectile dysfunction**

H. Breinholt (Herning, DK)

15:55 - 16:20	106	**Patient experience using MS nurse led clinic**

R.F.S. Alarieh (Riyadh, SA)

16:20 - 16:45	107	**A nurse-led research to improve the tolerability of alemtuzumab by reducing peri-infusional reactions**

C.M. Oriol (Barcelona, ES)

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Educational Session, Hall F

15:30 - 17:00   **Educational Session 12: MS mimicks: other neuro-inflammatory disorders**

Level: Basic

Chairs
A. Siva (Istanbul, TR)
M. Keegan (Rochester, US)

15:30 - 16:00	108	**NMOSD and related autoantibody CNS disorders** A. Siva (Istanbul, TR)
16:00 - 16:30	109	**Atypical inflammatory syndromes of the CNS** M. Keegan (Rochester, US)
16:30 - 17:00	110	**Primary and secondary inflammatory vasculopathies and other inflammatory disorders of the CNS mimicking MS** C. Rice (Bristol, UK)

Educational Session, Hall G

15:30 - 17:00   **Educational Session 13: Genetics and biomarkers in MS**

Level: Advanced

Chairs
B. Hemmer (Munich, DE)
M. Comabella (Barcelona, ES)

15:30 - 16:00	111	**General considerations in biomarker research and application** B. Hemmer (Munich, DE)
16:00 - 16:30	112	**Serum and CSF biomarkers in MS** M. Comabella (Barcelona, ES)
16:30 - 17:00	113	**Basics of MS genetics** S.E. Baranzini (San Francisco, US)

Educational Session, Hall H

15:30 - 17:00   **Educational Session 14: Myelin repair in MS**

Level: Advanced

Chairs
C. Lubetzki (Paris, FR)

15:30 - 16:00	114	**What have we learnt on remyelination in MS? an historical perspective** C. Lubetzki (Paris, FR)
16:00 - 16:30	115	**Promoting exogenous remyelination: from basic sciences to translation** S. Goldman (Copenhagen, DK)

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16:30 - 17:00	116	**Promoting endogenous remyelination: from basic sciences to translation** A. Green (San Francisco, US)

Poster Sessions, Poster exhibition

17:00 - 19:00 — **Poster Session 1**

P330	**An international multicentre validation experiment for MOG antibodies** M. Reindl (Innsbruck, AT)
P331	**Migraine and clinically isolated syndrome: the role of periventricular lesions** C. Lapucci (Genoa, IT)
P332	**Multiple sclerosis and Sarcoidosis: a case for co-existence** C. Tyshkov (New York City, US)
P333	**Multiple sclerosis new criteria are also more relevant in North Africans** A. Gargouri (La Mannouba, TN)
P334	**Subclinical disease progression in NMO spectrum disorders suggested by full-field visual evoked potentials** M. Ringelstein (Düsseldorf, DE)
P335	**Patient satisfaction with the first talk about diagnosis and its impact on treatment decisions: a Swiss multiple sclerosis Registry study** L. Barin (Zurich, CH)
P336	**Myelin oligodendrocyte glycoprotein (MOG) antibody-associated demyelination: comparison between onset phenotypes** Y. Zhou (Guangzhou, CN)
P337	**Leucopathy-like acute demyelinating syndromes with anti-MOG-antibodies in children** E. Yazbeck (Le Kremlin Bicêtre, FR)
P338	**Neuromyelitis optica spectrum disorders: the evaluation of 66 patients followed by Istanbul Bilim University, department of neurology** B. Altunrende (Istanbul, TR)
P339	**A comparative analysis of diagnosis delays when applying the 2017 McDonald criteria to patients with recurring-remitting multiple sclerosis** S. Gassama (Rouen, FR)
P340	**Tbet positive B cells discriminate active neuromyelitis optica spectrum disorder** J.L. Bennett (Aurora, US)
P341	**Clinical and MRI features of onset myelitis in MOG-antibody disease** R. Mariano (Oxford, UK)
P342	**Subclinical visual loss may be associated with MOG- IgG associated longitudinally extensive transverse myelitis** L. Pandit (Mangalore, IN)

P343	**Early treatment in neuromyelitis optica spectrum disorders**
	M. Radaelli (Milano, IT)

P344	**Do concomitant autoimmune diseases affect neuromyelitis optica spectrum disorder (NMOSD) course?**
	N. Molazadeh (Tehran, IR)

P345	**Decision-making on radiologically isolated syndrome among Argentinean neurologists: a survey based on clinical experience**
	E. Carnero Contentti (Buenos Aires, AR)

P346	**The central vein sign in paediatric-onset multiple sclerosis**
	T. Sinnecker (Basel, CH)

P347	**Macular changes in pediatric multiple sclerosis**
	H. Hummel (Göttingen, DE)

P348	**Adults with MS show earlier cognitive changes than those with pediatric MS**
	A. Clayton (New York, US)

P349	**Perspectives on clinical trials in pediatric MS: results of an international survey**
	K. Deiva (Kremlin Bicêtre, FR)

P350	**Juvenile multiple sclerosis (SOKIDMUS study): evaluation of factors associated with socio-professional performances in adulthood**
	Y. Mikaeloff (Villejuif, FR)

P351	**Obesity is associated with increased risk of developing pediatric multiple sclerosis and frequent failure of first-line therapy**
	P. Huppke (Göttingen, DE)

P352	**Disability outcomes in patients with early cerebellar symptoms in multiple sclerosis**
	M.V.H. Le (Melbourne, AU)

P353	**Factors affecting mortality and causes of death among MS patients**
	A. Scalfari (London, UK)

P354	**Pregnancy outcomes in Teriflunomide exposed men and women. A nationwide Danish registry-based study**
	J.B. Andersen (København Ø, DK)

P355	**Robust evaluation of MS prevalence in Sweden based on the National Patient Registry data by modelling of a distribution of inpatient and outpatient care events, reported with MS diagnosis**
	L. Stawiarz (Stockholm, SE)

P356	**Inflammatory activity in the cerebrospinal fluid a decade after acute infectious mononucleosis**
	D. Jons (Göteborg, SE)

P357	**Increased risk of MS after organic solvent exposure**
	I. Boström (Karlstad, SE)

P358   **Differential multiple sclerosis treatment allocation between Australia & New Zealand impacts on clinical course but not quality of life**
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P559   **Mechanism of action of teriflunomide in multiple sclerosis**
S. Medina (Madrid, ES)

P560   **Comparative effectiveness and discontinuation of dimethyl fumarate and fingolimod in clinical practice at 36-month follow-up**
C. Hersh (Las Vegas, US)

P561   **Cardiac safety profile of ozanimod in pooled phase 3 studies in relapsing multiple sclerosis (SUNBEAM and RADIANCE)**
B.A. Cree (San Francisco, US)

P562   **Comparison of rituximab vs fingolimod, dimethyl fumarate and natalizumab in the treatment of multiple sclerosis: two year experience**
B. Vollmer (Aurora, US)

P563   **Influences upon healthcare professionals' prescribing of disease modifying treatments for multiple sclerosis in the United Kingdom: a National Survey**
D. Rog (Salford, UK)

Scientific Programme

P564 **Sustained efficacy in relapsing remitting multiple sclerosis following switch to placebo treatment from cladribine tablets in patients with high disease activity at baseline**

P. Vermersch (Lille, FR)

P565 **Double-blind controlled randomised trial of plasma exchanges compared to sham-plasma exchanges in moderate to severe relapses of multiple sclerosis**

B. Brochet (Bordeaux, FR)

P566 **Fingolimod therapy increases serum interleukin 7 levels without altering peripheral homeostatic proliferation in multiple sclerosis patients**

I. Jelcic (Zurich, CH)

P567 **Autologous stem cell transplantation in multiple sclerosis: the London experience**

E. Rhone (London, UK)

P568 **The POINT study: a randomized, double-blind, parallel-group, add-on, superiority phase 3 study to compare the efficacy and safety of ponesimod to placebo in subjects with active relapsing multiple sclerosis who are treated with dimethyl fumarate**

L. Kappos (Basel, CH)

P569 **Hypothesis: chronic progression of MS results from activity of LLPCs even after aggressive B-cell depletion therapy**

C. Mora (Washington, US)

P570 **Effects of real life use of oral disease modifying treatments for relapsing-remitting multiple sclerosis in Austria over one year**

M. Guger (Linz, AT)

P571 **Clinical trials of disease-modifying agents in pediatric MS: opportunities, challenges and recommendations from the International Pediatric MS Study Group (IPMSSG)**

E. Waubant (San Francisco, US)

P572 **Treatment with alemtuzumab after fingolimod in relapsing-remitting multiple sclerosis is effective and safe**

C. Alcalá (Valencia, ES)

P573 **Patient initiation of fingolimod treatment in clinics and in the Gilenya@Home Program: baseline heart rate data for the first-dose adverse cardiac effects subgroup**

J. Osborne (Grapevine, US)

P574 **Establish tolerence in MS with myelin-peptide coupled red blood cells - ETIMSredtrial**

A. Lutterotti (Zurich, CH)

P575 **Inhibition of Bruton's tyrosine kinase selectively prevents antigen-activation of B cells and ameliorates B cell-mediated experimental autoimmune encephalomyelitis**

S. Torke (Gottingen, DE)

P576   **Real-world experience of the effectiveness, safety and tolerability of dimethyl fumarate in Barts Health MS cohort**
K. Allen-Philbey (London, UK)

P577   **Evidence-based patient information handbooks on immunotherapies - a nationwide German project**
A.C. Rahn (Hamburg, DE)

P578   **An increase in chemokine, CXCL1 with ERβ ligand treatment potentially stimulates axon myelination in a mouse model of multiple sclerosis**
H. Karim (Riverside, US)

P579   **Clean-surfaced, faceted gold nanocrystals stimulate the differentiation of oligodendrocyte precursor cells by up-regulating genes involved in oligodendrocyte myelination**
D. Fantini (Salt Lake City, US)

P580   **Efficacy of dimethyl-fumarate in preventing grey matter pathology in multiple sclerosis**
C. Zuco (Verona, IT)

P581   **Circulating T cells of fingolimod treated patients with MS secrete an increased BDNF levels**
A. Karni (Tel Aviv, IL)

P582   **Sigma 1 receptor and melanocortin receptor agonists protect oligodendroglia from death induced by products of B cells from multiple sclerosis patients**
R. Lisak (Detroit, US)

P583   **Mir-219 enriched exosomes decrease experimental autoimmune encephalomyelitis symptoms after intranasal administration**
I. Osorio-Querejeta (San Sebastián, ES)

P584   **Early treatment with Natalizumab prevents cortical gray matter atrophy: a two-year prospective study in relapsing-remitting multiple sclerosis patients**
L. Orbach (Tel-Aviv, IL)

P585   **Real-world effectiveness of MD1003 (high dose pharmaceutical grade biotin) in patients with progressive MS**
A. Tourbah (Reims, FR)

P586   **Effect of teriflunomide on oxidative stress-mediated alterations of CNS mitochondria**
B. Malla (Berlin, DE)

P587   **Extended interval dosing of natalizumab: is efficacy preserved?**
M. Clerico (Orbassano, IT)

P588   **Long-term reduction in brain MRI disease activity and atrophy after 5 years of ocrelizumab treatment in patients with relapsing multiple sclerosis**
D.L. Arnold (Montreal, CA)

P589   **Twenty-five years of continuous treatment of multiple sclerosis with glatiramer acetate: long-term clinical results of the US open-label extension study**

C. Ford (Albuquerque, US)

P590   **Long-term reduction of relapse rate and confirmed disability progression after 5 years of ocrelizumab treatment in patients with relapsing multiple sclerosis**

S. Hauser (San Francisco, US)

P591   **Treatment effectiveness in relapsing remitting multiple sclerosis patients treated for 5 years with fingolimod in clinical practice: interim results from the observational study PANGAEA**

U. Schulze-Topphoff (Nuremberg, DE)

P592   **Effect of MD1003 (high dose pharmaceutical grade biotin) for the treatment of progressive MS: 48-month follow-up data**

A. Tourbah (Reims, FR)

P593   **Utilization, safety and tolerability of ocrelizumab: year 1 data from the Providence Ocrelizumab Registry**

K. Smoot (Portland, US)

P594   **Radiological findings suggest long-term treatment with delayed-release dimethyl fumarate is associated with tissue and axonal preservation**

D.L. Arnold (Montreal, CA)

P595   **Real-world efficacy of delayed-release dimethyl fumarate in early multiple sclerosis: interim results from ESTEEM**

R. Macdonell (Melbourne, AU)

P596   **German real-world data from over 10 years in the TYSABRI® Observational Program: long-term effectiveness of natalizumab treatment in German patients with relapsing-remitting MS**

F.A. Hoffmann (Halle, DE)

P597   **Natalizumab is associated with a reduction in relapse-related hospitalisations and steroid treatment in relapsing-remitting multiple sclerosis patients enrolled in the TYSABRI® Observational Program**

M. Trojano (Bari, IT)

P598   **Providence Dimethyl Fumarate Registry: year five results on discontinuation and treatment outcomes**

K. Smoot (Portland, US)

P599   **Initiation of the first disease-modifying treatment for multiple sclerosis patients in the Czech Republic - data from the national registry ReMuS**

D. Horàkovà (Prague, CZ)

P600   **Pregnancy outcomes in patients with multiple sclerosis and other autoimmune diseases treated with ocrelizumab in clinical trials and post-marketing studies**

S. Vukusic (Lyon, FR)

Scientific Programme

P601   **Effect of age on clinical outcomes in patients treated with fingolimod: pooled analysis of real-world phase iv studies**
T. Chitnis (Boston, US)

P602   **Safety of fingolimod in RRMS patients treated for up to 5 years in real world: interim results from the non-interventional PANGAEA study**
B. Ettle (Nuremberg, DE)

P603   **Pregnancy outcomes from an international registry of patients treated with delayed-release dimethyl fumarate**
N.J. Everage (Cambridge, US)

P604   **Incidence of natalizumab-associated progressive multifocal leucoencephalopathy and its relationship with the pattern of natalizumab exposure over time**
G. Giovannoni (London, UK)

P605   **Diffuse necrotising leuko-encephalopathy after treatment with alemtuzumab and imiquimod**
N.J.J. MacDougall (Glasgow, UK)

P606   **Influence of natalizumab extended interval dosing on the PML risk biomarker L-Selectin**
N. Schwab (Muenster, DE)

P607   **Pancytopenia, evening fever and hepatosplenomegaly in a Fingolimod treated-woman**
M. Gomez-Moreno (Madrid, ES)

P608   **The results of a 24-month controlled, prospective study of relapsing MS patients at risk for PML who switched from long term natalizumab to teriflunomide**
K. Edwards (Latham, US)

P609   **Reduction of the risk of PML in natalizumab treated MS patients in Sweden: an effect of JCV ab index surveillance**
S. Kågström (Stockholm, SE)

P610   **Determinants of MS re-activation after discontinuing therapies**
T. Kalincik (Melbourne, AU)

P611   **Minimal impact of anti-alemtuzumab antibodies on the pharmacodynamics and efficacy of alemtuzumab in RRMS patients from the CARE-MS studies**
A. Jacobs (Cambridge, US)

P612   **CD4+CD62L+cells could be a useful biomarker for monitoring intermittent drug holidays of fingolimod administration**
M. Tanaka (Kyoto, JP)

P613   **Evolution of anti-JCV index with natalizumab treatment for multiple sclerosis: a retrospective, longitudinal study**
P. Ananthavarathan (Birmingham, UK)

Scientific Programme

P614 **Two cases of atypical psychiatric presentations after ocrelizumab induction with near complete resolution**

J. Claunch (Worcester, US)

P615 **Shared decision making; is it truly 'shared' in multiple sclerosis? The neurologist, nurse, & patient perspective**

M. Osborne (Brisbane, AU)

P616 **A modified premedication protocol significantly reduces ocrelizumab-induced infusion reactions**

W. Conte (Chicago, US)

P617 **A real-world comparison of infection rate and lymphocyte counts among relapsing-remitting multiple sclerosis patients 50 years or older treated with subcutaneous interferon beta-1a or dimethyl fumarate**

S. Cardoso (Foxboro, US)

P618 **Safety liver profile of teriflunomide versus interferon β in multiple sclerosis: systematic review and indirect comparison meta-analysis**

P.A. Ortiz Salas (Bogota, CO)

P619 **Ocrelizumab treatment effect on upper limb function in PPMS patients with disability: subgroup results of the ORATORIO study to inform the ORATORIO-HAND study design**

G. Giovannoni (London, UK)

P620 **Analysis of a biomarker signature (TLR2, TLR4 and CCR1) by flow cytometry in patients with relapsing-remitting multiple sclerosis treated with fingolimod**

D. Haegert (Montreal, CA)

P621 **Measuring disease activity in multiple sclerosis: the essential role of spinal cord MRI monitoring**

S. Ruggieri (Rome, IT)

P622 **Fingolimod may exert a neuroprotective role at retinal level in multiple sclerosis when compared to first-line injectable treatments**

S. Guerrieri (Milan, IT)

P623 **Detecting response to fampridine on motor functioning with activities of daily living and classical neurological examinations in multiple sclerosis patients**

C.E. van Munster (Amsterdam, NL)

P624 **FLOODLIGHT: smartphone-based self-monitoring is accepted by patients and provides meaningful, continuous digital outcomes augmenting conventional in-clinic multiple sclerosis measures**

M. Lindemann (Basel, CH)

P625 **Searching for predictors of response to high-efficacy therapies in relapsing-remitting multiple sclerosis: results from a single centre cohort**

L. Mitjana (Barcelona, ES)

P626 **Brain network response upon natalizumab versus dimetylfumarate in multiple sclerosis**

M. Muthuraman (Mainz, DE)

Scientific Programme

P627   **Lymphocyte dynamics are not associated with disease activity in patients switching to alemtuzumab from fingolimod and injectable treatments**
T. Williams (London, UK)

P628   **Additional courses of alemtuzumab improved clinical and MRI outcomes in pooled CARE-MS I and II patients with disease activity after three courses: analysis of patients who received ≥4 courses**
S. Schippling (Zurich, CH)

P629   **FLX-787 significantly reduces muscle cramp/spasm frequency and improves spasticity in a phase 2 study (Flex-201) in patients with multiple sclerosis**
G. Short (Boston, US)

P630   **Efficacy of prolonged-release fampridine vs placebo on walking ability, dynamic and static balance and quality-of-life: an integrated analysis of MOBILE and ENHANCE**
R. Hupperts (Maastricht, NL)

P631   **The effects of default mode network functional connectivity modulation on cognition and quality of life of people with relapsing-remitting multiple sclerosis**
R. Manca (Sheffield, UK)

P632   **Effects and mechanisms of cued and non-cued motor imagery in people with multiple sclerosis: a randomised controlled trial**
B. Seebacher (Eastbourne, UK)

P633   **Characteristics of MS patients treated with fampridine in a real-world setting based on the NeuroTransData network in Germany**
S. Braune (Prien, DE)

P634   **Modulation of cortico-subcortical functional connectivity occurs after symptomatic treatment of fatigue in patients with multiple sclerosis**
M.A. Rocca (Milan, IT)

P635   **Year one interim analysis results of the Phase IIIb CHORDS study evaluating ocrelizumab effectiveness and safety in patients with relapsing-remitting multiple sclerosis who had suboptimal response with prior disease-modifying treatments**
T. Leist (Philadelphia, US)

P636   **Plasma exchange as rescue treatment in children with CNS inflammatory demyelinating syndromes**
S. Tenembaum (Buenos Aires, AR)

P637   **Healthcare resource use and disease progression among commercially insured patients with multiple sclerosis: a comparison of continuous users and non-users of disease modifying therapy over five years (2012-2016)**
M. Williams (Atlanta, US)

P638   **The effects of an innovative combined Robot Assisted Gait Training and Virtual Reality on cognitive impairments and motor deficits in patients with multiple sclerosis: a pilot randomized control trial**
D. Munari (Verona, IT)

Scientific Programme

P639 **Subgroup analysis to evaluate the efficacy of ocrelizumab versus interferon β-1a in African-descended patients with relapsing multiple sclerosis in the OPERA I and OPERA II studies**
B.A. Cree (San Francisco, US)

P640 **Real-world treatment utilization and effectiveness of onabotulinumtoxinA in multiple sclerosis patients treated for spasticity from the ASPIRE study**
D.S. Bandari (Newport Beach, US)

P641 **Dimethyl fumarate treatment in relapsing multiple sclerosis: a prospective observational postmarketing study of effectiveness**
Y. Aladro Benito (Getafe, ES)

P642 **Exit strategies for "needle fatigue" in multiple sclerosis: a propensity score-matched comparison study**
L. Prosperini (Rome, IT)

P643 **A modified Mediterranean dietary intervention for multiple sclerosis: results of a pilot study and lessons learned for future dietary research in MS**
I. Katz Sand (New York, US)

P644 **Multiple sclerosis, fatigue and disease modifying therapy impact: differences in sleep architecture in patients with multiple sclerosis - Copaxone versus interferons**
J. Srinivasan (Patchogue, US)

P645 **Usability of an educational intervention to overcome therapeutic inertia in multiple sclerosis care**
G. Saposnik (Toronto, CA)

P646 **A patient survey on the initiation and switch of disease-modifying drugs for multiple sclerosis in Sapporo, Japan: the current status and challenges regarding patient's preference and shared-decision making**
K. Fujihara (Sendai, JP)

P647 **Preferences of German physicians for features of injectable, oral, and infused disease-modifying treatments for relapsing-remitting multiple sclerosis**
C. Wakeford (Cambridge, US)

P648 **Family planning and pregnancy in multiple sclerosis**
I.A. Ionescu (Bucharest, RO)

P649 **Fecal microbial transplantation in multiple sclerosis: trial design**
A. Wing (London, CA)

Scientific Programme

Satellite Symposium, Hall A

18:15 - 19:15   **Satellite Symposium 3: Disease activity: can starting early with effective treatment offer better outcomes in MS?**

Supported by Roche

Chairs
H.-P. Hartung (Düsseldorf, DE)

18:15 - 18:20	**117**	**Welcome and introduction** H.-P. Hartung (Düsseldorf, DE)
18:20 - 18:35	**118**	**Treating disease activity earlier: evidence for long-term benefits** M. Tintoré (Barcelona, ES)
18:35 - 18:55	**119**	**Ocrelizumab: growing evidence from clinical trials on longer term outcomes** A. Chan (Bern, CH)
18:55 - 19:10	**120**	**Clinical perspectives: putting early, effective treatment into clinical practice** R. Bermel (Cleveland, US)
19:10 - 19:15	**121**	**Conclusions** H.-P. Hartung (Düsseldorf, DE) M. Tintoré (Barcelona, ES) A. Chan (Bern, CH) R. Bermel (Cleveland, US)

Satellite Symposium, Hall B

18:15 - 19:15   **Satellite Symposium 4: Committing to generations, impacting patients: advancing disease management across the continuum of MS**

Supported by Novartis Pharma AG

Chairs
R. Gold (Bochum, DE)

18:15 - 18:20	**122**	**Chair's opening and welcome** R. Gold (Bochum, DE)
18:20 - 18:35	**123**	**Acting early: new evidence in the treatment of paediatric-onset MS** B. Banwell (Philadelphia, US)
18:35 - 18:50	**124**	**Seizing the opportunity: establishing early and effective disease control in adult-onset RRMS** T. West (San Francisco, US)
18:50 - 19:05	**125**	**Debating concepts in advanced disease: where does SPMS fit in the MS disease continuum?** J. Overell (Glasgow, UK) T. Kalincik (Melbourne, AU)

Scientific Programme

19:05 - 19:15	**126**	**Panel discussion and closing remarks**
		R. Gold (Bochum, DE)

Scientific Programme

Thursday, 11 October 2018

Satellite Symposium, Hall B

07:30 - 08:30 **Satellite Symposium 5: Disease progression: changing how we think about MS**

Supported by Roche

Chairs
G. Giovannoni (London, UK)

07:30 - 07:35	127	**Introduction** G. Giovannoni (London, UK)
07:35 - 07:50	128	**Future perspectives on MS disease progression** G. Giovannoni (London, UK)
07:50 - 08:05	129	**The MS continuum: current insights from biology, pathology and imaging** A. Gass (Mannheim, DE)
08:05 - 08:20	130	**Clinical perspectives: changing how we measure and treat MS disease progression** J. Overell (Glasgow, UK)
08:20 - 08:30	131	**Conclusions** A. Gass (Mannheim, DE) J. Overell (Glasgow, UK) G. Giovannoni (London, UK)

Educational Session, Hall D

08:00 - 09:30 **Educational Session 15: Disease modifying treatments in MS**

Level: Basic

Chairs
H.-P. Hartung (Düsseldorf, DE)
T. Derfuss (Basel, CH)

08:00 - 08:30	132	**Disease modifying treatments for relapsing MS** H.-P. Hartung (Düsseldorf, DE)
08:30 - 09:00	133	**Treatment approaches to progressive MS** T. Derfuss (Basel, CH)
09:00 - 09:30	134	**Risks, risk management and the choice of treatments for MS** G. Giovannoni (London, UK)

Scientific Programme

Educational Session, Hall E

08:00 - 09:30 — **Educational Session 16 (RIMS): Symptomatic treatment of MS: how to manage pain/bladder/bowel/sexual dysfunction?**

Level: Basic

Chairs
P.L. Eelen (Melsbroek, BE)
R. Moss Morris (London, UK)

08:00 - 08:30	**135**	**Management of bladder and bowel problems in multiple sclerosis**
		P.L. Eelen (Melsbroek, BE)
08:30 - 09:00	**136**	**Treatment of sexual dysfunction**
		C.A. Young (Liverpool, UK)
09:00 - 09:30	**137**	**Pain management**
		R. Moss Morris (London, UK)

Free Communications, Hall A

08:30 - 09:30 — **Free Communications 1: New diagnostic criteria**

Chairs
R.A. Marrie (Winnipeg, CA)
R. Milo (Ashkelon, IL)

08:30 - 08:42	**138**	**The central vein sign on cerebral 3T MRI in multiple sclerosis - a multi-center investigation under the auspices of the MAGNIMS study group**
		T. Sinnecker (Basel, CH)
08:42 - 08:54	**139**	**Application of the 2017 revisions to the McDonald criteria in the clinical practice: comparison with the 2010 diagnostic criteria at the time of the CIS**
		G. Arrambide (Barcelona, ES)
08:54 - 09:06	**140**	**Application of the 2017 revised McDonald criteria for multiple sclerosis to patients with a typical clinically isolated syndrome**
		R.M. van der Vuurst de Vries (Rotterdam, NL)
09:06 - 09:18	**141**	**Performance of the revised McDonald 2017 criteria in patients with clinically isolated syndromes suggestive of multiple sclerosis**
		W. Brownlee (London, UK)
09:18 - 09:30	**142**	**Improved performance of the 2017 McDonald criteria for diagnosis of multiple sclerosis in children irrespective of age**
		Y. Hacohen (London, UK)

Scientific Programme

Free Communications, Hall B

08:30 - 09:30   **Free Communications 2: Clinical**

Chairs

A. Miller (Haifa, IL)
F. Then Bergh (Leipzig, DE)

08:30 - 08:42	143	**Week 48 results from a phase IIb trial of GNbAC1 in patients with relapsing remitting multiple sclerosis (CHANGE-MS; clinical trial assessing the HERV-W Env antagonist GNbAC1 for Efficacy in MS)**
		F. Barkhof (London, UK)
08:42 - 08:54	144	**Causes that contribute to deaths due to multiple sclerosis: analyses of population-based multiple-cause-death data**
		K. Harding (Cardiff, UK)
08:54 - 09:06	145	**Impact of early treatment initiation on personal income of multiple sclerosis patients**
		A. Kavaliunas (Stockholm, SE)
09:06 - 09:18	146	**Increased risk of comorbidities in patients before as well as after multiple sclerosis (MS) diagnosis: a study in the UK Clinical Practice Research Datalink (CPRD)**
		S. Jick (Boston, US)
09:18 - 09:30	147	**Effect of vascular comorbidities on disability progression in multiple sclerosis: a Portuguese multicentric study**
		A.S. Correia (Lisboa, PT)

Free Communications, Hall C

08:30 - 09:30   **Free Communications 3: Neuroimmunology**

Chairs

J.S. Wolinsky (Houston, US)
K. Gross-Paju (Tallinn, EE)

08:30 - 08:42	149	**Direct modulation of microglia activity in the CNS by regulatory T lymphocytes**
		S. Bittner (Mainz, DE)
08:42 - 08:54	150	**Nile red spectral microscopy reveals subtle biochemical defects in lipids in the MS brain**
		W. Teo (Calgary, CA)
08:54 - 09:06	151	**B - T cell interactions activate and maintain brain-homing T cells in multiple sclerosis**
		I. Jelcic (Zurich, CH)
09:06 - 09:18	152	**Characterisation of AQP4-specific T-cells in AQP4 and MOG antibody positive NMOSD patients**
		L. Hofer (Innsbruck, AT)

Scientific Programme

Scientific Session, Hall A

10:00 - 11:30 **Scientific Session 5: Predicting the course of newly diagnosed patients: insights from cohorts**

Chairs
B. Uitdehaag (Amsterdam, NL)
M. Trojano (Bari, IT)

10:00 - 10:20	153	**The German national MS cohort**
		R. Gold (Bochum, DE)

10:20 - 10:40	154	**The Barcelona cohort**
		M. Tintoré (Barcelona, ES)

Platform presentations of related original papers

10:40 - 10:52	155	**Early cortical pathology and early relapses predict the risk of developing secondary progressive MS**
		A. Scalfari (London, UK)

10:52 - 11:04	156	**Scoring the 10-year risk of ambulatory disability in DMD-treated multiple sclerosis patients: the RoAD score**
		C. Gasperini (Rome, IT)

11:04 - 11:16	157	**Early MRI predictors of long-term multiple sclerosis outcomes: a 30-year follow-up study of people presenting with clinically isolated syndromes**
		K. Chung (London, UK)

11:16 - 11:28	158	**Serum neurofilament light (NfL) for disease prognosis and treatment monitoring in multiple sclerosis patients: is it ready for implementation into clinical care?**
		P. Calabresi (Baltimore, US)

Scientific Session, Hall B

10:00 - 11:30 **Scientific Session 6: VISION research in MS: state of the art and future prospects**

Chairs
P. Calabresi (Baltimore, US)
F. Paul (Berlin, DE)

10:00 - 10:20	159	**Vision research in MS: what's been done so far**
		A. Petzold (London, UK)

10:20 - 10:40	160	**New technologies and challenges in vision research**
		S. Saidha (Baltimore, US)

Platform presentations of related original papers

10:40 - 10:52	161	**Retinal dynamics revealed by optical coherence tomography predict neuronal loss in experimental autoimmune encephalomyelitis**
		A. Cruz-Herranz (San Francisco, US)

| 10:52 - 11:04 | 162 | **Optimal inter-eye difference thresholds in retinal nerve fiber layer and ganglion cell layer thickness for predicting a unilateral optic nerve lesion in multiple sclerosis: an international collaborative study** |
| | | R.C. Nolan (New York, US) |

| 11:04 - 11:16 | 163 | **Relationship between retinal inner nuclear layer thickness and age in progressive multiple sclerosis** |
| | | M. Cellerino (Genova, IT) |

| 11:16 - 11:28 | 164 | **Association of contrast sensitivity vision test with clinical and MRI metrics in multiple sclerosis** |
| | | B. Moss (Cleveland, US) |

Scientific Session, Hall C

10:00 - 11:30   Scientific Session 7: Environmental risk factors of MS

Chairs
A. Ascherio (Boston, US)
M.P. Amato (Florence, IT)

| 10:00 - 10:20 | 165 | **Environmental and lifestyle factors** |
| | | I. Kockum (Stockholm, SE) |

| 10:20 - 10:40 | 166 | **Emerging risk factors: what is the evidence?** |
| | | R.A. Linker (Erlangen, DE) |

Platform presentations of related original papers

| 10:40 - 10:52 | 167 | **Molecular mimicry between the autoantigen Anoctamin 2 and Epstein Barr virus nuclear antigen 1 associates with increased risk for multiple sclerosis** |
| | | T. Olsson (Stockholm, SE) |

| 10:52 - 11:04 | 168 | **Multiple sclerosis among first- and second-generation immigrants in Denmark. A population-based cohort study.** |
| | | N.M. Nielsen (Copenhagen, DK) |

| 11:04 - 11:16 | 169 | **Higher body mass index, but not vitamin D status, is associated with greater subsequent loss of brain gray matter volume in multiple sclerosis** |
| | | E. Mowry (Baltimore, US) |

| 11:16 - 11:28 | 170 | **Predicting the course of CIS patients adding modifiable environmental factors such as smoking and vitamin D** |
| | | M. Tintoré (Barcelona, ES) |

Scientific Programme

Educational Session, Hall D

10:00 - 11:30   **Educational Session 17: MS pathology for clinical neurologists**

Level: Basic

Chairs
W. Brück (Göttingen, DE)
C. Stadelmann (Göttingen, DE)

10:00 - 10:30	**171**	**The white matter lesion in MS** W. Brück (Göttingen, DE)
10:30 - 11:00	**172**	**The grey matter lesion in multiple sclerosis** C. Stadelmann (Göttingen, DE)
11:00 - 11:30	**173**	**Inflammatory demyelination spectrum** R. Höftberger (Vienna, AT)

Educational Session, Hall E

10:00 - 11:30   **Educational Session 18: Experimental neuroimmunology**

Level: Advanced

Chairs
A. Flügel (Göttingen, DE)
T. Kuhlmann (Münster, DE)

10:00 - 10:30	**174**	**Immunopathogenesis in CNS autoimmunity: lessons from animal models** A. Flügel (Göttingen, DE)
10:30 - 11:00	**175**	**Experimental MS models and their relation to the human disease** T. Kuhlmann (Münster, DE)
11:00 - 11:30	**176**	**Blood-brain barrier autoimmune function and dysfunction in CNS autoimmunity** B. Engelhardt (Bern, CH)

Meet the Expert, Meeting Room M4

10:00 - 11:00   **Meet the Expert 1: Clinical treatment issues in NMO**

Chairs
J. Palace (Oxford, UK)
R. Marignier (Lyon, FR)

Scientific Programme

Hot Topic, Hall A

11:45 - 12:30　　　**Hot Topic 6: "Hitting hard and early" or stepwise escalation: What is the best strategy?**

Chairs
S. Hauser (San Francisco, US)
A. Siva (Istanbul, TR)

11:45 - 12:00	**177**	**Immunological rationale**
		P.A. Muraro (London, UK)

12:00 - 12:15	**178**	**Immune reconstitution therapy: pressing the reset button**
		G. Giovannoni (London, UK)

12:15 - 12:30	**179**	**Escalation therapy: staying on the safe side**
		D. Ontaneda (Cleveland, US)

Hot Topic, Hall B

11:45 - 12:30　　　**Hot Topic 7: Imaging of neuronal structure and function to understand disease progression**

Chairs
C. Enzinger (Graz, AT)
P. Matthews (London, UK)

11:45 - 12:00	**180**	**Longitudinal fMRI**
		M.A. Rocca (Milan, IT)

12:00 - 12:15	**181**	**MRI-pathological correlation**
		J. Geurts (Amsterdam, NL)

12:15 - 12:30	**182**	**Advanced imaging of neurodegeneration**
		F. Barkhof (London, UK)

Hot Topic, Hall C

11:45 - 12:30　　　**Hot Topic 8: Emerging high throughput technologies: challenges and opportunities**

Chairs
T. Olsson (Stockholm, SE)
S.E. Baranzini (San Francisco, US)

11:45 - 12:00	**183**	**Affinity proteomics for array based profiling of autoantibody repertoires**
		P. Nilsson (Solna, SE)

12:00 - 12:15	**184**	**High-dimensional cytometry for immunophenotyping**
		B. Becher (Zurich, CH)

12:15 - 12:30	**185**	**Multi-Omics approaches for glia**
		F. Quintana (Boston, US)

Scientific Programme

Hot Topic, Hall D

11:45 - 12:30   **Hot Topic 9: Science & art of symptomatic treatment**

Chairs

T. Berger (Innsbruck, AT)
O. Fernández (Málaga, ES)

11:45 - 12:00   **186**   **Biological basis for brain reserve**
F. Zipp (Mainz, DE)

12:00 - 12:15   **187**   **Depression and fatigue: how to break the vicious circle**
A. Feinstein (Toronto, CA)

12:15 - 12:30   **188**   **Grand perspective on tackling motor impairment**
A.J. Thompson (London, UK)

Educational Session, Hall E

11:45 - 12:45   **Case-based Educational Session 19: Paediatric MS**

Chairs

T. Chitnis (Boston, US)
J. Gärtner (Göttingen, DE)

11:45 - 12:15   **189**   **What's in a name? Paediatric MS or another diagnosis?**
T. Chitnis (Boston, US)

12:15 - 12:45   **190**   **Treatment of highly active paediatric MS and potential treatment failures**
J. Gärtner (Göttingen, DE)

Meet the Expert, Meeting Room M4

12:00 - 13:00   **Meet the Expert 2: Differential diagnosis**

Chairs

M. Tintoré (Barcelona, ES)
O. Ciccarelli (London, UK)

Satellite Symposium, Hall A

13:00 - 14:00   **Satellite Symposium 6: Evolving MS treatment with immune reconstitution therapy**

Supported by Merck

Chairs

G. Giovannoni (London, UK)

         191   **Welcome**
G. Giovannoni (London, UK)

| 13:00 - 13:10 | 192 | **Immune reconstitution therapies in MS treatment** |
| | | O. Stuve (Dallas, US) |

| 13:10 - 13:25 | 193 | **Durable efficacy of B- and T-cell targeting IRT: focus on Cladribine Tablets** |
| | | A. Chan (Bern, CH) |

| 13:25 - 13:40 | 194 | **Safety profile of IRT: what did we learn from Cladribine Tablets?** |
| | | M. Duddy (Newcastle upon Tyne, UK) |

| 13:40 - 13:55 | 195 | **Does the selectivity of Cladribine Tablets explain the long-term clinical outcomes?** |
| | | G. Giovannoni (London, UK) |

| 13:55 - 14:00 | 196 | **Concluding remarks** |
| | | G. Giovannoni (London, UK) |

Satellite Symposium, Hall B

13:00 - 14:00　　**Satellite Symposium 7: Committing to patients, impacting individuals: towards an individualised approach for patients with MS**

Supported by Novartis Pharma AG

Chairs
H. Wiendl (Münster, DE)

| 13:00 - 13:05 | 197 | **Chair's opening and welcome** |
| | | H. Wiendl (Münster, DE) |

| 13:05 - 13:25 | 198 | **Fine-tuning care: biomarkers of disease prognosis and treatment response** |
| | | J. Palace (Oxford, UK) |

13:25 - 13:45	199	**Ready for the mainstream? Neurofilaments as a biomarker in routine MS practice (debate)**
		F. Piehl (Stockholm, SE)
		M.P. Sormani (Genoa, IT)

| 13:45 - 14:00 | 201 | **Panel discussion and closing remarks** |
| | | H. Wiendl (Münster, DE) |

Scientific Session, Hall A

14:15 - 15:45　　**Scientific Session 8: When to start and when to stop immunomodulatory treatment in MS**

Chairs
G. Edan (Rennes, FR)
E. Maillart (Paris, FR)

Scientific Programme

14:15 - 14:35	202	**Indications and options for early immunomodulatory therapy**
		H.-P. Hartung (Düsseldorf, DE)

14:35 - 14:55	203	**When to stop immunotherapy?**
		J. Corboy (Denver, US)

Platform presentations of related original papers

14:55 - 15:07	204	**The optimal time to start treatment in relapsing remitting multiple sclerosis patients: results from the Big Multiple Sclerosis Data Network**
		P. Iaffaldano (Bari, IT)

15:07 - 15:19	205	**Plasma neurofilament light levels segregate treatment effects: results from the IMSE studies with multiple disease modulatory drugs**
		B. Delcoigne (Stockholm, SE)

15:19 - 15:31	206	**Recurrence of disease activity after fingolimod discontinuation - observations in a real-world cohort with 433 multiple sclerosis patients**
		N. Cerda (Basel, CH)

15:31 - 15:43	207	**Disease activity during pregnancy after fingolimod withdrawal due to planning a pregnancy in women with multiple sclerosis**
		S. Hemat (Bochum, DE)

Scientific Session, Hall B

14:15 - 15:45   Scientific Session 9: Neuromyelitis optica spectrum disease (NMOSD)

Chairs
K. Fujihara (Sendai, JP)
B. Wildemann (Heidelberg, DE)

14:15 - 14:35	208	**Update on pathogenesis**
		M. Bradl (Vienna, AT)

14:35 - 14:55	209	**Update on therapy**
		T. Kümpfel (Munich, DE)

Platform presentations of related original papers

14:55 - 15:07	210	**The Hungarian population-based prevalence and incidence study of neuromyelitis optica spectrum disorder**
		V. Papp (Aarhus, DK)

15:07 - 15:19	211	**Predictors of outcome after a first attack of Neuromyelitis Optica**
		M. Guillaume (Rouen, FR)

15:19 - 15:31	212	**Retinal ganglion cell loss in neuromyelitis optica: a longitudinal study**
		F.C. Oertel (Berlin, DE)

15:31 - 15:43	213	**Serum glial fibrillary acidic protein (GFAP) and neurofilament light chain (NfL) in neuromyelitis optica spectrum disorders**
		M. Watanabe (Fukuoka, JP)

Scientific Programme

		Scientific Session, Hall C
14:15 - 15:45		**Scientific Session 10: Hunting for new targets to fight neurodegeneration**

Chairs
C. Lubetzki (Paris, FR)
M. Simons (Munich, DE)

14:15 - 14:35	214	**Targeting the neuron**
		M. Kerschensteiner (Munich, DE)

14:35 - 14:55	215	**Targeting glia as a strategy to prevent neurodegeneration in MS**
		C. ffrench-Constant (Edinburgh, UK)

Platform presentations of related original papers

14:55 - 15:07	216	**Structural and functional alterations of pyramidal neurons in a model of cortical multiple sclerosis**
		A.-M. Schumacher (München, DE)

15:07 - 15:19	217	**Nimodipine reduces acute relapse and prevents demyelination in models of multiple sclerosis**
		K. Smith (London, UK)

15:19 - 15:31	218	**Microglial interaction with nodes of Ranvier: a role in repair?**
		T. Roux (Paris, FR)

15:31 - 15:43	219	**Selective reduction of AMPA receptors on mature oligodendrocytes prevents demyelination and axonal injury in experimental autoimmune encephalomyelitis**
		K. Evonuk (Cleveland, US)

		Educational Session, Hall D
14:15 - 15:45		**Educational Session 20 (MAGNIMS): MRI and the diagnosis of multiple sclerosis**

Level: Basic

Chairs
F. Barkhof (London, UK)
M. Filippi (Milan, IT)

14:15 - 14:45	220	**MRI and the diagnosis of MS: from MAGNIMS 2016 to the 2017 revision of the McDonald criteria**
		M. Filippi (Milan, IT)

14:45 - 15:15	221	**Application of MRI diagnostic criteria in clinical practice**
		M. Tintoré (Barcelona, ES)

15:15 - 15:45	222	**MRI and multiple sclerosis misdiagnosis and differential diagnosis**
		F. Barkhof (London, UK)

Scientific Programme

Educational Session, Hall E

14:15 - 15:45 **Educational Session 21 (RIMS): Symptomatic treatment of MS: how to manage fatigue and gait dysfunction?**

Level: Basic

Chairs
J. Kesselring (Valens, CH)
V. de Groot (Amsterdam, NL)

14:15 - 14:45	**223**	**Overview** J. Kesselring (Valens, CH)
14:45 - 15:15	**224**	**Exercise for gait therapy** P. Feys (Hasselt, BE)
15:15 - 15:45	**225**	**Pharmacological and non-pharmacological treatment of fatigue** V. de Groot (Amsterdam, NL)

Meet the Expert, Meeting Room M4

14:15 - 15:15 **Meet the Expert 3: Treatment**

Chairs
E. Kubala Havrdová (Prague, CZ)
P.S. Sørensen (Copenhagen, DK)

Free Communications, Hall A

16:15 - 17:15 **Free Communications 4: Treatment**

Chairs
H. Weiner (Boston, US)
L. Airas (Turku, FI)

16:15 - 16:27	**226**	**Comparative efficacy of teriflunomide versus dimethyl-fumarate on clinical and MRI outcomes: a two years French multicenter observational study** D. Laplaud (Nantes, FR)
16:27 - 16:39	**227**	**Comparative effectiveness of teriflunomide and dimethyl fumarate in relapsing remitting multiple sclerosis. A Danish nationwide cohort study** M. Buron (Copenhagen, DK)
16:39 - 16:51	**228**	**Comparative effectiveness of dimethylfumarate and fingolimod in an Italian monocentric cohort of relapsing remitting multiple sclerosis patients** L. Moiola (Milan, IT)

16:51 - 17:03	229	**Final results of a placebo controlled, Phase 2 multicenter study of ublituximab (UTX), a novel glycoengineered anti-CD20 monoclonal antibody (mAb), in patients with relapsing forms of multiple sclerosis (RMS)**
		E. Fox (Round Rock, US)
17:03 - 17:15	230	**The use of autologous haematopoietic stem cell transplantation as a first line disease modifying therapy in patients with 'aggressive' multiple sclerosis**
		J. Das (Sheffield, UK)

Free Communications, Hall B

16:15 - 17:15 Free Communications 5: Imaging

Chairs
H. Tumani (Ulm, DE)
N. Totolyan (St. Petersburg, RU)

16:15 - 16:27	231	**Leptomeningeal enhancement in the brain on 7T MRI scans is common and is associated with cortical lesions in relapsing-remitting multiple sclerosis**
		J. Zurawski (Boston, US)
16:27 - 16:39	232	**Quantification of spinal cord atrophy in MS: which software, which vertebral level, spinal cord or brain MRI? A multi-centric, longitudinal comparison of three different volumetric approaches**
		C. Lukas (Bochum, DE)
16:39 - 16:51	233	**Advocacy for surrogacy: magnetisation transfer ratio indicates cortical multiple sclerosis lesion load in vivo**
		N. Mistry (Birmingham, UK)
16:51 - 17:03	234	**Detection of multiple sclerosis in brain MRIs using 3D convolutional networks**
		K. Ritter (Berlin, DE)
17:03 - 17:15	235	**Occurrence of non-linear brain volume loss trajectories in multiple sclerosis patients**
		T. Uher (Prague, CZ)

Free Communications, Hall C

16:15 - 17:15 Free Communications 6: Immunology/Neurobiology

Chairs
S. Meuth (Münster, DE)
S. Khoury (Beirut, LB)

| 16:15 - 16:27 | 236 | **Deep immune-profiling of monozygotic twins discordant for multiple sclerosis indicates that genetic identity overrides disease-specific immune features** |
| | | L.A. Gerdes (Munich, DE) |

| 16:27 - 16:39 | 237 | **High-dimensional profiling of single memory CD8+T cells reveals a specific pattern in multiple sclerosis patients** |
| | | E. Dugast (Nantes, FR) |

| 16:39 - 16:51 | 238 | **Increased acute axonal injury and elevated oligodendroglial numbers in spinal normal-appearing white matter in MS as compared to neuromyelitis optica** |
| | | C. Wegner (Göttingen, DE) |

| 16:51 - 17:03 | 239 | **Substantial 'subependymal-in' gradient of thalamic damage in progressive multiple sclerosis** |
| | | R. Magliozzi (Verona, IT) |

| 17:03 - 17:15 | 240 | **T-bet-expressing B cells as key drivers of multiple sclerosis: from peripheral induction to local recruitment** |
| | | M.M. van Luijn (Rotterdam, NL) |

Hot Topic, Hall D

16:15 - 17:00   Hot Topic 10: Access to and restrictions in MS therapy across countries

Chairs
P.S. Sørensen (Copenhagen, DK)
G. Comi (Milan, IT)

| 16:15 - 16:30 | 241 | **Clinician's view (Europe)** |
| | | E. Kubala Havrdová (Prague, CZ) |

| 16:30 - 16:45 | 242 | **Follow-on products for treatment of multiple sclerosis in Latin America: an update** |
| | | J. Correale (Buenos Aires, AR) |

| 16:45 - 17:00 | 243 | **MS society´s view** |
| | | M. Mitchell (London, UK) |

Educational Session, Hall E

16:15 - 17:15   Case-based Educational Session 22: MOG-Ab phenotype

Chairs
M. Weber (Göttingen, DE)
T. Derfuss (Basel, CH)

| 16:15 - 16:45 | 244 | **Case 1: The features of anti-MOG antibody-associated CNS demyelination: NMOSD, MS or a novel disease entity?** |
| | | M. Weber (Göttingen, DE) |

| 16:45 - 17:15 | 245 | **Two cases of anti-MOG associated CNS demyelinating disease** |
| | | T. Derfuss (Basel, CH) |

Meet the Expert, Meeting Room M4

16:15 - 17:15 **Meet the Expert 4: Pregnancy**

Chairs
S. Vukusic (Lyon, FR)
M.P. Amato (Florence, IT)

Poster Sessions, Poster exhibition

17:15 - 19:15 **Poster Session 2**

| P650 | **STAR MS: Single Test to ARrive at MS diagnosis; a prospective, investigator blinded pilot study assessing the accuracy of the ´Central Vein Sign´ using a single 3T MRI scan in diagnosing MS in cases of diagnostic uncertainty (NCT02485223)** |
| | M. Clarke (Nottingham, UK) |

| P651 | **Applicability of neuromyelitis optica spectrum disease clinical trial attack criteria in a clinical routine setting - a trial design** |
| | M. D'Souza (Basel, CH) |

| P652 | **Sensitivity and specificity of serum myelin oligodendrocyte glycoprotein-IgG assay for the diagnosis of demyelinating diseases of the central nervous system** |
| | R. Orlandi (Verona, IT) |

| P653 | **What are the implications of retrospectively applying the 2017 McDonald MS diagnostic criteria to patients with CIS?** |
| | G. Giovannoni (London, UK) |

| P654 | **Brain and spinal cord lesion criteria distinguishes AQP4-positive neuromyelitis optica and MOG-positive disease from multiple sclerosis** |
| | M. Farez (Buenos Aires, AR) |

| P655 | **No better explanation: are we excluding the mimics when diagnosing multiple sclerosis?** |
| | A. Lockhart (Dublin, IE) |

| P656 | **Misdiagnosis of multiple sclerosis: prevalence and characteristics of misdiagnosed patients referred to two academic MS centers** |
| | M. Kaisey (Los Angeles, US) |

| P657 | **Magnetic resonance imaging features in neuromielitis optica spectrum disorder according aquaporine-4 serostatus in a Colombian cohort** |
| | L.M. Giraldo (Medellín, CO) |

Scientific Programme

P658 **Diagnosis of multiple sclerosis: comparison of the 2010 McDonald criteria, MAGNIMS 2016 and the new 2017 McDonald criteria**
J. Diaz (Leganes, ES)

P659 **MOG-antibody associated isolated myelitis: a distinct disease entity?**
J. Loos (Mainz, DE)

P660 **The spectrum of anti-MOG associated acquired demyelinating syndromes**
C.L. de Mol (Rotterdam, NL)

P661 **The influence of T cells in NMO disease pathogenesis**
M. Lindner (Münster, DE)

P662 **MOG-autoimmunity in Japan and Germany - a retrospective study in MOG-IgG-positive CNS inflammatory disorders**
M. Mori (Chiba, JP)

P663 **Clinical presentation of Anti MOG seropositivity in Israel**
A. Vaknin-Dembinsky (Jerusalem, IL)

P664 **Incidence of myelin oligodendrocyte glycoprotein- and aquaporin-4 antibodies in a northern German cohort of myelitis patients**
K.H. Stürner (Kiel, DE)

P665 **Unique clinical features of late-onset neuromyelitis optica spectrum disorders in a Japanese cohort**
E. Saji (Niigata, JP)

P666 **Neurofilament light chain is a useful biomarker in paediatric multiple sclerosis**
M.-C. Reinert (Göttingen, DE)

P667 **Serum neurofilament light chain in pediatric acquired demyelinating syndromes**
A. Bruijstens (Rotterdam, NL)

P668 **Prospective clinical and MRI characterization of children with serum anti-MOG antibodies meeting the multiple sclerosis diagnostic criteria**
G. Fadda (Philadelphia, US)

P669 **Diffusion tensor imaging in pediatric onset multiple sclerosis: differential links to information processing speed and memory functioning**
M. Shaw (New York, US)

P670 **Memory and identification of emotional expression in pediatric-onset multiple sclerosis**
T.L. Fabri (Toronto, CA)

P671 **Real world validation of the 2017 McDonald criteria for pediatric multiple sclerosis**
C.L. de Mol (Rotterdam, NL)

P672 **Late clinical activity in long-standing non-active multiple sclerosis patients**
L. Corti (Montpellier, FR)

Scientific Programme

P673   **The role of advanced care plans in preventing hospital deaths in multiple sclerosis**

E. Nicholas (London, UK)

P674   **Topological data analysis to identify subgroups of multiple sclerosis patients with faster disease progression**

R. Ramanujam (Stockholm, SE)

P675   **Outcomes of African-Americans compared to Caucasian-Americans in the CombiRx study**

O. Ayeni (New York, US)

P676   **The World Health Organization Disability Assessment Scale in the measurement of activity and participation in multiple sclerosis**

E. James (London, UK)

P677   **Assessing the cumulative effects of disease-modifying therapies on the current risk of irreversible disability in patients with relapsing-remitting multiple sclerosis**

F. Rollot (Lyon, FR)

P678   **Surveying the gut microbiota in multiple sclerosis: a systematic review (2008-2018)**

A. Mirza (Vancouver, CA)

P679   **A systematic assessment of prevalence, incidence and regional distribution of multiple sclerosis in Bavaria from 2006 to 2015**

T. Daltrozzo (Munich, DE)

P680   **The brain-derived neurotrophic factor Val66Met-polymorphism is associated with higher disability levels in multiple sclerosis patients**

L. Razzolini (Florence, IT)

P681   **MRI evidence suggests that late onset MS is due to true late onset rather than late presentation**

S. Quraishi (Nottingham, UK)

P682   **Social deprivation increases risk of disability in relapsing-remitting and secondary progressive MS**

F. Calocer (Caen, FR)

P683   **Epidemiology of NMOSD in Central Serbia**

J. Drulovic (Belgrade, RS)

P684   **Causes and outcomes of hospital admissions in neuromyelitis optica and multiple sclerosis patients - a nationally representative study**

A. Yeshokumar (New York, US)

P685   **Higher serum uric acid levels associated with smoking cessation but not disability or disease severity in patient with multiple sclerosis**

M. Alrouji (Nottingham, UK)

P686   **Demographics, lifestyle risk factors, and health outcomes of two large international samples of people with multiple sclerosis: HOLISM Longitudinal and Validation cohorts**

S. Simpson, Jr. (Carlton, AU)

Scientific Programme

P687   **Multiple sclerosis coverage in the written media of a low prevalence country**

S. Cárdenas-Robledo (Bogotá, CO)

P688   **Anti CD20 therapies and pregnancy in neuroimmunological disorders - a case series from Germany**

T. Kümpfel (Munich, DE)

P689   **Disease-modifying therapies, fertility and post-partum multiple sclerosis course: interim data from PREG-MS cohort**

M.C. Manieri (Boston, US)

P690   **Hypogonadism in men with multiple sclerosis: prevalence and clinical associations**

R. Farber (New York., US)

P691   **Communicating cognitive problems in MS: the effect of indirect language and stigma consciousness on subjective and objective memory performance**

H.E. Hulst (Amsterdam, NL)

P692   **Sexual dysfunction in multiple sclerosis: a systematic review and meta-analysis of prevalence**

J. Oh (Toronto, CA)

P693   **Cognitive self-monitoring persistence and reliability using the web-based battery, MSReactor**

D. Merlo (Melbourne, AU)

P694   **Sexual dysfunction in women with clinically isolated syndrome**

H. Shehata (Cairo, EG)

P695   **Objective and subjective assessment of physical activity in multiple sclerosis and their relation to fatigue**

F. Söke (Ankara, TR)

P696   **Clinical and urodynamic risk factors for recurrent urinary tract infections in multiple sclerosis**

P. Montero-Escribano (Madrid, ES)

P697   **Frailty assessment in ageing patients with multiple sclerosis**

X. Ayrignac (Montreal, CA)

P698   **Validation of the Fitbit Flex2 accelerometer to measure step count in people with MS during 7 days of continuous remote monitoring in the home environment**

V.J. Block (San Francisco, US)

P699   **Electronic Neurostatus-EDSS increases quality of expanded disability status scale (EDSS) assessments: first experience from two phase 3 clinical trials with ofatumumab in relapsing multiple sclerosis using the Web Diary**

M. D'Souza (Basel, CH)

Scientific Programme

P700 **Improving clinico-radiological correlation in multiple sclerosis with automated tract and topology annotations**
J. Richiardi (Lausanne, CH)

P701 **Accuracy versus reproducibility: comprehensive assessment of four automated methods for multiple sclerosis lesion segmentation**
M.J. Fartaria (Lausanne, CH)

P702 **Acceptability in clinical practice of MSCopilot, a smartphone application for the digital self-assessment of patients living with MS**
E. Maillart (Paris, FR)

P703 **Motion perception is associated with functional and structural visual pathway damage in multiple sclerosis and neuromyelitis optica spectrum disorders**
N. Ayadi (Berlin, DE)

P704 **Social network structure is a novel protective factor related to cognitive reserve in MS**
S. Levin (New York, US)

P705 **Korean validation of the 12-item multiple sclerosis walking scale and application to neuromyelitis optica spectrum disorder**
W. Kim (Seoul, KR)

P706 **Investigating the relation of cognition to cerebellar function in relapsing-remitting multiple sclerosis using the Motor Planning Index: a longitudinal study**
D. Langdon (London, UK)

P707 **Two-minute walk is more sensitive than timed 25-foot walk to gait changes in early multiple sclerosis**
D. Kurz (New York, US)

P708 **Central sleep apnea in people with multiple sclerosis who report fatigue: polysomnography study in a large cohort**
M. Gudesblatt (Patchogue, US)

P709 **Brain atrophy is detectable in an early multiple sclerosis cohort by using transcranial duplex**
J.M. García-Domínguez (Madrid, ES)

P710 **Comparison of the Audio Recorded Cognitive screen (ARCS) and Brief International Cognitive Assessment for Multiple Sclerosis (BICAMS) battery in assessing Australian MS patients**
J. Lechner-Scott (New Lambton, AU)

P711 **Clinical outcomes assessment in MS trials: on balance, the Berg Balance Scale is a precarious measure**
J. Hobart (Plymouth, UK)

P712 **Self-monitoring of mobility, signal processing speed, physical activity and sleep by persons with multiple sclerosis**
P. van Oirschot (Nijmegen, NL)

P713 **Screening for cognitive impairment in people with multiple sclerosis: is a unidimensional measure really sufficient to detect the cognitive elephant in the room?**
M. Gudesblatt (Patchogue, US)

P714 **Correlation of the brief international cognitive assessment of MS (BICAMS) and the multiple sclerosis cognitive - linguistic checklist (MSC-LC) with objective assessment and patient report measures of physical function and fatigue**
L. Kostich (Madison, US)

P715 **A mobile application for real-time assessment of fatigue and related symptoms in patients with multiple sclerosis**
M. Palotai (Boston, US)

P716 **Sick leave in early MS is associated with fatigue and relapse rate, not disability**
D. Doesburg (Amsterdam, NL)

P717 **Variation in employment status among people with MS in the United States, United Kingdom and Germany**
A. Salter (St. Louis, US)

P718 **Connectivity patterns within the visual network following damage to the optic nerve**
N. Levin (Jerusalem, IL)

P719 **Vision and vision-related measures in progressive multiple sclerosis**
N. Levin (Jerusalem, IL)

P720 **Fractal analysis of retinal vascular morphology in multiple sclerosis**
M. Cavallari (Boston, US)

P721 **Early age of onset predicts severity of visual impairment in patients with neuromyelitis optica**
G. Macaron (Cleveland, US)

P722 **Infrared pupillary asymmetry (IPA) for detection of a relative afferent pupillary defect (RAPD)**
N.S. Meneguette (Rio de Janeiro, BR)

P723 **Quantitative assessment of fatigue severity by means of manual infrared pupillometry in multiple sclerosis**
S. Samadzadeh (Bamberg, DE)

P724 **Functional-structural assessment of the optic pathways in patients with multiple sclerosis and optic neuritis**
M. Falck Schmidt (Glostrup, DK)

P725 **An investigation into the relationship between patient perceived visual function and objective measures of disease impact in people with multiple sclerosis: macular volume, retinal nerve fiber layer density, and visual evoked potential latency**
J. Srinivasan (Patchogue, US)

P726   **Hepatitis E virus infections as a possible complication of immunomodulatory treatment in multiple sclerosis**

M. Diebold (Basel, CH)

P727   **Assessing the burden of vascular risk factors on brain atrophy in multiple sclerosis: a case- control MRI study**

L. Lorefice (Cagliari, IT)

P728   **Cardiovascular disease (CVD) in patients diagnosed with multiple sclerosis (MS): a study in the UK Clinical Practice Research Database (CPRD)**

S. Jick (Boston, US)

P729   **Factors associated with comorbidity among persons with MS**

K.V. Turpin (Edmonton, CA)

P730   **Comorbidities significantly increase daily activity impairment and affect working status and work productivity in people with multiple sclerosis**

J. Chen (Hobart, AU)

P731   **Relapsing-remitting multiple sclerosis and subclinical atherosclerosis**

T. Omerzu (Maribor, SI)

P732   **The prevalence of comorbidities before and after the onset of multiple sclerosis compared to the general population**

I. van der Mei (Hobart, AU)

P733   **Care-seeking and disease modifying therapies use among multiple sclerosis patients with and without mental disorders: a population-based study**

A. Guilleux (Rennes, FR)

P734   **Analysis of neuronal morphology in the multiple sclerosis brain by diolistic labeling**

J. Dunham (Cleveland, US)

P735   **Thalamic lesion load does not relate to cortical lesion pathology: findings from a large cross-sectional multiple sclerosis cohort imaged at 7 Tesla**

A. Mehndiratta (Boston, US)

P736   **Multiple sclerosis brain T cells have a tissue resident memory-like phenotype and correlate positively with chronic active lesions**

J. Smolders (Sittard, NL)

P737   **Perivenous inflammatory demyelination with CD4-dominat T cell infiltration is prominent in myelin oligodendrocyte glycoprotein antibody-associated diseas**

Y. Takai (Sendai, JP)

P738   **Pathologic and MRI correlation in acute atypical inflammatory demyelinating lesions**

X. Ayrignac (Montreal, CA)

P739   **Immune cell trafficking to the gut shapes experimental autoimmune encephalomyelitis**

D. Duc (Lausanne, CH)

Scientific Programme

P740   **Optic neuritis detected with visual evoked potentials in experimental autoimmune encephalomyelitis mice model**

S. Marenna (Milano, IT)

P741   **Cholesterol supports repair in mouse models of demyelination and remyelination**

G. Saher (Goettingen, DE)

P742   **Environmental enrichment improves cognitive function and anxiety-like symptoms and decreases neuroinflammation in a focal cortical model of progressive multiple sclerosis**

B.A. Silva (Buenos Aires, AR)

P743   **BMP signaling blockade as a therapeutic approach for MS: mechanistic studies**

H. Eixarch (Barcelona, ES)

P744   **The roles of monocyte derived versus classical dendritic cells in the initiation of autoimmune demyelinating disease**

P. Duncker (Ann Arbor, US)

P745   **Pathophysiological changes and neuropathic pain in experimental autoimmune encephalomyelitis (EAE)**

J. Bethea (Philadelphia, US)

P746   **GM-CSF activates the CCR1 chemokine pathway to promote the development of chronic disability in EAE**

P. Duncker (Ann Arbor, US)

P747   **Epigenetic mechanisms regulate T helper 17 and T regulatory cells during pregnancy in multiple sclerosis**

S. Rolla (Orbassano, IT)

P748   **Multiple sclerosis-associated IL2RA gene variants affect DNA methylation**

H.B. Søndergaard (Copenhagen east, DK)

P749   **Chr8p23 region implicated in genetic basis for demyelination in multiple sclerosis patients**

I. Smets (Leuven, BE)

P750   **Multiple sclerosis susceptibility variants influence natural killer cell function and phenotype**

L. Ferrè (Milan, IT)

P751   **MS risk loci are not associated with adult-onset post-infectious acquired demyelinating syndromes (ADS)**

F. Martinelli Boneschi (San Donato Milanese, IT)

P752   **ANXA2 circular DNAs are differentially expressed in multiple sclerosis patients**

L. Iparraguirre (Donostia, ES)

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P943 **Patient-reported SymptoMScreen baseline scores in patients with relapsing-remitting multiple sclerosis enrolled in Phase IIIb studies of ocrelizumab (ENSEMBLE and CASTING)**
I. Kister (New York, US)

P944 **Increased blood levels of high density lipoprotein (HDL) in patients with multiple sclerosis treated with fingolimod or dimethyl fumarate - a beneficial side effect and /or a potential biomarker?**
E. Staun-Ram (Haifa, IL)

P945 **Reliability of cross-sectional and longitudinal brain volume measurements in MS patients using FreeSurfer: a multi-vendor MRI study at 3 Tesla**
H. Amiri (Amsterdam, NL)

P946 **Assessing the effect of teriflunomide on unique active lesions in patients with relapsing remitting multiple sclerosis**
A.E. Miller (New York, US)

P947 **No change in phosphorous magnetic resonance spectroscopy and diffusion tensor imaging in patients with progressive multiple sclerosis treated with high-dose biotin. A one-year follow-up study**
P. Kauv (Créteil, FR)

P948 **Additional courses of alemtuzumab improved clinical and MRI outcomes in pooled CARE-MS I and II patients with disease activity after two courses: analysis of patients who received ≥3 courses**
A. Traboulsee (Vancouver, CA)

P949 **Effect of fingolimod on quality of life in paediatric MS: results of the phase 3 PARADIGMS Study**
L. Krupp (Stony Brook, US)

Scientific Programme

P950 **Disease course and grey matter volume predict success of home-based cognitive rehabilitation in multiple sclerosis**
T. Fuchs (Buffalo, US)

P951 **Effectiveness of walking exercise program in improving fatigue in relapsing remitting multiple sclerosis patients**
N.M. Shalaby (Cairo, EG)

P952 **Real-world effectiveness of alemtuzumab in relapsing-remitting MS patients in Germany: interim results of an observational study (TREAT-MS)**
K. Akgün (Dresden, DE)

P953 **Monitoring exercise in multiple sclerosis patients using the electronic medical record**
S. Rubin (Evanston, US)

P954 **Transcranial direct current stimulation (tDCS) enhances cognitive remediation outcomes in multiple sclerosis: results from a randomized clinical trial of telerehabilitation with 40 at-home treatment sessions**
M. Shaw (New York, US)

P956 **Beneficial effects of high-dose biotin (MD1003) in models of X-linked adrenoleukodystrophy**
A. Pujol (Barcelona, ES)

P957 **Understanding magnetic resonance imaging in multiple sclerosis (UMIMS): effect of an interactive online education tool on emotions, attitude and knowledge in people with multiple sclerosis**
I. Schiffmann (Hamburg, DE)

P958 **Application of a modified ketogenic diet in relapsing-remitting multiple sclerosis: a pilot study**
J.N. Brenton (Charlottesville, US)

P959 **Therapeutic inertia in multiple sclerosis care: a comparative study between Spain and Chile**
G. Saposnik (Toronto, CA)

P960 **Normalization of butyrate-producing Faecalibacterium after 12 weeks intervention with delayed-release dimethyl fumarate in multiple sclerosis**
T. Holmøy (Lørenskog, NO)

P961 **Tolerability and safety of Dimethyl fumarate in relapsing multiple sclerosis: a prospective observational post-marketing study**
S. Urtiaga (Madrid, ES)

P962 **Effect of combined aerobic-resistance circuit training on improving strength of respiratory muscles in individuals with mild to moderate multiple sclerosis: a pilot study**
M. Srp (Prague, CZ)

P963 **Changes in spatio-temporal gait parameters after physical rehabilitation in multiple sclerosis: a descriptive analysis**
E.-R. Meza-Murillo (Barcelona, ES)

	P965	**Ofatumumab versus teriflunomide in relapsing multiple sclerosis: baseline characteristics of two pivotal phase 3 trials (ASCLEPIOS I and ASCLEPIOS II)**
		L. Kappos (Basel, CH)
	P966	**Evaluation of pneumococcal and influenza vaccination coverage in patients with multiple sclerosis**
		J. Hryb (Buenos Aires, AR)
	P967	**Understanding the role of decisional conflict in making choices about disease modifying therapy in multiple sclerosis?**
		D. Wilkie (London, UK)
	P968	**Patients' and physicians' risk tolerance for multiple sclerosis therapies: preliminary results of an Italian survey**
		V. Martinelli (Milan, IT)
	P969	**Natalizumab and end of dose interval symptoms in patients with relapsing remitting multiple sclerosis: role of serum cytokines**
		C. Dekeyser (Gent, BE)

Satellite Symposium, Hall A

18:15 - 19:15   **Satellite Symposium 8: Brain volume loss and biomarkers: how will new research change the clinical management of MS?**

Supported by Celgene

Chairs
R. Gold (Bochum, DE)

18:15 - 18:20	246	**Welcome and introduction**
		R. Gold (Bochum, DE)
18:20 - 18:35	247	**Soluble biomarkers and their utility: diagnostics and their expanding role in MS practice**
		H. Wiendl (Münster, DE)
18:35 - 18:50	248	**Imaging: beyond the brain?**
		B.A. Cree (San Francisco, US)
18:50 - 19:05	249	**A grey area: what is important and how to assess it?**
		N. De Stefano (Siena, IT)
19:05 - 19:15	250	**Closing**
		R. Gold (Bochum, DE)

Scientific Programme

Satellite Symposium, Hall B

18:15 - 19:15 **Satellite Symposium 9: Combining DMT: a potential way forward for RMS***

Supported by Actelion-Janssen Neuroscience
 *DMT, disease-modifying therapy

Chairs
L. Kappos (Basel, CH)

18:15 - 18:20	**251**	**Welcome and introduction**
		L. Kappos (Basel, CH)
18:20 - 18:30	**252**	**Do we need combination therapy to advance in RMS?**
		J. Chataway (London, UK)
18:30 - 18:40	**253**	**Combination therapy: a well-trodden path in other complex diseases**
		L. Kappos (Basel, CH)
18:40 - 18:50	**254**	**The rationale for investigating DMF–S1PR combination therapy**
		A. Bar-Or (Philadelphia, US)
18:50 - 19:10	**255**	**Q & A and closing remarks**
		L. Kappos (Basel, CH)
		J. Chataway (London, UK)
		A. Bar-Or (Philadelphia, US)

Scientific Programme

Friday, 12 October 2018

		Satellite Symposium, Hall A
07:30 - 08:30		**Satellite Symposium 10: Treatment sequencing in MS: how do you choose the right DMD for your patient?**
		Supported by Merck
		Chairs C. Kleinschnitz (Essen, DE) J. Oh (Toronto, CA)
07:30 - 07:35	256	**Welcome** C. Kleinschnitz (Essen, DE)
07:35 - 07:55	257	**Treatment selection and switching: a road map** J. Oh (Toronto, CA) E. Kubala Havrdová (Prague, CZ)
07:55 - 08:25	258	**Treatment selection and switching: case presentations** C. Kleinschnitz (Essen, DE) S. Hodgkinson (NL)
08:25 - 08:30	259	**Concluding remarks** J. Oh (Toronto, CA)

		Scientific Session, Hall A
08:30 - 10:00		**Scientific Session 11: Approaches for tackling treatment failure**
		Chairs A.J. Coles (Cambridge, UK) A.H. Cross (St. Louis, US)
08:30 - 08:50	260	**How to define treatment failure?** J. Sastre-Garriga (Barcelona, ES)
08:50 - 09:10	261	**Strategies for switching therapy: how good is the evidence?** F. Lublin (New York, US)
		Platform presentations of related original papers
09:10 - 09:22	262	**Value of serum neurofilament light chain levels as a biomarker of suboptimal treatment response in MS clinical practice** Ö. Yaldizli (Basel, CH)
09:22 - 09:34	263	**Treatment escalation leads to fewer relapses compared with switching to another moderately effective therapy** T. Chalmer (Copenhagen, DK)

09:34 - 09:46	264	**Alemtuzumab after natalizumab SWitch in evolving rapidly severe multiple sclerosis (ANSWERS MS): long-term UK & Ireland experience**	
		P. Gallagher (Glasgow, UK)	
09:46 - 09:58	265	**Shift from fingolimod to alemtuzumab: what happens next?**	
		J. Frau (Cagliari, IT)	

Scientific Session, Hall B

08:30 - 10:00 **Scientific Session 12: Recent development in imaging for treatment monitoring**

Chairs
D. Miller (London, UK)
V. Callot (Marseille, FR)

08:30 - 08:50	266	**Recent developments in spinal cord imaging**	
		O. Ciccarelli (London, UK)	
08:50 - 09:10	267	**Atrophy**	
		N. De Stefano (Siena, IT)	

Platform presentations of related original papers

09:10 - 09:22	268	**Cranio-caudal patterns of cervical cord atrophy progression in MS according to disease phenotype and clinical worsening: a multicenter study**	
		M.A. Rocca (Milan, IT)	
09:22 - 09:34	269	**7T MP2RAGE MRI for assessment of myelination status in white matter lesions of multiple sclerosis**	
		H. Kolb (Bethesda, US)	
09:34 - 09:46	270	**Remyelination fails in the periventricular white matter in MS**	
		E. Poirion (Paris, FR)	
09:46 - 09:58	271	**In vivo assessment of myelin breakdown pattern in multiple sclerosis: a hybrid PET/MR [18F]florbetaben study**	
		A. Carotenuto (London, UK)	

Scientific Session, Hall C

08:30 - 10:00 **Scientific Session 13: Robotic and telehealth supported rehabilitation and exercise training in MS**

Chairs
J. Kesselring (Valens, CH)
A. Achiron (Tel Aviv, IL)

08:30 - 08:50	272	**Robot-assisted training in MS**	
		P. Feys (Hasselt, BE)	

08:50 - 09:10	273	**Telehealth applications for supporting exercise behavior in MS**

R. Motl (Birmingham, US)

Platform presentations of related original papers

09:10 - 09:22	274	**A comparison of human and digital speech analysis to describe and monitor cerebellar dysfunction and disease severity in multiple sclerosis**

G. Noffs (Carlton, AU)

09:22 - 09:34	275	**Association of a technology-enabled 9-Hole Peg Test with patient reported outcomes and Imaging metrics in a large multiple sclerosis clinic population**

L. Baldassari (Cleveland, US)

09:34 - 09:46	276	**Can motor fatigue be measured? - On the relation of fatigue trait, perceived exertion, and gait analysis measures after 6minute walking**

D. Drebinger (Berlin, DE)

09:46 - 09:58	277	**Novel multi-sensor algorithm captures subtle progression over one year in multiple sclerosis**

K.M. Krysko (San Francisco, US)

Educational Session, Hall D

08:30 - 10:00	**Educational Session 23: NMO-spectrum disorders: current concepts and clinical management**

Level: Intermediate

Chairs
F. Paul (Berlin, DE)
J. Palace (Oxford, UK)

08:30 - 09:00	278	**NMOSD and AQP4-Ab positive disease classification and update on epidemiology and phenotypic features**

F. Paul (Berlin, DE)

09:00 - 09:30	279	**MOG antibody disease update and differentiation from MS and AQP4-Ab positive disease**

K. Fujihara (Sendai, JP)

09:30 - 10:00	280	**Treatment of NMOSD using case studies**

J. Palace (Oxford, UK)

Scientific Programme

Educational Session, Hall E

08:30 - 10:00

Educational Session 24: The use of stem cells in MS: where are we and where are we going?

Level: Intermediate

Chairs
D. Karussis (Jerusalem, IS)
A. Uccelli (Genoa, IT)

08:30 - 09:00	**281**	**Overview of the rationale and the options of stem cells therapies in MS and review of the existing clinical experience** D. Karussis (Jerusalem, IS)
09:00 - 09:30	**282**	**Mesenchymal stem cells in MS: possible mechanisms of action and future directions** A. Uccelli (Genoa, IT)
09:30 - 10:00	**283**	**The rationale and the existing clinical data using haematopoietic stem cells in MS** P.A. Muraro (London, UK)

Scientific Session, Hall A

10:30 - 12:00

Scientific Session 14: Recent developments in progressive MS

Chairs
L. Kappos (Basel, CH)
R. Kapoor (London, UK)

10:30 - 10:50	**284**	**Which subgroups of progressive MS should be treated?** X. Montalban (Toronto, CA)
10:50 - 11:10	**285**	**Update on neuroprotection trials in progressive MS** R.J. Fox (Cleveland, US)
		Platform presentations of related original papers
11:10 - 11:22	**286**	**Neurofilament light levels in the blood of patients with secondary progressive MS are higher than in primary progressive MS and may predict brain atrophy in both MS subtypes** L. Kappos (Basel, CH)
11:22 - 11:34	**287**	**Slowly evolving lesions and relation to disability in a SPMS cohort** A. Calvi (London, UK)
11:34 - 11:46	**288**	**A molecular characterization of meningeal inflammatory infiltrates in the progressive multiple sclerosis brain** L. Fuentes Font (London, UK)

11:46 - 11:58	289	**Efficacy, safety and tolerability of IB-MS versus placebo in patients with progressive forms of MS: preliminary results from a phase II, randomized, placebo-controlled, double blind, proof of concept study**
		E. Ciampi (Santiago, CL)

Scientific Session, Hall B

10:30 - 12:00 — Scientific Session 15: "MS spectrum disease"?

Chairs
H. Wekerle (Martinsried, DE)
H. Lassmann (Wien, AT)

10:30 - 10:50	290	**Pathologic evidence for disease heterogeneity**
		W. Brück (Göttingen, DE)

10:50 - 11:10	291	**MRI evidence for disease heterogeneity**
		D.S.S. Reich (Bethesda, US)

Platform presentations of related original papers

11:10 - 11:22	292	**Diffusion basis spectrum imaging for identifying subtypes of multiple sclerosis**
		A. Shirani (St. Louis, US)

11:22 - 11:34	293	**Peripapillary hyperreflective ovoid mass-like structures in multiple sclerosis are associated with disease progression**
		A. Petzold (London, UK)

11:34 - 11:46	294	**Clinical features of patients with anti-myelin oligodendrocyte glycoprotein (MOG) antibody-positive optic neuritis with a certain antibody-binding epitope on human MOG extracellular domain**
		K. Tanaka (Niigata, JP)

11:46 - 11:58	295	**Evaluation of treatment response in adults with relapsing MOG-Ab-associated disease**
		A. Cobo- Calvo (Lyon, FR)

Scientific Session, Hall C

10:30 - 12:00 — Scientific Session 16: Understanding MS by integrating clinical and multiOMICs data

Chairs
P. De Jager (New York, US)
F. Quintana (Boston, US)

10:30 - 10:50	296	**From MS genetics to pathogenetic concepts**
		L. Fugger (Oxford, UK)

10:50 - 11:10	297	**MultiOMics in MS**
		C. Cotsapas (New Haven, US)

Platform presentations of related original papers

| 11:10 - 11:22 | 298 | **DNA methylation signatures of monozygotic twins clinically discordant for multiple sclerosis** |
| | | L.A. Gerdes (Munich, DE) |

| 11:22 - 11:34 | 299 | **Multiple sclerosis associated SNPs influencing B cell expression of co-stimulatory receptors and T cell proliferation and cytokine secretion profile** |
| | | D. He (Cambridge, UK) |

| 11:34 - 11:46 | 300 | **Single-cell RNA-sequencing identifies putative multiple sclerosis-associated microglial subtypes** |
| | | V. Menon (New York, US) |

| 11:46 - 11:58 | 301 | **Bile acid metabolism is altered in MS and supplementation leads to amelioration of neuroinflammation** |
| | | P. Bhargava (Baltimore, US) |

Educational Session, Hall D

10:30 - 12:00 **Educational Session 25: MS mimicks: genetic disorders**

Level: Basic

Chairs
O. Boespflug-Tanguy (Paris, FR)
F. Mochel (Paris, FR)

| 10:30 - 11:00 | 302 | **Genetic mimicks with acute presentation** |
| | | O. Boespflug-Tanguy (Paris, FR) |

| 11:00 - 11:30 | 303 | **Genetic mimicks with progressive presentation** |
| | | F. Mochel (Paris, FR) |

11:30 - 12:00	304	**Treatments in genetic mimicks of MS**
		O. Boespflug-Tanguy (Paris, FR)
		F. Mochel (Paris, FR)

Educational Session, Hall E

10:30 - 12:00 **Educational Session 26 (MAGNIMS): From structural and functional connectivity to clinical impairment in multiple sclerosis**

Level: Advanced

Chairs
M.A. Rocca (Milan, IT)
D. Chard (London, UK)

Scientific Programme

10:30 - 11:00	**306**	**Structural connectivity** M. Schoonheim (Amsterdam, NL)	
11:00 - 11:30	**307**	**Functional connectivity** M.A. Rocca (Milan, IT)	
11:30 - 12:00	**308**	**Clinical significance** D. Chard (London, UK)	

Scientific Session, Hall E

12:00 - 13:00   **Google Hangout**

A google hangout broadcast from ECTRIMS 2018 with Barts MS researchers sharing highlights from the meeting.

Chairs
M. Marta (London, UK)
A. Thomson (London, UK)

12:00 - 13:00   **309**   **ECTRIMS 2018 Highlights**
D. Baker (London, UK)
S. Gnanapavan (London, UK)

Poster Sessions, Poster exhibition

12:15 - 14:15   **Poster Session 3**

P970   **Prediction of conversion to multiple sclerosis using the 2017 McDonald and 2016 MAGNIMS criteria in patients with clinically isolated syndrome**
A. Miclea (Bern, CH)

P971   **Differential diagnosis of multiple sclerosis with machine learning-based central vein sign recognition**
J. Richiardi (Lausanne, CH)

P972   **Sensitivity and specificity of 2017 McDonald criteria for multiple sclerosis in patients with clinically isolated syndrome**
F. Gobbin (Verona, IT)

P973   **Performance of the 2010 and 2017 revised McDonald criteria in an Italian retrospective cohort of patients with clinically isolated syndrome**
V. Camera (Modena, IT)

P974   **Treatment in attacks of NMOSD: steroids versus plasma exchange in a Colombian cohort**
L.M. Giraldo (Medellín, CO)

P975   **A brief language-independent and self-administered computerized test for cognitive assessment in multiple sclerosis (MS)**
S.-M. Khaligh-Razavi (Tehran, IR)

Scientific Programme

P976   **The review of systems questionnaire discriminates medically unexplained neurologic symptoms from neurologic disease in a multiple sclerosis referral clinic**

B. Jones (Birmingham, US)

P977   **Longitudinally extensive transvers myelitis: a single instution experience**

E. Yilmaz (Ankara, TR)

P978   **Neuromyelitis optica misdiagnosed as multiple sclerosis: a hospital-based study**

A. Villa (Buenos Aires, AR)

P979   **Are recurrent myelitis a prodromic phase of inflammatory diseases or a distinct inflammatory condition?**

L. Cacciaguerra (Milan, IT)

P980   **Clinical and therapeutic predictors of relapse and disability outcomes in neuromyelitis optica spectrum disorder**

A. Kunchok (Melbourne, AU)

P981   **AQP4-autoimmunity in Japan and Germany - a comparative retrospective study in neuromyelitis optica spectrum disorders**

A.U. Brandt (Berlin, DE)

P982   **Early clinical predictors of severe MS**

C. Malpas (Melbourne, AU)

P983   **MOG-IgG antibodies in autoimmune demyelinating CNS disorders - retrospective analysis of a monocentric patient cohort**

K. Veselaj (Bern, CH)

P984   **Disease activity during pregnancy in patients with AQP4-Ab positive, MOG-Ab positive or double negative NMOSD**

C. Alves Do Rego (Strasbourg, FR)

P985   **Tumefactive multiple sclerosis: clinical, radiological and cognitive features**

C. Pita (Buenos Aires, AR)

P986   **Long-term cognitive consequences of paediatric-onset multiple sclerosis**

K.A. McKay (Stockholm, SE)

P987   **Cortical abnormalities and cognitive impairment in pediatric MS patients**

E. De Meo (Milan, IT)

P988   **Alterations along the posterior visual pathway in pediatric-onset multiple sclerosis**

R. Datta (Philadelphia, US)

P989   **MOG antibodies- associated disease in children: a French prospective cohort study**

K. Deiva (Kremlin Bicêtre, FR)

P990   **Long-term disability progression of paediatric-onset multiple sclerosis**

K.A. McKay (Stockholm, SE)

Scientific Programme

P991   **The relationship between skin pigmentation, HLA, vitamin d status and pediatric-onset multiple sclerosis**
C. Dunn (Philadelphia, US)

P992   **Time to relapse is comparable in pediatric- and adult-onset multiple sclerosis patients after the initiation of disease-modifying therapy**
B.F. Décard (Basel, CH)

P993   **MRI markers of disease severity in patients with CIS and MS with EDSS ≤3 and their relation to functional performance - a cross-sectional study**
L. Rasche (Berlin, DE)

P994   **Aggressive transformation of secondary progressive MS**
W.K.W. Fung (Swansea, UK)

P995   **Reproductive history in a Danish nationwide registry-based study with a century's follow-up**
M. Magyari (Copenhagen, DK)

P996   **Hair and eye colour, skin reactivity, and melanin production gene mutations as risk factors for multiple sclerosis: a case-control study in Sweden**
K.A. Smith (Stockholm, SE)

P997   **A multi-national study of socioeconomic status and disability progression in multiple sclerosis**
K. Harding (Cardiff, UK)

P998   **US-based African Americans with multiple sclerosis have greater disability and lower socio-economic status than Caucasian Americans**
K. Gray-Roncal (Baltimore, US)

P999   **Association between demographic factors, DMT utilization and DMT switching on MS relapse rates**
J. Marriott (Winnipeg, CA)

P1000   **Care-seeking of patients with multiple sclerosis over 2010-2015 in France: a nationwide study using health administrative data**
J. Roux (Rennes, FR)

P1001   **Effect of dietary patterns on disease activity in early multiple sclerosis**
D. Chermon (Ramat Gan, IL)

P1002   **The epidemiology of pediatric multiple sclerosis in Tehran**
S. Eskandarieh (Tehran, IR)

P1003   **Channeling to therapy in Swedish multiple sclerosis patients, with special reference to rituximab**
B. Delcoigne (Stockholm, SE)

P1004   **Interferon-β/glatiramer acetate treatment during lactation in women with multiple sclerosis**
K. Hellwig (Bochum, DE)

Scientific Programme

P1005 **Epidemiological features and persistence to disease-modifying therapies in a population of multiple sclerosis patients from four provinces of Veneto region**
A. Marangi (Verona, IT)

P1006 **Multiple sclerosis and migration: a comparison between patients living in Sicily and born in different countries**
A. Bianchi (Palermo, IT)

P1007 **Changes of disease characteristics and disease-modifying treatment within one year in the National German MS cohort**
A. Salmen (Bochum, DE)

P1008 **Neurofilament light chain levels in pregnant multiple sclerosis patients: a prospective cohort study**
J.P. Cuello (Madrid, ES)

P1009 **Sex differences in peripheral B cell composition underlie more progressive disease course in male patients**
F. Gilli (Lebanon, US)

P1010 **Reproductive decision-making in women with multiple sclerosis in the New York State Multiple Sclerosis Consortium**
C.B. Vaughn (Buffalo, US)

P1011 **Neurophysiological correlates of fatigue in people with multiple sclerosis**
P. Ellison (Newcastle Upon Tyne, UK)

P1012 **Central neuropathic pain in multiple sclerosis is associated with structural and functional damage of pain processing and pain modulation pathways**
R. Defrin (Tel-Aviv, IL)

P1014 **Atypical clinical features as a presentation of multiple sclerosis**
C. Pita (Buenos Aires, AR)

P1015 **Subclinical cochlear involvement in newly diagnosed relapsing-remitting multiple sclerosis**
M. Albanese (Rome, IT)

P1017 **Heterogeneity of EDSS progression assessment in patients with MS in different geographical regions**
F. Bovis (Genova, IT)

P1018 **Benchmarks of manual dexterity and walking speed in a large, representative patient population**
C. deMoor (Cambridge, US)

P1019 **The arm function in multiple sclerosis questionnaire (AMSQ), a cross cultural validation**
N. Kalkers (Amsterdam, NL)

P1020 **Executive functions but processing speed impacts on gait phases**
G. Coghe (Cagliari, IT)

Scientific Programme

P1021 **Cognition in secondary progressive multiple sclerosis(SPMS)**
A. Doshi (London, UK)

P1022 **Feasibility and validity of the Biodex Balance System in multiple sclerosis**
F. Söke (Ankara, TR)

P1023 **Comparing "Gold Standard" prospective daily self-report fall calendars with a real-time body-worn self-report device in multiple sclerosis**
M. Cameron (Portland, US)

P1024 **Upper limb function correlates with objective measures of damage in MS: an OCT and MRI study**
A. Signori (Genoa, IT)

P1025 **Implementation of technology-enabled data capture in routine clinical care of patients with multiple sclerosis**
G. Macaron (Cleveland, US)

P1026 **MS race: how does speed affect our patients?**
R. Alonso (Ciudad de Buenos Aires, AR)

P1027 **The relationship between obstructive sleep apnea and age, gender, EDSS, disease duration, and BMI in people with multiple sclerosis who report fatigue: more than size matters**
J. Srinivasan (Patchogue, US)

P1028 **Multiple sclerosis and the limited association between EDSS and PDDS and the NeuroTrax assessment of cognitive disability**
C. Geremakis (Cambridge, US)

P1029 **Validation of fully automated total brain volumetric analysis by AccuBrain as compared to SIENAX for multiple sclerosis**
A. Lau (Hong Kong, HK)

P1030 **Introducing Multiple Screening: a self-explanatory digital screening tool for cognitive deficits in MS**
L. van Dongen (Amsterdam, NL)

P1031 **Systematic multidimensional clinical point-of-care monitoring of people with multiple sclerosis using 3test**
K. Allen-Philbey (London, UK)

P1032 **Effect of MD1003 (high dose pharmaceutical grade biotin) on remotely monitored ambulatory activity in progressive MS: initial step count data of the phase 3 SPI2 study**
B.A. Cree (San Francisco, US)

P1033 **Automated assessment of new and enlarged white matter and cortical lesions in early multiple sclerosis**
M.J. Fartaria (Lausanne, CH)

P1034 **Re-evaluating an algorithm to identify multiple sclerosis relapse in insurance claims databases**
E. Yang (South San Francisco, US)

P1035 **Real-world outcome in multiple sclerosis estimated from two cost of illness studies and MS clinic data in the Czech Republic**

G. Kobelt (Stockholm, SE)

P1036 **Disposable income trajectories of working-aged people with a multiple sclerosis diagnosis: a Swedish register-based cohort study**

C. Murley (Stockholm, SE)

P1037 **High fidelity fixational eye movements as a novel potential biomarker for disability in multiple sclerosis**

C.K. Sheehy (San Francisco, US)

P1038 **Non-random neurodegeneration of inner retinal layers connectome in relapsing remitting multiple sclerosis**

D. Landi (Rome, IT)

P1039 **Intrathecal oligoclonal IgG synthesis is associated with retinal axonal loss in early diagnosed relapsing remitting multiple sclerosis**

C.G. Chisari (Catania, IT)

P1040 **Novel inflammatory ophthalmological presentations distinct from optic neuritis that are associated with myelin oligodendrocyte glycoprotein antibodies**

S. Ramanathan (Sydney, AU)

P1041 **A new association: acute macular neuro retinopathy in acute optic neuritis**

R. Deschamps (Paris, FR)

P1042 **Contribution of visual evoked potentials in the diagnosis and characterization of visual impairment**

C. Mhiri (Sfax, TN)

P1043 **Tissue volume dependent retinal blood perfusion in patients with multiple sclerosis**

J. Wang (Miami, US)

P1044 **Macular ganglion cell layer allows the identification of subclinical optic neuritis**

M. Pengo (Padova, IT)

P1045 **Quantitative pupillary pathway assessment with automated pupillometry and its correlation with visual evoked potential latency in multiple sclerosis without a history of optic neuritis**

S. Samadzadeh (Bamberg, DE)

P1046 **Influence of depression on subjective rating of physical disability in a large clinical cohort**

E. Alshehri (Cleveland, US)

P1047 **Pain syndromes in NMOSD - results of a nationwide multicenter study in Germany using the Neuromyelitis Optica Study Group registry**

I. Ayzenberg (Bochum, DE)

P1048 **The systemic sarcoidosis and multiple sclerosis dilemma: Serum Amyloid A in cerebrospinal fluid as a useful marker to exclude neurosarcoidosis out of the equation**

M. Reyes-Mantilla (Baltimore, US)

P1049 **Impact of comorbidity and DMT use on disability status by DMT group in participants in the Pacific Northwest MS Registry**

T. Stuchiner (Portland, US)

P1050 **Sleep in Portuguese patients with multiple sclerosis: questionnaire-based study**

A. Barros (Lisboa, PT)

P1051 **Increased risk of infections in patients diagnosed with multiple sclerosis (MS): a study in the UK Clinical Practice Research Database (CPRD)**

S. Jick (Boston, US)

P1052 **Multiple sclerosis patients are more frequently readmitted for depression or suicide attempt compared to people with asthma or rheumatoid arthritis**

D. Kurz (New York, US)

P1053 **The effect of smoking on 'normal appearing white matter' and lesion load in periventricular regions of patients with multiple sclerosis**

A. Pichler (Graz, AT)

P1054 **Occipital neuralgia and multiple sclerosis. A case series. Hospital del Mar, Barcelona**

A. Barguilla Arribas (Barcelona, ES)

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P1245　　**MS-PML.org, an e-learning resource for physicians to facilitate early recognition of progressive multifocal leukoencephalopathy in the setting of MS: analysis and interpretation of usage data**

F. Barkhof (London, UK)

P1246　　**Evaluating the tolerability and safety profile of switching from rituximab to ocrelizumab: infusion related reactions in relapsing forms of multiple sclerosis**

T. Vollmer (Aurora, US)

P1247　　**Progressive multifocal leukoencephalopathy in extended interval dosing of natalizumab: four cases from the Italian PML cohort**

C. Scarpazza (Brescia, IT)

P1248　　**T-cell mediated secondary autoimmunity following alemtuzumab treatment: 2 cases of vitiligo**

T. Ruck (Münster, DE)

P1249　　**Results from an Italian Consensus Conference on prevention and management of infections in multiple sclerosis patients treated with biological and non biological disease modifying drugs**

L. Moiola (Milan, IT)

P1250　　**Young and naïve MS patients have a lower risk of adverse events during alemtuzumab infusion**

M. Puthenparampil (Padova, IT)

Scientific Programme

P1251 **Patients treated with delayed-release dimethyl fumarate have no increased risk of herpes zoster based on clinical trial and post-marketing report data**

J. Hanna (Cambridge, US)

P1252 **Defining extracellular RNA (exRNA) expression as an indicator for natalizumab treatment response and PML risk assessment in multiple sclerosis**

M. Meira (Basel, CH)

P1253 **Incidence of pregnancy in women with multiple sclerosis treated with teriflunomide in France**

E. Leray (Rennes, FR)

P1254 **Safety and efficacy of delayed-release dimethyl fumarate in multiple sclerosis patients treated in routine medical practice: interim analysis of ESTEEM**

N.J. Everage (Cambridge, US)

P1255 **Incidence of PML in Finland in 2004-2014**

J. Sipilä (Joensuu, FI)

P1256 **CD62L and JCV index for PML risk management in treated MS patients**

B. Pignolet (Toulouse, FR)

P1257 **Reduction of infusion related reactions during ocrelizumab infusions in a comprehensive multiple sclerosis Care Center**

K. Edwards (Latham, US)

P1258 **Improvements across functional systems are maintained regardless of early vs late confirmed disability improvement: CARE-MS 6-year follow-up**

P. Vermersch (Lille, FR)

P1259 **Fluorine-19 magnetic resonance imaging as a method for the individualized theranostic of fluorine labelled drugs in neuroinflammation**

C. Prinz (Berlin, DE)

P1260 **Dimethyl fumarate-induced lymphocyte drop at six months predicts short-term disease activity in multiple sclerosis: an independent, prospective, post-marketing evaluation**

C. Tortorella (Rome, IT)

P1261 **Treatment effects of fampridine on ambulation and upper extremity function in patients with multiple sclerosis from a real-world evidence cohort**

C.E. van Munster (Amsterdam, NL)

P1262 **Peginterferon beta-1a reduces the number of black holes evolved from acute MRI lesions in newly diagnosed patients with relapsing-remitting multiple sclerosis: a post hoc analysis ADVANCE**

D.L. Arnold (Montreal, CA)

P1263 **Gene expression profiles of proteins involved in cladribine metabolism and their possible correlation with Epstein-Barr virus variants**
R. Mechelli (Rome, IT)

P1264 **A prospective, non-interventional study in US patients with relapsing-remitting multiple sclerosis treated with alemtuzumab in routine clinical practice (PROMiS): interim results on patient reported outcomes**
B.O. Khatri (Milwaukee, US)

P1265 **A systematic review of real-world adherence and persistence of once- or twice-daily oral disease-modifying drugs (dimethyl fumarate, fingolimod, and teriflunomide) in multiple sclerosis**
J. Nicholas (Columbus, US)

P1266 **Cortical modulatory effect of Fampridine in patients with multiple sclerosis and gait impairment**
N. Riachi (Beirut, LB)

P1267 **Standing up in people with progressive multiple sclerosis (SUMS): a multi-centre randomised controlled trial evaluating a home-based standing frame programme**
J. Freeman (Plymouth, UK)

P1268 **High frequency repetitive transcranial magnetic stimulation (rTMS) can improve balance and white matter integrity in patients with relapsing remitting multiple sclerosis. A long term follow up study**
H. Shehata (Cairo, EG)

P1269 **Resting-state functional connectivity increase after upper-limb task-oriented motor rehabilitation in progressive MS**
G. Boffa (Genova, IT)

P1270 **Effects of Kinect-based virtual reality exercises on balance and risk of falling in people with multiple sclerosis: a pilot double blinded randomized control trial**
F. Molhemi (Ahvaz, IR)

P1271 **Balance Right in Multiple Sclerosis (BRiMS): preliminary results of a randomised controlled feasibility trial**
J. Freeman (Plymouth, UK)

P1272 **Patient and caregiver involvement in formulation of guideline questions: findings from the EAN guideline on palliative care of people with severe multiple sclerosis**
A. Solari (Milan, IT)

P1273 **Intensive exercising over four weeks improved subjective and objective sleep, depression and fatigue among patients with multiple sclerosis (MS)**
D. Sadeghi Bahmani (Basel, CH)

P1274 **"Keep going!" Symptoms of depression, sleep disturbances, fatigue and anxiety improved 12 weeks after exercising and active leisure time activity, but decreased further 16 weeks later - evidence for a continuous exercising program**
D. Sadeghi Bahmani (Basel, CH)

Scientific Programme

P1275   **Glatiramer acetate slows disability progression - final 10-year results from UK Risk Sharing Scheme**

S. Al-Izki (Castleford, UK)

P1276   **Life-threatening vitamin D intoxication due to intake of ultra-high doses in multiple sclerosis: a case report**

J. Feige (Salzburg, AT)

P1277   **Action observation training modulates dynamic functional connectivity in patients with multiple sclerosis**

C. Cordani (Milan, IT)

P1278   **A double-blind placebo-controlled study of satralizumab (SA237), a recycling anti-IL-6 receptor monoclonal antibody, as monotherapy for patients with neuromyelitis optica spectrum disorder (NMOSD)**

A. Traboulsee (Vancouver, CA)

P1279   **The influence of decision fatigue on therapeutic decisions in multiple sclerosis care**

G. Saposnik (Toronto, CA)

P1280   **The impact of fear of falling on leisure-time physical activity in multiple sclerosis**

A. Kalron (Tel-Aviv, IL)

P1281   **Pregnancy reports and outcomes from multiple sclerosis patients primarily treated with peginterferon beta-1a and delayed-release dimethyl fumarate in Germany**

G. Niemczyk (Ismaning, DE)

P1282   **PR Fampridine improves patient reported upper limb function in people with MS measured by ABILHAND**

J. Johnson (London, UK)

P1283   **Evidence based patient information and smartphone based activity feedback does not enhance physical activity in PPMS in a randomized controlled trial over three months**

N.N. Nasseri (Hamburg, DE)

P1284   **A meta-review of systematic reviews on psychosocial adjustment to multiple sclerosis diagnosis**

G. Topcu (Nottingham, UK)

P1285   **Impact of shared decision making on improving patient-clinician interactions and ms quality measures: a pilot study**

J.D. Bowen (Seattle, US)

P1286   **Healthcare resource use and disease progression among commercially insured patients with multiple sclerosis: a comparison of continuous and intermittent users of disease modifying therapy over five years (2012-2016)**

L. Amezcua (Los Angeles, US)

P1287   **Risk of falls and gait: effectiveness of a physiotherapy circuit training on the walk function, quality of life and risk of falls in a multiple sclerosis´ patients**

A. Granja Domínguez (Sevilla, ES)

P1288   **Comparing patient and healthcare professional perceptions on multiple sclerosis management and care - where do their priorities differ? Results from a qualitative survey**

S. Schippling (Zurich, CH)

P1289   **Core muscles' contraction and rest size and relationship with postural sway in fully ambulatory multiple sclerosis patients: an ultrasound imaging study**

Y. Salcı (Ankara, TR)

P1290   **Quantitative neuroimaging in multiple sclerosis (MS): which biomarker is the most reliable in the evaluation of MS-induced atrophy?**

E. Makras (Athens, GR)

P1740   **Natalizumab reduced serum levels of neurofilament light chain in secondary progressive multiple sclerosis patients from the phase 3 ASCEND study**

R. Kapoor (London, UK)

P1741   **Serum neurofilament light chain levels and cross-sectional and longitudinal deep gray matter changes: 5-year longitudinal MRI study**

J. Kuhle (Basel, CH)

P1742   **CD8 T cell-mediated endotheliopathy is a targetable mechanism of neuro-inflammation, as documented in Susac syndrome**

C.C. Gross (Münster, DE)

P1743   **BCAS1 identifies active cortical remyelination in early and late stage multiple sclerosis**

F. van der Meer (Göttingen, DE)

P1744   **Pathology of anti-MOG antibody-associated demyelination**

T. Maragkou (Goettingen, DE)

P1745   **Accelerated cord atrophy precedes conversion to secondary progressive disease in relapsing multiple sclerosis**

A. Bischof (San Francisco, US)

P1746   **Did risk stratification modify the incidence of PML in natalizumab-treated MS patients in France?**

S. Vukusic (Lyon, FR)

P1747   **Alemtuzumab reduces serum neurofilament light chain levels in relapsing-remitting multiple sclerosis patients from the CARE-MS I study**

J. Kuhle (Basel, CH)

P1748   **Long-term clinical outcomes in patients with CIS treated with interferon beta-1b: first results from BENEFIT 15**

L. Kappos (Basel, CH)

P1749   **Cortical thinning in multiple sclerosis: a 6-year longitudinal study**
C. Tsagkas (Basel, CH)

P1750   **Serum neurofilament light chain levels and cortical pathology in multiple sclerosis: 5-year longitudinal study**
R. Zivadinov (Buffalo, US)

P1751   **Genetic determinants of the intrathecal humoral immune response in multiple sclerosis**
C. Gasperi (Munich, DE)

P1752   **Peripapillary and parafoveal vascular network assessment by optical coherence tomography angiography in Aquaporin-4 antibody-positive neuromyelitis optica spectrum disorders**
C. Quan (Shanghai, CN)

P1753   **Pregnancy and infant outcomes with interferon beta: data from the European Interferon Beta Pregnancy Registry and Population Based Registries in Finland and Sweden**
K. Hellwig (Bochum, DE)

P1754   **Microglial-dependent neurodegeneration in multiple sclerosis is fueled by pHERV-W envelope protein**
D. Kremer (Düsseldorf, DE)

P1755   **How does anti-IL-6 receptor monoclonal antibody tocilizumab treatment ameliorate neuromyelitis optica?**
T. Matsuoka (Tokyo, JP)

P1756   **Cognitive rehabilitation for attention and memory in people with multiple sclerosis: a randomised controlled trial**
R. das Nair (Nottingham, UK)

P1757   **High serum concentrations of vitamin D may protect against multiple sclerosis**
M. Biström (Umeå, SE)

P1758   **The role of the aryl hydrocarbon receptor in glial cells during demyelination**
S.N. Schmid (Göttingen, DE)

P1759   **Serum neurofilament light chain and glial fibrillary acid protein analysis in patients with multiple sclerosis: a clue to distinguish inflammation and neurodegeneration?**
X. Ayrignac (Montreal, CA)

P1760   **IgA B cells as novel players along the gut-brain axis in multiple sclerosis**
A.-K. Pröbstel (San Francisco, US)

P1761   **Fronto-subcortical circuits abnormalities in multiple sclerosis patients with cognitive impairment**
D. Meng (Nottingham, UK)

P1762   **Synaptic protection in EAE gray matter with ibudilast and URMC-099**
M.J. Bellizzi (Rochester, US)

Scientific Programme

P1763 **Behavior of skin-derived myelin-producing human oligodendrocytes (healthy controls vs MS) after transplantation in the central nervous system**

S. Mozafari (Paris, FR)

P1764 **Episode of encephalitis is important clinical component of MOG antibody associated demyelination: a single center cohort study in Shanghai, China**

C. Quan (Shanghai, CN)

P1765 **Selective inhibition of hyaluronidase activity reverses toll-like receptor mediated inhibition of myelin gene transcription and promotes functional remyelination in demyelinating lesions**

L.S. Sherman (Beaverton, US)

P1766 **Pilot study: Profiling of individual responses to alemtuzumab immune reconstitution treatment by high frequency serum neurofilament light assessment in highly active RRMS patients up to 102 months can pre-identify clinical and MRI disease activity**

K. Akgün (Dresden, DE)

P1767 **Anti-JCV antibody serology is associated with CSF cell counts in multiple sclerosis patients with and without natalizumab treatment**

T. Schneider-Hohendorf (Muenster, DE)

P1768 **A phase IIb double blind trial to investigate the efficacy and the optimal way of administration of mesenchymal stem cells (MSC) in active and progressive multiple sclerosis (MS)**

P. Petrou (Jerusalem, IL)

P1769 **The relationship of microglial activation and multiple sclerosis-associated fatigue: a [F-18]PBR06 PET study**

T. Singhal (Boston, US)

P1770 **Extended interval dosing of natalizumab shows comparable efficacy to standard interval dosing starting from the second year of treatment**

S. Ruggieri (Rome, IT)

P1771 **Pregnancy outcomes from the global pharmacovigilance database on interferon beta-1b exposure**

A. Adamo (São Paulo, BR)

P1772 **Single-cell analysis of intrathecal B cells in multiple sclerosis**

J. Polak (Oslo, NO)

P1773 **An hexameric soluble form of endogenous retroviral protein is specifically extracted from demyelinating MS lesions**

S. Amor (Amsterdam, NL)

P1774 **Pregnancy and multiple sclerosis in the DMT era: insights from a cohort study in Western Austria**

G. Bsteh (Innsbruck, AT)

P1775 **Risk estimates of progressive multifocal leukoencephalopathy related to fingolimod**

D. Ontaneda (Cleveland, US)

Scientific Programme

P1776   **Molecular engineering of Tregs expressing recombinant TCR: study of their therapeutic effects in an animal model of multiple sclerosis**
M. Malviya (Toulouse, FR)

P1777   **Glatiramer Acetate Depot (Extended-Release) phase IIa study in patients with relapsing remitting multiple sclerosis: safety, tolerability and efficacy (no evidence of disease activity) two-years analysis**
S. Flechter (Zerifin, IL)

P1778   **Accumulation of 8,9-unsaturated sterols drives oligodendrocyte formation and remyelination**
D. Adams (Cleveland, US)

P1779   **Worsening symptoms in secondary progressive multiple sclerosis is linked to increased eomes+ Th cells**
B. Raveney (Kodaira, Tokyo, JP)

P1780   **Interim data from the Hungarian Fingolimod Registry (CFTY720DHU01)**
K. Bencsik (Szeged, HU)

P1781   **Vitamin D supplementation in multiple sclerosis: primary efficacy endpoint and safety of a randomized, controlled, double-blind phase II trial (EVIDIMS)**
P. Koduah (Berlin, DE)

P1782   **Markers of oxidative stress – correlation with vitamin D3 and smoking in multiple sclerosis (MS) patients**
D. Obradovic (Belgrade, RS)

P1783   **Combined triaxial accelerometeric sensors and ultrasonography-guided botulinum toxin type-A injection can improve outcome in upper extremities tremor in multiple sclerosis**
H. Shehata (Cairo, EG)

P1784   **Black race is an independent risk factor for disability in neuromyelitis optica spectrum disorder**
L. Amezcua (Los Angeles, US)

P1785   **A multiple sclerosis CD4+ T cell methylation quantitative trait loci (meQTL) reference map: a novel data resource identifies the proximal and distal functional consequences of 19 MS susceptibility loci**
P. De Jager (New York, US)

P1786   **The absorption and activity of a novel form of biotin, JDS-MB-001, in a hippocampal demyelination animal model**
J. Komorowski (Purchase, US)

P1787   **Investigating brain plasticity underlying the early stages of functional recovery in MS**
E. Patitucci (Cardiff, UK)

P1788   **GlucoCEST MRI of blood brain barrier disruption in multiple sclerosis – first human experiments and initial results**
X. Xu (Baltimore, US)

	P1789	**Identification of pathogenic antibodies that may trigger inflammatory-thrombotic mechanisms in multiple sclerosis**
		M. Hadjiagapiou (Nicosia, CY)

	P1790	**Expansion of Tregs mediates Murine (m) aCD52 mAb suppression of experimental autoimmune encephalomyelitis (EAE)**
		N. Kiapoor (Chapel Hill, US)

	P1791	**Plasma-borne extracellular vesicles in multiple sclerosis - where did they come from?**
		K. Groen (Callaghan, AU)

	P1792	**High concentrations of endothelin-1 in the cerebrospinal fluid can predict poor visual recovery from optic neuritis in patients with multiple sclerosis: results from a pilot study**
		M. Castellazzi (Ferrara, IT)

	P1794	**Neuro-inflammation Down Under: clinical characteristics of an Australian cohort of autoimmune encephalitides**
		R. Wesselingh (Melbourne, AU)

	P1795	**Double cohort study observed neuropreservation in retinal layers over 5 years after alemtuzumab treatment in relapsing-remitting multiple sclerosis patients**
		J.K. Chan (Vancouver, CA)

	P1796	**Machine learning outperforms linear regression for predicting disability progression in SPMS**
		M.T.K. Law (Vancouver, CA)

12:15 - 12:25	P1797	**Results from a phase II proof of concept trial of VSN16R to treat multiple sclerosis related spasticity**
		R. Farrell (London, UK)

Satellite Symposium, Hall A

13:00 - 14:00   **Satellite Symposium 11: Switching MS treatments: patient trajectory, prior response and real world evidence to inform decision-making**

Supported by Sanofi Genzyme

Chairs
P.K. Coyle (Stony Brook, US)

13:00 - 13:05	311	**Welcome and introduction**
		P.K. Coyle (Stony Brook, US)

13:05 - 13:30	312	**Informing switch decisions: evaluating patient trajectory and defining optimal treatment response**
		G. Comi (Milan, IT)

13:30 - 13:55	313	**Informed switch decisions: clinical trial and real-world evidence**
		T. Ziemssen (Dresden, DE)

13:55 - 14:00	314	**Closing remarks**
		P.K. Coyle (Stony Brook, US)

Satellite Symposium, Hall B

13:00 - 14:00 **Satellite Symposium 12: Data • Analysis • Technology • Application making it real**

Suppoted by Biogen

Chairs
X. Montalban (Toronto, CA)

13:00 - 13:10	315	**Clinical decisions: from clinical trials to the real world**
		X. Montalban (Toronto, CA)

13:10 - 13:25	316	**Indirect comparisons with real world data: from data to evidence**
		M.P. Sormani (Genoa, IT)

13:25 - 13:55	317	**MRI quantification in MS PATHS: from 'proof-of-concept' to 'point-of-care'**
		B. Tackenberg (Marburg, DE)
		H.H. Kitzler (Dresden, DE)

13:55 - 14:00	319	**Closing remarks**
		X. Montalban (Toronto, CA)

Scientific Session, Hall A

14:15 - 15:30 **Scientific Session 17: Late Breaking News**

Chairs
L. Leocani (Milan, IT)
C. Farina (Milan, IT)

14:15 - 14:27	320	**Absence of Epstein-Barr virus seronegativity in a large cohort of patients with early multiple sclerosis**
		K. Ruprecht (Berlin, DE)

14:27 - 14:39	321	**Vitamin D, smoking, EBV and long-term cognitive performance among CIS patients: 11-year follow-up of BENEFIT**
		M. Cortese (Boston, US)

14:39 - 14:51	322	**Primary analysis of a randomised, placebo-controlled, phase 2 study of the Bruton's tyrosine kinase inhibitor evobrutinib (M2951) in patients with relapsing multiple sclerosis**
		X. Montalban (Toronto, CA)

14:51 - 15:03	323	**A double-blind placebo-controlled study of satralizumab (SA237), a recycling anti-IL-6 receptor monoclonal antibody, as add-on therapy for neuromyelitis optica spectrum disorder (NMOSD)**
		T. Yamamura (Tokyo, JP)

15:03 - 15:15	324	**MS-SMART Trial: a multi-arm phase 2b randomised, double blind, parallel group, placebo-controlled clinical trial comparing the efficacy of three neuroprotective drugs in secondary progressive multiple sclerosis [NCT01910259]**
		J. Chataway (London, UK)

Plenary Session, Hall A

16:00 - 18:00		**Plenary Session 2 - ECTRIMS Awards, ECTRIMS Honorary Members, Confavreux Lecture and ECTRIMS 2018 Highlights**

Chairs

R. Hohlfeld (Munich, DE)
B. Hemmer (Munich, DE)

16:00 - 16:45	325	**Presentation of selected poster awards, awards for best oral presentations by young researchers, the MSIF award as well announcement of ECTRIMS Honorary Members**

16:45 - 17:15	326	**Neurobiology of multiple sclerosis: from basic science to clinical translation**
		C. Lubetzki (Paris, FR)

17:15 - 17:35	327	**Clinical highlights**
		J. Palace (Oxford, UK)
		M. Stangel (Hannover, DE)

17:35 - 17:55	328	**Scientific highlights**
		S. Zamvil (San Francisco, US)
		L. Klotz (Münster, DE)

17:55 - 18:00	329	**Welcome to Stockholm**
		J. Hillert (Stockholm, SE)