



Curriculum vitae Hanne Flinstad Harbo

Personal information:

Name: Hanne-C. Flinstad Harbo (MD, PhD, MHA) (female, born 1963)
 Position/address: 1. *Professor of Neurology*, Institute of Clinical Medicine, University of Oslo (UiO), 0318 Oslo, Norway
 2. *Deputy Head*, Institute of Clinical Medicine, Faculty of Medicine, UiO
 3. *Senior consultant in Clinical Neurology and MS research group leader*, Department of Neurology, Oslo University Hospital (OUH), Rikshospitalet
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Education:

June 2015 Master of Health Administration (MHA), UiO
 2012 and 2013 Research leader program at Univ. of Cal. San Francisco (2012) and UiO
 March 17 2009 Pedagogic Competence Course, UiO, Norway
 May 27 2003 Dr. med. (PhD), UiO. "Thesis title: "Genome wide screen and candidate gene search in multiple sclerosis". Supervisor: Professor Anne Spurkland
 Nov 18 1997 Specialist in Clinical Neurology, Norway
 Jan 17 1990 Medical authorisation (MD), Norway
 June 16 1988 Cand. med. (Master of Medical Sciences), UiO

Previous positions or engagements:

Jul 2011-Jul 2012 Visiting professor, Department of Neurology, University of California San Francisco (UCSF), USA (Head: Professor S. Hauser)
 Sept-Dec 2009 Associate professor, Department of Neurology, UiO
 2003- 2010 Senior researcher, UiO (50-80% position)
 2003- today Senior consultant of Neurology, OUH, Ullevål (20-100 % position)
 Jan-Jul 2001 Guest researcher, Univ. of Cambridge, UK (Head: Professor A. Compston)
 1997-2003 PhD student, Institute of Immunology National Hospital, Oslo
 1990-1997 MD in neurology training; Rikshospitalet, Molde Fylkessjukehus, Harstad
 1988-1990 Internship Molde Fylkessjukehus and Midsund County, Norway

Norwegian networks and collaborations:

2011-14 Consortium leader of Neuroscience Research Unit and Neurogenetic Laboratory, OUH (approx. 50 members)
 2003- Research group leader Multiple Sclerosis Research Group at OUH/UiO, Oslo, Norway (15 members, <http://ous-research.no/home/harbo> and <http://www.med.uio.no/klinmed/forskning/grupper/multippel-sklerose/index.html>)
 2003-14 Biobank consultant, Norwegian MS Registry and biobank

International networks and collaborations:

2017- WP leader EU Horizon 2020 projet "MultipleMS"
 2016- WP leader Biotek 2021 project "Sys4MS"
 2013- Member of Governance Group of "International MS Genetics Consortium" , convenor from 2017
 2007- Norwegian Principle Investigator (PI) in "International MS Genetics Consortium" (IMSGC) (approx. 100 members)
 2003- Norwegian PI in "Myasthenia Gravis Genetics Consortium", approx. 20 members
 2003- Norwegian PI in "Nordic MS Genetics Network" (Hillert, Olsson, , Oturai, Saarla))
 2001-03 Leading representative from Norway in "Genetic Association of MS in Europeans"

Scientific boards and review panels:

- 2014-2017 Leader of Norwegian Brain Council
- 2013-2017 National delegate to ECTRIMS council, candidate or executive board Sept. 2016
- 2013 Steering committee member of the Norwegian Brain Council
- 2012 Reviewer ANR (Agence Nationale de la Recherche), INSERM, France
- 2008-09 Member evaluation committee, INSERM, France
- 2006-09 Leader of EFNS Scientist Panel of Neurogenetics
- 2007-09 National coordinator of Course Committee, Norwegian Federation for Neurology
- 2003-11 Leader of 11 course committees for education in Clinical Neurology, Norway (MS, demyelination diseases, neurogenetics, research approaches)

Review work for scientific journals: Nature Genetics Reviews, Annals of Neurology; Neurology; Brain; J Neuroimmunol.; J Human Genet; European Journal of Neurology; Genes and Immunity, Scandinavian J Neurol; Journal of Norwegian Medical Association

Review work for scientific boards: European Association of Neurological Societies; Agence National de la Recherche France; Isaac Newton Trust, UK.; University of Leuven, Belgium; International Society of Neuroimmunology, ECTRIMS

Oppositions, evaluation committee leader for PhD theses, evaluation committee for professorships: Sept 2008 (PhD Bergen), Nov 2010 (PhD Trondheim), Jan 2013 (PhD Oslo), June 2013 (PhD Oslo), December 2013 (PhD Oslo), April 2014 (Professor Oslo), June 2016 (Professor Oslo), November 2016 (Professor Finland), February 2017 (professor Sweden), Acting Dean at >15 PhD defences

Supervision experience: Supervisor of 3 Postdocs (PD, Main supervisor for 5 PhD degrees, UiO, Co-supervisor (i.e. leader of sub-projects) for 6 PhD degrees, UiO, Supervisor of 10 master thesis (medicine)

Recent successful grants

- (RCN= Research Council of Norway NHASE= Norwegian Health Authorities SE)
- 2017-2021 Norwegian PI and work package leader EU project "Multiple MS" (Horizon 2020)
- 2016-2019 Norwegian PI in EU project "Sys4MS" (Biotek 2021)
- 2015-2018 "Identification of molecular mechanisms and biomarkers of MS" RCN, 1PhD, 2PD
- 2010-2014 "Clinical and molecular characterization of MS", RCN, 1PhD, 1PD, 1 technician,
- 2010-2014 "Functional characterization of MS associated genes", NHASE, 1 PhD
- 2011-2014 "Genetic risk factors and MRI and clinical outcome in MS", NHASE, 1 PhD
- 2012-2015 "Molecular characterization of MS associated genes", NHASE, 1 PD
- 2012-2015 "Biostatistical analysis of genetic data in Multiple Sclerosis", UiO, 1 PhD
- 2013-2016 "Immunogenetic loci characterization of MS", NHASE 1 PhD

Research vision: The Multiple Sclerosis (MS) research group at OUH/UiO aims to identify characteristics and susceptibility factors of MS and to contribute to a better understanding of the disease and development of better treatments. Our strategy is to perform genetic, molecular, cellular, MRI and clinical translational studies of MS, in collaboration with national and international research partners and world-spanning networks

Most prominent research prizes and evaluations

- 2014 Health South East Norway researcher
- 2014 Coordinator Second stage EU Horizon 2020
- 2012 Finalist KG Jebsen Fund 2012, Norway
- 2008, 2009 European Federation of Neurological Societies Scientific Awards
- 2006 Monrad-Krohn's prize for Excellent Neuroscience Research

Total publications: <http://www.ncbi.nlm.nih.gov/> : *total publications 123 per January 1st 2018*

Publication list Hanne F Harbo

Key papers selected among 124 papers listed and numbered as they appear in Pubmed

1. Sowa P, Harbo HF, White NS, Celius EG, Bartsch H, Berg-Hansen P, Moen SM, Bjørnerud A, Westlye LT, Andreassen OA, Dale AM, Beyer MK. Restriction spectrum imaging of white matter and its relation to neurological disability in multiple sclerosis. *Mult Scler*. 2018 Mar 1;1352458518765671. doi: 10.1177/1352458518765671.
2. Olafsson S, Stridh P, Bos SD, Ingason A, Euesden J, Sulem P, Thorleifsson G, Gustafsson O, Johannesson A, Geirsson AJ, Thorsson AV, Sigurgeirsson B, Ludviksson BR, Olafsson E, Kristjansdottir H, Jonasson JG, Olafsson JH, Orvar KB, Benediktsson R, Bjarnason R, Kristjansdottir S, Gislason T, Valdimarsson T, Mikaelsdottir E, Sigurdsson S, Jonsson S, Rafnar T, Aarsland D, Djurovic S, Fladby T, Knudsen GP, Celius EG, Myhr KM, Grondal G, Steinsson K, Valdimarsson H, Bjornsson S, Bjornsdottir US, Bjornsson ES, Nilsson B, Andreassen OA, Alfredsson L, Hillert J, Kockum IS, Masson G, Thorsteinsdottir U, Gudbjartsson DF, Stefansson H, Hjaltason H, Harbo HF, Olsson T, Jonsdottir I, Stefansson . Fourteen sequence variants that associate with multiple sclerosis discovered by meta-analysis informed by genetic correlations. *NPJ Genom Med*. 2017 Aug 8;2:24. doi: 10.1038/s41525-017-0027-2
3. George MF, Briggs FB, Shao X, Gian francesco MA, Kockum I, **Harbo HF**, ...et al, Barcellos LF. Multiple sclerosis risk loci and disease severity in 7,125 individuals from 10 studies. *Neurol Genet*. 2016 Aug 4;2(4):e87.
4. Keshari PK, **Harbo HF**, Myhr KM, Aarseth JH, Bos SD, Berge T. Allelic imbalance of multiple sclerosis susceptibility genes IKZF3 and IQGAP1 in human peripheral blood. *BMC Genet*. 2016 Apr 14;17:59. -4.
5. Keshavan A, Paul F, Beyer MK, ..., **Harbo HF**,....., International Multiple Sclerosis Genetics Consortium, Hauser SL, Oksenberg JR, Henry RG. Power estimation for non-standardized multisite studies. *Neuroimage*. 2016 Jul 1;134:281-94. doi: 10.1016/j.neuroimage.2016.03.051. Epub 2016 Apr 1.
6. Bos SD, Berge T, Celius EG, **Harbo HF**. From genetic associations to functional studies in multiple sclerosis. *Eur J Neurol*. 2016 May;23(5):847-53. doi: 10.1111/ene.12981. Epub 2016 Mar 7. Review.
7. Wang Y, Bos SD, **Harbo HF**, ..., Dale AM, Andreassen OA. Genetic overlap between multiple sclerosis and several cardiovascular disease risk factors. *Mult Scler*. 2016 Feb 26.
8. Berge T, Leikfoss IS, Brorson IS, Bos SD, Page CM, Gustavsen MW, Bjølgerud A, Holmøy T, Celius EG, Damoiseaux J, Smolders J, **Harbo HF**, Spurkland A. The multiple sclerosis susceptibility genes TAGAP and IL2RA are regulated by vitamin D in CD4+ T cells. *Genes Immun*. 2016 Mar;17(2):118-27.
9. Nygaard GO, de Rodez Benavent SA, **Harbo HF**, Laeng B, Sowa P, Damangir S, Bernhard Nilsen K, Etholm L, Tønnesen S, Kerty E, Drolsum L, Inge Landrø N, Celius EG. Eye and hand motor interactions with the Symbol Digit Modalities Test in early multiple sclerosis. *Mult Scler Relat Disord*. 2015 Nov;4(6):585-9.

10. Seldin MF, Alkhairy OK, Lee AT, Lamb JA, Sussman J, Pirskanen-Matell R, Piehl F, Verschuuren JJ, Kostera-Pruszczyk A, Szczudlik P, Mckee D, Maniaol AH, **Harbo HF**, Lie BA, Melms A, Garchon HJ, Willcox N, Gregersen PK, Hammarstrom L. Genome-wide Association Study of Late-Onset Myasthenia Gravis: Confirmation of TNFRSF11A, and Identification of ZBTB10 and Three Distinct HLA Associations. *Mol Med*. 2015 Oct 10.
11. Page CM, Baranzini SE, Mevik BH, Bos SD, **Harbo HF**, Andreassen BK. Assessing the Power of Exome Chips. *PLoS One*. 2015 Oct 5;10(10):e0139642.
12. Sowa P, Bjørnerud A, Nygaard GO, Damangir S, Spulber G, Celius EG, Due-Tønnessen P, **Harbo HF**, Beyer MK. Reduced perfusion in white matter lesions in multiple sclerosis. *Eur J Radiol*. 2015 Dec;84(12):2605-12.
13. Moutsianas L, Jostins L, Beecham AH, F, Haines JL, Pericak-Vance MA, Spencer CC, Stewart G, Hafler DA, Ivinson AJ, **Harbo HF**, Hauser SL, De Jager PL, Compston A, McCauley JL, Sawcer S, McVean G;International Multiple Sclerosis Genetics Consortium. Class II HLA interactions modulate genetic risk for multiple sclerosis. *Nat Genet*. 2015 Oct;47(10):1107-13.
14. Nygaard GO, Celius EG, de Rodez Benavent SA, Sowa P, Gustavsen MW, Fjell AM, Landrø NI, Walhovd KB, **Harbo HF**. A Longitudinal Study of Disability, Cognition and Gray Matter Atrophy in Early Multiple Sclerosis Patients According to Evidence of Disease Activity. *PLoS One*. 2015 Aug 17;10(8):e0135974.
15. Leikfoss IS, Keshari PK, Gustavsen MW, Bjølgerud A, Brorson IS, Celius EG, Spurkland A, Bos SD, **Harbo HF**, Berge T. Multiple Sclerosis Risk Allele in CLEC16A Acts as an Expression Quantitative Trait Locus for CLEC16A and SOCS1 in CD4+ T Cells. *PLoS One*. 2015 Jul 23;10(7):e0132957.
16. Bos SD, Page CM, Andreassen BK, Elboudwarej E, Gustavsen MW, Briggs F, Quach H, Leikfoss IS, Bjølgerud A, Berge T, **Harbo HF**, Barcellos LF. Genome-wide DNA methylation profiles indicate CD8+ T cell hypermethylation in multiple sclerosis. *PLoS One*. 2015 Mar 3;10(3):e0117403.
17. Goris A, Pauwels I, Gustavsen MW, ... B, **Harbo HF**. Genetic variants are major determinants of CSF antibody levels in multiple sclerosis. *Brain*. 2015 Mar;138(Pt 3):632-43.
18. Berg-Hansen P, Moen SM, Sandvik L, **Harbo HF**, Bakken IJ, Stoltenberg C, Celius EG. Prevalence of multiple sclerosis among immigrants in Norway. *Mult Scler*. 2015 May;21(6):695-702.
19. Gustavsen MW, Page CM, Moen SM, Bjølgerud A, Berg-Hansen P, Nygaard GO, Sandvik L, Lie BA, Celius EG, **Harbo HF**. Environmental exposures and the risk of multiple sclerosis investigated in a Norwegian case-control study. *BMC Neurol*. 2014 Oct 3;14:196.
20. Nygaard GO, Walhovd KB, Sowa P, Chepkoech JL, Bjørnerud A, Due-Tønnessen P, Landrø NI, Damangir S, Spulber G, Storsve AB, Beyer MK, Fjell AM, Celius EG, **Harbo HF**. Cortical thickness and surface area relate to specific symptoms in early relapsing-remitting multiple sclerosis. *Mult Scler*. 2015 Apr;21(4):402-14.

21. Gustavsen MW, Viken MK, Celius EG, Berge T, Mero IL, Berg-Hansen P, Aarseth JH, Myhr KM, Søndergaard HB, Sellebjerg F, Oturai AB, Hillert J, Alfredsson L, Olsson T, Kockum I, Lie BA, **Harbo HF**. Oligoclonal band phenotypes in MS differ in their HLA class II association, while specific KIR ligands at HLA class I show association to MS in general. *J Neuroimmunol*. 2014 Sep 15;274(1-2):174-9
22. Berg-Hansen P, Moen SM, **Harbo HF**, Celius EG. High prevalence and no latitude gradient of multiple sclerosis in Norway. *Mult Scler*. 2014 Nov;20(13):1780-2..
23. Andreassen OA, **Harbo HF**, Wang Y, ...; PsychiatricGenomics Consortium (PGC) Bipolar Disorder and Schizophrenia Work Groups; International Multiple Sclerosis Genetics Consortium (IMSGC), McEvoy LK, Desikan RS, Lie BA, Djurovic S, Dale AM. Genetic pleiotropy between multiple sclerosis and schizophrenia but not bipolar disorder: differential involvement of immune-related gene loci. *Mol Psychiatry*. 2015 Feb;20(2):207-14.
24. **Harbo HF**, Isobe N, Berg-Hansen P, Bos SD, Caillier SJ, Gustavsen MW, Mero IL, Celius EG, Hauser SL, Oksenberg JR, Gourraud PA. Oligoclonal bands and age at onset correlate with genetic risk score in multiple sclerosis. *Mult Scler*. 2014 May;20(6):660-8. doi: 10.1177/1352458513506503. Epub 2013 Oct 7. PubMed PMID: 24099750; PubMed Central PMCID: PMC4066985.
25. International Multiple Sclerosis Genetics Consortium (IMSGC), Beecham AH, Patsopoulos NA, Xifara DK, Davis MF, Kempainen A, Cotsapas C, Shah TS, Spencer C, Booth D, Goris A, Oturai A, Saarela J, Fontaine B, Hemmer B, Martin C, Zipp F, D'Alfonso S, Martinelli-Boneschi F, Taylor B, **Harbo HF**, Haines JL, Pericak-Vance MA, Ivinson AJ, Stewart G, Hafler D, Hauser SL, Compston A, McVean G, De Jager P, Sawcer SJ, McCauley JL. Analysis of immune-related loci identifies 48 new susceptibility variants for multiple sclerosis. *Nat Genet*. 2013 Nov;45(11):1353-60.
26. International Multiple Sclerosis Genetics Consortium (*including Harbo HF*). Network-based multiple sclerosis pathway analysis with GWAS data from 15,000 cases and 30,000 controls. *Am J Hum Genet*. 2013 Jun 6;92(6):854-65.
27. Gourraud PA, **Harbo HF**, Hauser SL, Baranzini SE. The genetics of multiple sclerosis: an up-to-date review. *Immunol Rev*. 2012 Jul;248(1):87-103. doi: 10.1111/j.1600-065X.2012.01134.x. Review. PubMed PMID: 22725956.
28. International Multiple Sclerosis Genetics Consortium; Wellcome Trust Case Control Consortium 2, Sawcer S, **Harbo HF**, Oksenberg JR, Pericak-Vance MA, Haines JL, Olsson T, Hillert J, Ivinson AJ, De Jager PL, Peltonen L, Stewart GJ, Hafler DA, Hauser SL, McVean G, Donnelly P, Compston A. Genetic risk and a primary role for cell-mediated immune mechanisms in multiple sclerosis. *Nature*. 2011 Aug 10;476(7359):214-9.