
SHIN CHIEN BEH, MD
Assistant Professor of Neurology & Neurotherapeutics
Multiple Sclerosis & Neuroimmunology Program
Director, Vestibular Neurology & Neuro-Visual Disorders Clinic
UT Southwestern Medical Center

PERSONAL

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EDUCATION

Medical school

<i>Year</i>	<i>Institution</i>	<i>Degree</i>
2007	Universiti Malaysia Sarawak	MD

Postgraduate education

July 2008 - June 2009	UT Southwestern Medical Center	Internship (Internal Medicine)
July 2009 - June 2012	UT Southwestern Medical Center	Neurology Residency
July 2012 – Feb 2013	UT Southwestern Medical Center	Fellowship (Neuro-immunology & Multiple Sclerosis)
Mar 2013 – Oct 2013	Johns Hopkins University Hospital School of Medicine	Fellowship (Neuro-immunology, Vestibular Neurology, Neuro-ophthalmology)
Nov 2013 – June 2014	New York University School of Medicine	Fellowship (Neuro-ophthalmology & Multiple Sclerosis)

BOARD CERTIFICATION and LICENSURE

2012 American Board of Psychiatry & Neurology
2013-2017 Texas Medical Board (license #P5777)

MAJOR HONORS AND AWARDS

2011	Gordon Research Conference on Eye Movements Travel Fellowship Award
2012	Biogen Idec Multiple Sclerosis Clinical Fellowship Award
2012	AAN Annual Meeting Resident Research Travel Scholarship
2012	Resident Teaching Award
2012	Fred Baskin Young Investigator Award
2012	Victor Rivera/Leon Weisberg Research Manuscript Award (1st place)
2013	AAN Annual Meeting Fellow Research Travel Scholarship
2015	European Committee for Treatment & Research in Multiple Sclerosis (ECTRIMS) 2015 Travel Grant

ACADEMIC APPOINTMENTS

<i>Year(s)</i>	<i>Institution, Title</i>
Sept 2014 - current	Assistant Professor of Neurology & Neurotherapeutics, UT Southwestern Medical Center

ADMINISTRATIVE RESPONSIBILITIES, COMMITTEES and SERVICE

Department

<i>Year(s)</i>	<i>Activity</i>
Sept 2014 - current	Director, Vestibular Neurology & Neuro-Visual Disorders Clinic UT Southwestern Medical Center

CLINICAL ACTIVITIES

Clinical practice and past clinical contributions

September 2014 - current	Multiple Sclerosis & Neuroimmunology Clinic, UT Southwestern Medical Center Established and currently directs the Vestibular Neurology & Neuro-Visual Disorders Clinic at UT Southwestern Medical Center
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EDUCATIONAL ACTIVITIES and RESPONSIBILITIES

2011 – 2012	<i>Neuro-ophthalmology of Multiple Sclerosis</i> lecture for the National Multiple Sclerosis Society Preceptorship Program for Physicians, Physician Assistants, Nurse Practitioners and Nurses.
2012	<i>Approach to the Dizzy Patient in the ER</i> lecture for UTSW neurology residents.
2012	<i>Introduction to Neuro-ophthalmology</i> lecture for UTSW neurology residents.
2012	<i>Multiple Sclerosis, Clinical Approach to Diplopia, and Clinical Approach to Vertigo</i> Medical Student Neurology Clerkship lecture series.
2013	<i>Disorders of Higher Visual Function</i> lecture for NYU Neurology Residents
2014 – current	<i>Multiple Sclerosis, Neuroimmunology & Neuro-ophthalmology</i> Medical Student Neurology Clerkship lecture series

Students, Residents, Fellows Mentored

<i>Years</i>	<i>Name</i>	<i>Position</i>	<i>Role</i>	<i>Position upon completion</i>
2014	Marlen Lucero	Research Intern	Research Mentor	Physician Assistant school in 05/2015

PROFESSIONAL SOCIETIES

American Academy of Neurology
 North American Neuro-Ophthalmology Society
 Texas Neurological Society

EDITORIAL RESPONSIBILITIES

2012 - current Reviewer for:
 Journal of Neurology, Neurosurgery & Psychiatry
 JAMA Neurology
 American Journal of Case Reports
 British Medical Journal (BMJ) Case Reports
 Therapeutic Advances in Neurological Disorders
 The Neurologist
 Neurodegenerative Disease Management

INVITED LECTURES

Date	Site/Institution	Topic/Title
2013	Richardson ISD Nurse CE Program (Medical Center of Plano)	Multiple Sclerosis for the School Nurse
05/20/13	Johns Hopkins University Hospital (Special Clinical Neuroimmunology Lecture)	The Optic Nerve Head Component: an electrophysiologic bio-marker for MS-related optic neuropathy
05/21/13	New York University School of Medicine (Grand Rounds)	The Optic Nerve Head Component: a novel bio-marker for optic neuropathy in MS
02/11/15	UT Southwestern Medical Center (Grand Rounds)	The Dizzy-phobic Neurologist's Brief Guide to Dizziness
04/10/15	UT Southwestern Medical Center 5 th Annual Brain Awareness Week	Eye Caramba! Cases of Neurological Visual Disorders
06/26/15	UT Southwestern Neurology Resident	Vestibular Exam – simulation for

	Boot Camp	assessing vertigo and dizziness
11/14/15	UT Southwestern Neurology & Neurotherapeutics Update 2015	Dizziness & Vertigo
02/15/16	UT Southwestern APP Lecture Series	The APP's Brief Guide to Dizziness

BIBLIOGRAPHY

Peer Reviewed Reports

1. **Beh SC**, Frohman EM. WEBINO and the Return of the King's Speech. *J Neurol Sci* 2012;315(1-2):153-155
2. **Beh SC**, Vernino S, Warnack WR. Clinical Reasoning: A 41-year-old comatose man with absent brainstem reflexes. *Neurology* 2012;78(7):e42-5 (with accompanying AAN podcast)
3. **Beh SC**, Nations S, Pascual J, Vernino S. Ataxia and weakness in a young woman. *Arch Neurol* 2012;69(7):924-927
4. Frohman AR, Schnurman Z, Conger A, Conger D, **Beh S**, Greenberg B, Sutter E, Calabresi PA, Balcer LJ, Frohman TC, Frohman EM. Multifocal Visual Evoked Potentials Are Influenced by Variable Contrast Stimulation in MS. *Neurology* 2012;79(8):797-801
5. Blazek P, Davis SL, Greenberg BM, Conger A, Conger D, Vernino S, **Beh S**, Stuve O, Saidha S, Ratchford JN, Frohman T, Calabresi PA, Balcer LJ, and Frohman EM. Objective Characterization of the Relative Afferent Pupillary Defect in MS. *J Neurol Sci* 2012;323(1-2):193-200
6. **Beh SC**, Greenberg BM, Frohman TC, Frohman EM. Transverse myelitis. *Neurol Clin* 2013;31:79-138
7. Frohman TC, Davis SL, **Beh S**, Greenberg BM, Remington G, Frohman EM. Uhthoff's phenomena in MS – clinical features and pathophysiology. *Nat Rev Neurol* 2013;9:535-540
8. Frohman TC, **Beh SC**, Saidha S, Schnurman Z, Conger D, Conger A, Ratchford JN, Lopez C, Galetta SL, Calabresi PA, Balcer LJ, Green AJ, Frohman EM. Optic nerve head component responses of the multifocal electroretinogram in MS. *Neurology* 2013;81:1-7
9. **Beh SC**, Frohman TC, Frohman EM. Isolated mammillary body involvement on MRI in Wernicke's Encephalopathy. *J Neurol Sci* 2013;334:172-175
10. **Beh SC**, Frohman EM. The menagerie of neurology: animal signs and the refinement of clinical acumen. *Neurol Clin Pract* 2013 doi: 10.1212/01.CPJ.0000437693.10265.a2
11. **Beh SC**, Tehrani AS, Kheradmand A, Zee DS. Damping of monocular pendular nystagmus with vibration in a patient with multiple sclerosis. *Neurology* 2014;82:1380-1381
12. Schnurman Z, Frohman TC, **Beh SC**, Conger D, Conger A, Saidha S, Galetta S, Calabresi PA, Green AJ, Balcer LJ, Frohman EM. Retinal architecture and mfERG optic nerve head component response characteristics in MS. *Neurology* 2014;82:1888-1896

13. **Beh SC**, Muthusamy B, Calabresi PA, Hart J, Zee D, Patel V, Frohman EM. Hiding in plain sight: shining a spotlight on posterior cortical atrophy. *Pract Neurol* 2015;15(1):5-13
14. Qureshi SS, **Beh SC**, Frohman TC, Frohman EM. An Update On Neuro-ophthalmology Of Multiple Sclerosis (MS): The Visual System As A Model To Study MS. *Current Opinion in Neurology* 2014;27:300-308
15. **Beh SC**, Frohman TC, Frohman EM. Neuro-ophthalmic manifestations of cerebellar disease. 2014;32:1009-80
16. Clough M, Millist L, Lizak N, **Beh S**, Frohman TC, Frohman EM, White O, Fielding J. Ocular motor measures of cognitive dysfunction in multiple sclerosis I: Inhibitory control. *J Neurol* 2015;262:1130-1137
17. Clough M, Millist L, Lizak N, **Beh S**, Frohman TC, Frohman EM, White O, Fielding J. Ocular motor measures of cognitive dysfunction in multiple sclerosis II: Working memory. *J Neurol* 2015;262:1138-1147
18. Frohman A, Okuda D, Scott D, **Beh S**, Treadaway K, Mooi C, Shah A, Frohman T, Frohman E. Aquatic Training in MS: Neurotherapeutic Impact on Quality of Life. *Ann Clin Transl Neurol* 2015;2:864-872
19. **Beh SC**. Review of Eye Movement Disorders in Clinical Practice. *JAMA Neurol* 2015;72:1380
20. Fielding J, Clough M, **Beh S**, Millist L, Sears D, Frohman AN, Lizak N, Lim J, Kolbe S, Rennaker RL 2nd, Frohman TC, White OB, Frohman EM. Ocular motor signatures of cognitive dysfunction in multiple sclerosis. *Nat Rev Neurol* 2015;11:637-645
21. Beh SC, Frohman TC, Zee D, Frohman EM. Cerebellar control of eye movements. Invited review for the *Journal of Neuro-Ophthalmology*. In preparation.
22. Nolan R, Narayana K, **Beh SC**, Balcer LJ, Galetta SL. The utility of optical coherence tomography (OCT) in acute monocular visual loss: is it optic nerve or retina? Submitted for review to *Neurology Clinical Practice*.

Invited Reviews and Chapters

1. **Beh SC**, Frohman TC, Conger A, Conger D, Sutter EE, Frohman EM. Chapter 8: Electrophysiology of the Optic Nerve Head. In: *Optical Coherence Tomography in Neurological Disease*. 1st ed. Cambridge University Press, Cambridge; 2015
2. **Beh SC**, Balcer LJ. Chapter 6: OCT and Low-Contrast Acuity. In: *Optical Coherence Tomography in Neurological Disease*. 1st ed. Cambridge University Press, Cambridge; 2015
3. **Beh SC**, Frohman TC, Frohman EM. Neuro-ophthalmic manifestations of multiple sclerosis. In: *Primer on Multiple Sclerosis*. Oxford University Press. In press.
4. **Beh SC**, Frohman TC, Frohman EM. Monitoring Treatment in Multiple Sclerosis. In: *Optical Coherence Tomography in Multiple Sclerosis – Clinical Applications*. Springer International Publishing. In press.
5. **Beh SC**, Frohman TC, Frohman EM. Neuromyelitis Optica: Immunopathogenesis, Clinical Manifestations, and Treatments. Invited review for: *Inflammatory Disorders of the Nervous System: pathogenesis, immunology, and clinical management*. Springer International Publishing. Under preparation.

Abstracts

1. **Beh SC**, Vernino S. *The Atrophic Hands*. Presented at the 33rd Annual Carrell-Krusen Neuromuscular Symposium in 2011.
2. **Beh SC**, Frohman EM. *WEBINO and re-emergent developmental stuttering: a case report*. Presented at the Gordon Research Conference on Eye Movements, 2011.
3. **Beh SC**, Karunapuzha C, Chitnis S. *Co-existing HTT and ATXN8OS repeat expansions and a 'face of the giant panda' sign on MRI in a patient with a complex movement disorder*. Presented at the American Neurological Association (ANA) 136th Annual Meeting, 2011.
4. **Beh SC**, Schnurman Z, Frohman TC, Conger A, Conger D, Sutter E, Balcer L, Calabresi P, Frohman EM. *The Optic Nerve Head Component: A Novel Electrophysiologic Marker of Optic Neuropathy in MS and Neuromyelitis Optica*. Platform (S48.001) presentation at the 64th AAN Annual Meeting 2012.
5. Conger A, Conger D, Frohman T, **Beh S**, Greenberg B, Balcer L, Calabresi P, Frohman EM. *Assessment of multiple sclerosis patients with a known history of unilateral optic neuritis shows optic nerve head component loss in fellow unaffected eye*. Platform (S58.004) presentation at the 64th AAN Annual Meeting 2012.
6. Frohman T, Schnurman Z, **Beh S**, Sutter E, Conger A, Conger D, Saidha S, Calabresi P, Balcer L, Frohman EM. *The optic nerve head component of the multifocal electroretinogram: a novel metric for dissecting pathophysiologic mechanisms in MS*. Platform (S10.001) presentation at the 64th AAN Annual Meeting 2012.
7. Conger D, Conger A, Frohman T, Balcer L, Calabresi P, **Beh S**, Greenberg B, Frohman EM. *Deriving clinically useful visual evoked potential measurements from 120 sector multifocal visual evoked potential sequences*. Poster (P07.259) presentation at the 64th AAN Annual Meeting 2012.
8. Graves DC, Frohman TC, Schurmann Z, Conger D, Conger A, **Beh SC**, Greenberg B, Saidha S, Ratchford J, Galetta SL, Calabresi PA, Green AJ, Balcer LJ, Frohman EM. *The optic nerve head component of the multifocal electroretinogram: a novel signature for dissecting pathophysiologic mechanisms in MS*. Presented at the European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) Medical Congress 2012.
9. Frohman TC, Schnurmann Z, **Beh S**, Conger A, Conger D, Calabresi P, Balcer L, Green A, Frohman EM. *Optic Nerve Head Component of the Multifocal Electroretinogram in MS Optic Neuropathy: A Pathophysiologic Signature of Translaminar Demyelination*. Poster (P05.174) presentation at the 65th AAN Annual Meeting 2013.
10. **Beh SC**, Conger D, Conger A, Frohman TC, Green A, Calabresi PA, L Balcer LJ, Frohman EM. *The Optic Nerve Head Component Waveform: "Eye-ing" Disease Activity in MS-related Optic Neuropathy*. Presented at the Keystone Symposia Multiple Sclerosis Conference 2013.
11. **Beh SC**, Frohman EM. *A Tour through the Zoo of Neurology: Animal Eponyms and the Refinement of Clinical Acumen*. Poster (P05.263) presentation at the AAN 2013 Annual Conference.
12. Conger D, Conger A, **Beh S**, Frohman T, Frohman E. *Comparison of two different visually evoked potential tests in a group of multiple sclerosis patients and controls: 2 repetitions per second and the m-sequence*. Presented at the ECTRIMS Medical Congress 2013.

13. Conger A, Conger D, Meltzer E, Sguigna P, **Beh S**, Frohman T, Frohman EM. *Assessing functional damage of the retinal ganglion cell layer in patients with multiple sclerosis using two novel methods: photopic negative responses in electroretinography and multi-chromatic infrared pupillometry*. Presented at the ECTRIMS Medical Congress 2013.
14. Sguigna P, Meltzer E, Lucero M, Lucero M, Conger D, Conger A, Stokes V, Green A, **Beh S**, Rennaker R, Balcer L, Calabresi PA, Frohman TC, Kardon R, Frohman EM. *The melanopsin mediated pupillary light reflex as a surrogate signature biomarker for the retinohypothalamic tract in MS*. Presented at the ECTRIMS Medical Congress 2013.
15. **Beh SC**, Kheradmand A, Frohman TC, Conger A, Conger D, Calabresi P, Balcer L, Frohman EF, Zee DS. *Damping of Monocular Pendular Nystagmus with Vibration*. Presented at the 2014 Annual Meeting of the North American Neuro-Ophthalmology Society (NANOS).
16. Conger D, Lucero M, Lucero M, Conger A, **Beh SC**, Frohman B, Balcer L, Calabresi PA, Frohman EM, Frohman TC. *Comparing the classic 2 repetitions per second (2 RPS) visually evoked potential with a new metric using the standard 60-second arc check size driven by a binary m-sequence in a group of multiple sclerosis patients and controls*. Presented at the 2014 NANOS Annual Meeting.
17. **Beh SC**, Frohman TC, Conger A, Conger D, Calabresi P, Balcer L, Zee DS, Frohman EM. *NAIL-ing the Diagnosis: Real Neurologists Pay Attention to the Nails*. Poster (P1.030) presentation at the AAN 2014 Annual Conference.
18. **Beh SC**, Frohman TC, Conger A, Conger D, Calabresi P, Balcer L, Zee DS, Frohman EM. *Food for Thought: A Serving of Food-Inspired Eponyms in Neurologic Practice*. Poster (P1.296) presentation at the AAN 2014 Annual Conference.
19. Herbert J, Ryerson LZ, Tornatore C, Foley J, Weinstock-Guttman B, Kister I, Padney K, Remington G, Frohman T, Major E, Qureshi S, **Beh S**, Okuda D, Utomo P, Kolb C, Hojnacki D, Frohman E. *Multicenter retrospective study of extended dosing of natalizumab in multiple sclerosis: a strategy for mitigating risk of progressive multifocal leukoencephalopathy while maintaining efficacy?* Poster (P2.251) presentation at the AAN 2014 Annual Conference.
20. **Beh SC**, Kheradmand A, Frohman TC, Conger A, Conger D, Calabresi P, Balcer L, Frohman EF, Zee DS. *Good Vibrations: A Novel Method of Damping Acquired Pendular Nystagmus with Vibration*. Platform presentation (S19.001) at the AAN 2014 Annual Conference.
21. Ryerson LZ, Herbert J, Tornatore C, Foley J, Weinstock-Guttman B, Kister I, Pandey K, Hojnacki D, Remington G, Frohman TC, Major E, Douek D, Qureshi S, **Beh S**, Okuda D, Utomo P, Rimler Z, Park J, Yoo S, Hoyt T, Chamot E, Bucello M, Kolb C, Frohman E. *Efficacy of natalizumab extended dosing in multiple sclerosis: a retrospective multicenter analysis*. Poster presentation at the joint ACTRIMS/ECTRIMS meeting 2014.
22. Nolan R, Kannan N, **Beh SC**, Galetta SL. *The utility of optical coherence tomography in acute monocular visual loss: is it optic nerve or retina?* Poster presentation at the joint ACTRIMS/ECTRIMS meeting 2014.
23. **Beh SC**, Conger D, Conger A, Sobhanian M, Calabresi PA, Balcer LJ, White O, Frohman T, Frohman EM. *The Optic Nerve Head Component waveforms: characteristics in normal humans and disruption in multiple sclerosis*. Poster presentation at the European Charcot Foundation 2015 Annual Meeting.
24. Sobhanian MJ, Agarwal R, Conger D, Conger A, Calabresi P, Balcer LJ, Rennaker R, **Beh SC**, White O, Kardon R, Frohman T, Frohman EM. *The Pulfrich phenomenon: an objective signature biomarker of MS pathophysiology*. Poster presentation at the European Charcot Foundation 2015 Annual Meeting.

25. Lucero M, Conger A, Conger D, Sobhanian M, Stokes V, Frohman TC, White O, Balcer LJ, Calabresi PA, Rennaker R, Frohman EM, **Beh SC**. Retinal vessel oximetry and vessel diameter measurements: a novel metabolic marker of multiple sclerosis. Poster presentation at the North American Neuro-Ophthalmology (NANOS) 2015 Annual Meeting.
26. Sobhanian MJ, Agarwal R, Conger D, Conger A, Balcer LJ, Rennaker R, **Beh SC**, White O, Kardon R, Frohman T, Frohman EM. The Pulfrich phenomenon: an objective signature biomarker of MS visual system pathophysiology. Poster presentation at the North American Neuro-Ophthalmology (NANOS) 2015 Annual Meeting.
27. Lucero M, Conger A, Conger D, Sobhanian M, Stokes V, Frohman TC, White O, Balcer LJ, Calabresi PA, Rennaker R, Frohman EM, **Beh SC**. Retinal Oximetry-Derived Biomarkers of Metabolic Dysfunction in MS. Poster presentation at the American Academy of Neurology (AAN) 2015 Annual Meeting.
28. Sobhanian MJ, Agarwal, R, Conger D, Conger A, Calabresi P, Balcer LJ, Rennaker R, **Beh SC**, White O, Kardon R, Frohman T, Frohman EM. The Pulfrich phenomenon: an objective signature-biomarker of MS pathophysiology. Poster presentation at the American Academy of Neurology (AAN) 2015 Annual Meeting.
29. Agarwal R, Sobhanian MJ, Conger D, Conger A, Balcer LJ, White O, Frohman T, Ooi J, **Beh SC**, Rennaker RL, Frohman EM. The Pulfrich Phenomenon: a signature of visual system pathophysiology in multiple sclerosis. Poster presentation at the ECTRIMS 2015 Annual Congress.
30. **Beh SC**, Remington G, Qureshi S, Hardeman P, Naryannan R, Frohman TC, Greenberg B, Frohman EM. High-dose intravenous methotrexate (HDMTX) with leucovorin rescue (LR) for the treatment of acute inflammatory demyelinating central nervous system (CNS) syndromes. Poster presentation at the ECTRIMS 2015 Annual Congress.
31. **Beh SC**, Lucero M, Conger A, Conger D, Stokes V, Frohman TC, Calabresi PA, Rennaker RL 2nd, Balcer LJ, Frohman EM. Retinal Oximetry: A Novel Visual Biomarker of Retinal Metabolic Dysfunction in MS. Poster presentation at the ECTRIMS 2015 Annual Congress.