

Aasef G. Shaikh, MD, PhD

Education and Training:

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Cleveland Clinic, Cleveland, OH	Fellow	06/'15	Movement disorders (DBS emphasis)
Emory University, Atlanta, GA	Fellow	06/'14	Movement disorders
Case Western Reserve University, Cleveland, OH	Resident	06/'13	Neurology (board certified)
The Johns Hopkins University, Baltimore, MD	Fellow	06/'09	Neurotology/eye movements
Washington University, St.Louis, MO	Fellow	10/'05	Cerebellar neurophysiology
Wayne State University, Detroit, MI	Ph.D	12/'03	Neuroscience/Physiology
Maharaja Sayajirao University, Baroda, India	M.B.B.S.	03/'00	Medical school

A. Positions:

Current	Assistant Professor of Neurology, Case Western Reserve University, Cleveland, OH
Current	Staff Neurologist, Cleveland VA Medical Center
Current	Director, National VA Parkinson's Consortium Center at Cleveland VA Medical Center.
Current	Director, Neurological Institute, University Hospitals Samaritan Medical Center, Ashland, OH

B. Academic services:

01/2017 – present – Section Editor, The Cerebellum
 10/2017 – present – Dystonia Study Section, Discovery Mechanism, Department of Defense
 06/2018 – present – Dystonia Study Section, CDMRP Mechanism, Department of Defense
 09/2016 – Present – NIH SMI study section (R01 and R21 mechanisms) Ad Hoc Reviewer,
 07/2017 – present – Associate editor, Frontiers in Cellular Neuroscience
 12/2016 – present – Taskforce leader, The taskforce on vestibular function in cerebellar disorders and ataxia, Society for Research in Cerebellum and Ataxia.
 04/2016 – present – Associate editor, Frontiers in Neurology (neuro-ophthalmology)
 08/2010 – present – Review editor, Frontiers in Neurology (neuro-otology)

C. Awards:

- George C. Cotzias Memorial Fellowship (American Parkinson's Disease Association), June 2018.
- American Academy of Neurology Career Award – April 2018
- Grass Foundation - American Neurological Association Award in Neuroscience – October 2016.
- American Academy of Neurology Alliance Founder's award: Founders – April 2015
- Cleveland Clinic Neurological Institute clinical fellow research award – May 2015
- Best research presentation – Neurological Institute, Case Western Reserve University, March, 2013.
- Best scientific research presentation – Neurological Institute, Case Western Reserve University, April, 2012.
- International dystonia symposium award, October 2011.
- The Movement Disorders Society travel award, June 2009.
- Murrey Sachs Award –Center of Hearing and Balance, The Johns Hopkins University, November 2008.
- The Movement Disorders Society travel award, June 2007
- American Aging Society Fellowship, April, 2004.
- Neural Prosthesis Program Fellowship, NINDS/NIDCD. October, 2002.
- Barany Society/NIDCD Combined Fellowship, September 2002.
- Neural Prosthesis Program Fellowship, NINDS/NIDCD. October, 2001.
- American Society for Artificial Internal Organs Fellowship. June 2001
- Graduate Professional Scholarship, Wayne State University Graduate School, Detroit, MI. 2001-2002.

D. Grant Support

Current

- George C. Cotzias Memorial Fellowship (PI: Shaikh). (\$240,000 x 3 years - direct)
- Dystonia Medical Research Foundation – Integrated Brain Circuits in Dystonia (PI: Shaikh) (\$450,000 x 3 years - direct)
- American Academy of Neurology Career Development Award (PI: Shaikh). (\$130,000 x 2 years - direct)

Completed

- Career Development Award, Dystonia Coalition/Dystonia Medical Research Foundation (PI: Shaikh)
- Dystonia Medical Research Foundation Clinical Fellowship Grant (PI: Shaikh)
- Ataxia-telangiectasia Society (United Kingdom) Research Grant (PI: Shaikh)
- International Human Frontiers Science Program Scholarship (PI: Shaikh)
- Boehringer Ingerheim Fonds Fellowship (PI: Shaikh)
- Ataxia-Telangiectasia Children's Project Research Grant (Co-I: Shaikh, PI: Crawford)
- Gustavus and Louise Pfeiffer Research Foundation Grant (Co-I: Shaikh, PI: Zee)
- Ruth L. Kirschstein National Research Service Award (NIH F32 award), NIDCD (PI: Shaikh)

E. Contribution to science:

The theme of our research program is to apply control-systems approach to study complex movement disorders and design novel therapeutic interventions. I have a scientific background in the physiology of eye movements, a recognized motor system with well-known neurophysiology. We conceptualized that the brain might utilize common general principles for normal motor control of various body parts, and there might be limited ways for the neurological disease to disrupt motor physiology. This idea encouraged a unique direction of our clinical and basic research that merged fundamental physiological concepts of eye movements to understand common movement disorders. The endeavor led to several paradigm-shifting results. **The highlights of the key independent contributions are as follows:**

1. PHYSIOLOGY OF HUMAN MOTION PERCEPTION:

We discovered cerebellar and brainstem neurons that compute the central estimate of self-orientation. These neurons, discovered during single-unit neurophysiology experiments in alert behaving primates, project to the thalamic relay nuclei putatively having a role in motion perception. Our continued research discovered that the caudal aspect of cerebellar nodulus is responsible for the perception of angular rotation. Acute lesions of this area, for example, a cerebellar stroke affecting caudal nodulus, results in the perception of self-rotation without objective ocular motor or vestibular deficits. Our recent experiments utilizing intraoperative stimulation and deep-brain stimulation confirmed the presence of motion-perception pathway in humans. Such pathway is situated medial and then rostromedial to the subthalamic nucleus. We hypothesize that counterintuitive stimulation or inhibition of vestibulothalamic fibers will be an attractive modality to treat intractable perceptual vertigo in near future.

- **Shaikh AG**, Straumann D, Palla A. Motion Illusion-Evidence towards Human Vestibulo-Thalamic Projections. *Cerebellum*. 2017 Jun;16(3):656-663.
- **Shaikh AG**, Palla A, Marti S, Olasagasti I, Optican LM, Zee DS, Straumann D. Role of cerebellum in motion perception and vestibulo-ocular reflex-similarities and disparities. *Cerebellum*. 2013 Feb;12(1):97-107.
- **Shaikh AG**, Green AM, Ghasia FF, Newlands SD, Dickman JD, Angelaki DE. Sensory convergence solves a motion ambiguity problem. *Curr Biol*. 2005 Sep 20;15(18):1657-62.
- Angelaki DE, **Shaikh AG**, Green AM, Dickman JD. Neurons compute internal models of the physical laws of motion. *Nature*. 2004 Jul 29;430(6999):560-4.

2. VESTIBULO-OCULAR REFLEX – PHYSIOLOGY AND TRANSLATIONAL NEUROLOGY:

We made a substantial contributions in the field investigating physiology and pathophysiology of vestibulo-ocular reflex – the compensatory eye movement evoked during self-motion. We maintain an active interest in research on physiology and abnormal function of vestibulo-ocular reflex. Our recent and ongoing studies have focused on scaling of direction and amplitude of vestibulo-ocular reflex both are critical for maintaining precise gaze holding during locomotion.

- **Shaikh AG**, Solomon D. Effects of Sustained Otolith-Only Stimulation on Post-Rotational Nystagmus. *Cerebellum*. 2017 Feb 21. [Epub ahead of print]
- **Shaikh AG**, Marti S, Tarnutzer AA, Palla A, Crawford TO, Zee DS, Straumann D. Effects of 4-aminopyridine on nystagmus and vestibulo-ocular reflex in ataxia-telangiectasia. *J Neurol*. 2013 Nov;260(11):2728-35.
- **Shaikh AG**, Marti S, Tarnutzer AA, Palla A, Crawford TO, Straumann D, Carey JP, Nguyen KD, Zee DS. Ataxia telangiectasia: a "disease model" to understand the cerebellar control of vestibular reflexes. *J Neurophysiol*. 2011 Jun;105(6):3034-41.
- **Shaikh AG**, Ghasia FF, Dickman JD, Angelaki DE. Properties of cerebellar fastigial neurons during translation, rotation, and eye movements. *J Neurophysiol*. 2005 Feb;93(2):853-63.

3. PATHOPHYSIOLOGY OF EYE MOVEMENTS AND GAZE HOLDING:

Our studies made substantial contributions to the literature on saccade and gaze holding disorders. We maintain an active interest in research on physiology and abnormal function of eye movements and gaze holding. Our recent and ongoing studies have focused on opsoclonus, fixational eye movements, saccade adaptation, and acquired nystagmus – in each we have made landmark contributions in the field. These studies utilize abnormal eye movements as a tool to understand how the human brain operates. Some of the investigated conditions are prototypic disease models to study more common neurological disorders.

- **Shaikh AG**, Otero-Millan J, Kumar P, Ghasia FF. Abnormal Fixational Eye Movements in Amblyopia. *PLoS One*. 2016 Mar 1;11(3):e0149953.
- **Shaikh AG**, Ghasia FF. Misdirected horizontal saccades in pan-cerebellar atrophy. *J Neurol Sci*. 2015 Aug 15;355(1-2):125-30.
- **Shaikh AG**, Xu-Wilson M, Grill S, Zee DS. 'Staircase' square-wave jerks in early Parkinson's disease. *Br J Ophthalmol*. 2011 May;95(5):705-9.
- **Shaikh AG**, Wong AL, Optican LM, Miura K, Solomon D, Zee DS. Sustained eye closure slows saccades. *Vision Res*. 2010 Aug 6;50(17):1665-75.

4. PHYSIOLOGY OF HEAD MOVEMENTS IN CERVICAL DYSTONIA:

We suggested that one of the mechanisms for keeping the head still follows strategies similar to those for holding the eyes steady on the visual image. We applied the neural integrator hypothesis that was originally described for holding the eyes still in eccentric gaze positions to describe how the head is held still when rotated in an eccentric orientation. We found that normal humans make head movements consistent with the neural integrator hypothesis, except that additional sensory feedback is needed, from proprioceptors in the neck, to keep the head on target. We then showed that the deficits in a neural integrator for head motor control predict complicated patterns of head movements in patients with cervical dystonia. Our results delineated the controversial nature and source of the oscillatory head movements in cervical dystonia suggesting a defect in a feedback to head neural integrator.

- Sedov A, Popov V, Shabalov V, Raeva S, Jinnah HA, **Shaikh AG**. Physiology of midbrain head movement neurons in cervical dystonia. *Mov Disord*. 2017 Feb 20. [Epub ahead of print]
- **Shaikh AG**, Zee DS, Crawford JD, Jinnah HA. Cervical dystonia: a neural integrator disorder. *Brain*. 2016 Oct;139(Pt 10):2590-2599.

- **Shaikh AG**, Zee DS, Jinnah HA. Oscillatory head movements in cervical dystonia: Dystonia, Tremor, or both? *Mov Disord*. 2015 May;30(6):834-42.
- **Shaikh AG**, Wong AL, Zee DS, Jinnah HA. Keeping your head on target. *J Neurosci*. 2013 Jul 3;33(27):11281-95.

5. PHYSIOLOGY OF TREMOR:

We combined known neuroanatomy principles for the limb movement, Hodgkin-Huxley model of neuronal membrane, and physiological data collected from familial tremor patients to describe a mechanism of essential tremor. Using this approach, we answered two fundamental questions: What causes motor circuits to oscillate in disorders in which the central nervous system otherwise seems normal? How does inheritance 'determine' the clinical phenotype in familial tremor disorders? Our experiments also explained the physiological basis for the beta-blockers that are commonly used to treat essential tremor. In a different disease model of oculopalatal tremor, we discovered the role of cerebellar maladaptation due to inferior olive hypersynchrony as a cause of coarse and irregular oscillations. We proposed two interacting mechanisms to create oculopalatal tremor: an oscillator in the inferior olive and a modulator in the cerebellum. This dual-mechanism model accounted for many properties of the oculopalatal tremor and suggested drug therapies that could treat this debilitating condition.

- **Shaikh AG**. Tremor analysis separates Parkinson's disease and dopamine receptor blockers induced parkinsonism. *Neurol Sci*. 2017 Feb 22. [Epub ahead of print]
- **Shaikh AG**, Wong AL, Optican LM, Zee DS. Impaired Motor Learning in a Disorder of the Inferior Olive: Is the Cerebellum Confused? *Cerebellum*. 2017 Feb;16(1):158-167.
- **Shaikh AG**, Hong S, Liao K, Tian J, Solomon D, Zee DS, Leigh RJ, Optican LM. Oculopalatal tremor explained by a model of inferior olivary hypertrophy and cerebellar plasticity. *Brain*. 2010 Mar;133(Pt 3):923-40.
- **Shaikh AG**, Miura K, Optican LM, Ramat S, Leigh RJ, Zee DS. A new familial disease of saccadic oscillations and limb tremor provides clues to mechanisms of common tremor disorders. *Brain*. 2007 Nov;130(Pt 11):3020-31.

F. Peer-reviewed publications from PubMed (full list)

1. Rufa A, **Shaikh AG**. Editorial: Ocular Motor and Vestibular Deficits in Neurometabolic, Neurogenetic, and Neurodegenerative Diseases. *Front Neurol*. 2018 Jul 18;9:567.
2. Feldman D, Otero-Millan J, **Shaikh AG**. Gravity-Independent Upbeat Nystagmus in Syndrome of Anti-GAD Antibodies. *Cerebellum*. 2018 Aug 22.
3. **Shaikh AG**, Antoniades C, Fitzgerald J, Ghasia FF. Effects of Deep Brain Stimulation on Eye Movements and Vestibular Function. *Front Neurol*. 2018 Jun 12;9:444.
4. Kang SL, **Shaikh AG**, Ghasia FF. Vergence and Strabismus in Neurodegenerative Disorders. *Front Neurol*. 2018 May 16;9:299.
5. Rizvi MT, Cameron L, Kilbane C, **Shaikh AG**. Paraneoplastic seesaw nystagmus and opsoclonus provides evidence for hyperexcitable reciprocally innervating mesencephalic network. *J Neurol Sci*. 2018 Jul 15;390:239-245.
6. Alsinaidi O, **Shaikh AG**. Diffusion-Weighted Magnetic Resonance Imaging in Acute Retinal Pathology. *Neuroophthalmology*. 2017 Oct 13;42(3):191-193.
7. Perugini A, Ditterich J, **Shaikh AG**, Knowlton BJ, Basso MA. Paradoxical Decision-Making: A Framework for Understanding Cognition in Parkinson's Disease. *Trends Neurosci*. 2018 May 7.
8. **Shaikh AG**, Factor SA, Juncos J. Saccades in progressive supranuclear palsy -maladapted, irregular, curved, and slow. *Mov Disord Clin Pract*. 2017 Sep-Oct;4(5):671-681.
9. **Shaikh AG**, Zee DS. Eye Movement Research in the Twenty-First Century-a Window to the Brain, Mind, and More. *Cerebellum*. 2017 Dec 19
10. **Shaikh AG**, Finkelstein SR, Schuchard R, Ross G, Juncos JL. Fixational eye movements in Tourette syndrome. *Neurol Sci*. 2017 Nov;38(11):1977-1984.

11. **Shaikh AG**, Ghasia FF. Novel Eye Movement Disorders in Whipple's Disease-Staircase Horizontal Saccades, Gaze-Evoked Nystagmus, and Esotropia. *Front Neurol*. 2017 Jul 11;8:321.
12. Ghasia FF, Otero-Millan J, **Shaikh AG**. Abnormal fixational eye movements in strabismus. *Br J Ophthalmol*. 2018 Feb;102(2):253-259.
13. **Shaikh AG**, Ghasia FF. Fixational saccades are more disconjugate in adults than in children. *PLoS One*. 2017 Apr 13;12(4):e0175295.
14. Kang S, **Shaikh AG**. Acquired pendular nystagmus. *J Neurol Sci*. 2017 Apr 15;375:8-17.
15. **Shaikh AG**. Tremor analysis separates Parkinson's disease and dopamine receptor blockers induced parkinsonism. *Neurol Sci*. 2017 Feb 22.
16. **Shaikh AG**, Solomon D. Effects of Sustained Otolith-Only Stimulation on Post-Rotational Nystagmus. *Cerebellum*. 2017 Jun;16(3):683-690.
17. Sedov A, Popov V, Shabalov V, Raeva S, Jinnah HA, **Shaikh AG**. Physiology of midbrain head movement neurons in cervical dystonia. *Mov Disord*. 2017 Feb 20.
18. **Shaikh AG**, Straumann D, Palla A. Motion Illusion-Evidence towards Human Vestibulo-Thalamic Projections. *Cerebellum*. 2017 Jun;16(3):656-663.
19. **Shaikh AG**, Zee DS, Crawford JD, Jinnah HA. Reply: Contributions of visual and motor signals in cervical dystonia. *Brain*. 2017 Jan;140(Pt 1):e5.
20. **Shaikh AG**, Zee DS, Crawford JD, Jinnah HA. Cervical dystonia: a neural integrator disorder. *Brain*. 2016 Oct;139(Pt 10):2590-2599.
21. **Shaikh AG**, Wong AL, Optican LM, Zee DS. Impaired Motor Learning in a Disorder of the Inferior Olive: Is the Cerebellum Confused? *Cerebellum*. 2016 May 10. [Epub ahead of print]
22. **Shaikh AG**, Wilmot G. Opsoclonus in a patient with increased titers of anti-GAD antibody provides proof for the conductance-based model of saccadic oscillations. *J Neurol Sci*. 2016 Mar 15;362:169-73.
23. **Shaikh AG**, Otero-Millan J, Kumar P, Ghasia FF. Abnormal Fixational Eye Movements in Amblyopia. *PLoS One*. 2016 Mar 1;11(3):e0149953.
24. **Shaikh AG**. Abnormal head oscillations in neuro-ophthalmology and neuro-otology. *Curr Opin Neurol*. 2016 Feb;29(1):94-103.
25. **Shaikh AG**, Ghasia FF, DeLong MR, Jinnah HA, Freeman A, Factor SA. Ocular palatal tremor plus dystonia - new syndromic association. *Mov Disord Clin Pract*. 2015 Sep 1;2(3):267-270.
26. Cooperrider J, Gale JT, Gopalakrishnan R, Chan HH, Wathen C, Park HJ, Baker KB, **Shaikh AG**, Machado AG. Differential frequency modulation of neural activity in the lateral cerebellar nucleus in failed and successful grasps. *Exp Neurol*. 2016 Mar;277:27-34.
27. Ghasia FF, Wilmot G, Ahmed A, **Shaikh AG**. Strabismus and Micro-Opsoclonus in Machado-Joseph Disease. *Cerebellum*. 2015 Aug 26.
28. **Shaikh AG**. Translational neurophysiology of Parkinson's disease: can't blink on an eye blink. *J Neurophysiol*. 2015 Jul;114(1):761-2.
29. **Shaikh AG**, Ghasia FF. Neuro-ophthalmology of Chiari type I malformation. *Expert Rev in Ophthalmology* Jun 2015 [ahead of print].
30. **Shaikh AG**, Ghasia FF. Misdirected horizontal saccades in pan-cerebellar atrophy. *J Neurol Sci*. 2015 Aug 15;355(1-2):125-30.
31. Ghasia FF, **Shaikh AG**, Jacobs J, Walker MF. Cross-coupled eye movement supports neural origin of pattern strabismus. *Invest Ophthalmol Vis Sci*. 2015 May 1;56(5):2855-66.
32. **Shaikh AG**, Zee DS, Jinnah HA. Oscillatory head movements in cervical dystonia: Dystonia, Tremor, or both? *Mov Disord*. 2015 May;30(6):834-42.
33. **Shaikh AG**, Wong A, Zee DS, Jinnah HA. Why are voluntary head movements in cervical dystonia slow? *Parkinsonism Relat Disord*. 2015 Jun;21(6):561-6.
34. Ghasia FF, **Shaikh AG**. Head oscillations in infantile nystagmus syndrome. *J AAPOS*. 2015 Feb;19(1):38-41.
35. Ghasia FF, **Shaikh AG**. Uncorrected Myopic Refractive Error Increases Microsaccade Amplitude. *Invest Ophthalmol Vis Sci*. 2015 Feb 12.
36. Ghasia FF, **Shaikh AG**. Experimental tests of hypotheses for microsaccade generation. *Exp Brain Res*. 2015, Apr;233(4):1089-95.

37. **Shaikh AG**, Sundararajan S. Angioinvasive Aspergillosis of the Central Nervous System. *Can J Neurol Sci.* 2015 Jan;42(1):64-5.
38. **Shaikh AG**, Mewes K, DeLong MR, Gross RE, Triche SD, Jinnah HA, Boulis N, Willie JT, Freeman A, Alexander GE, Aia P, Butefisch CM, Esper CD, Factor SA. Temporal profile of improvement of tardive dystonia after globus pallidus deep brain stimulation. *Parkinsonism Relat Disord.* 2014 Nov 20, [Epub ahead of print].
39. **Shaikh AG**, Mewes K, Jinnah HA, DeLong MR, Gross RE, Triche S, Freeman A, Factor SA. Globus pallidus deep brain stimulation for adult-onset axial dystonia. *Parkinsonism Relat Disord.* 2014 Nov;20(11):1279-82.
40. **Shaikh AG**, Ghasia FF. Gaze holding after anterior-inferior temporal lobectomy. *Neurol Sci.* 2014 Nov;35(11):1749-56.
41. Ghasia FF, **Shaikh AG**. Source of high-frequency oscillations in oblique saccade trajectory. *Exp Eye Res.* 2014 Apr;121:5-10.
42. Ghasia FF, Gulati D, Westbrook EL, **Shaikh AG**. Viewing condition dependence of the gaze-evoked nystagmus in Arnold Chiari type 1 malformation. *J Neurol Sci.* 2014 Apr 15;339(1-2):134-9.
43. **Shaikh AG**. Motion Perception without Nystagmus-A Novel Manifestation of Cerebellar Stroke. *J Stroke Cerebrovasc Dis.* 2013 Nov 19.
44. **Shaikh AG**. Torsional nystagmus in hypothalamic hamartoma. *Epileptic Disord.* 2013 Dec;15(4):437-9.
45. **Shaikh AG**, Mehndiratta P, Gonzalez C, Koo BB. Analog restless legs syndrome rating scale. *Eur Neurol.* 2013;70(3-4):195-200.
46. **Shaikh AG**, Marti S, Tarnutzer AA, Palla A, Crawford TO, Zee DS, Straumann D. Effects of 4-aminopyridine on nystagmus and vestibulo-ocular reflex in ataxia-telangiectasia. *J Neurol.* 2013 Nov;260(11):2728-35.
47. Ghasia FF, **Shaikh AG**. Pattern Strabismus: Where Does the Brain's Role End and the Muscle's Begin? *J Ophthalmol.* 2013;2013:301256.
48. **Shaikh AG**. Does 4-aminopyridine "beat" downbeat nystagmus? *J Neurol Neurosurg Psychiatry.* 2013 Dec;84(12):1298-9.
49. **Shaikh AG**, Ghasia FF, Rasouli G, DeGeorgia M, Sundararajan S. Acute onset of upbeat nystagmus, exotropia, and internuclear ophthalmoplegia--a tell-tale of ponto-mesencephalic infarct. *J Neurol Sci.* 2013 Sep 15;332(1-2):56-8.
50. **Shaikh AG**, Zee DS, Mandir AS, Lederman HM, Crawford TO. Disorders of Upper Limb Movements in Ataxia-Telangiectasia. *PLoS One.* 2013 Jun 27;8(6):e67042.
51. **Shaikh AG**, Wong AL, Zee DS, Jinnah HA. Keeping your head on target. *J Neurosci.* 2013 Jul 3;33(27):11281-95.
52. **Shaikh AG**, Miller BR, Sundararajan S, Katirji B. Gravity-Dependent Nystagmus and Inner-Ear Dysfunction Suggest Anterior and Posterior Inferior Cerebellar Artery Infarct. *J Stroke Cerebrovasc Dis.* 2013 Jun 22.
53. **Shaikh AG**, Bates JH, Yeates SW, Katirji B, Devereaux MW. Fulminant idiopathic intracranial hypertension. *JAMA Neurol.* 2013 Jul;70(7):937-8.
54. Azzam R, **Shaikh AG**, Serra A, Katirji B. Exacerbation of myasthenia gravis with voriconazole. *Muscle Nerve.* 2013 Jun;47(6):928-30.
55. **Shaikh AG**, Ghasia FF. Physiology and pathology of saccades and gaze holding. *NeuroRehabilitation.* 2013;32(3):493-505.
56. **Shaikh AG**. Fosphenytoin induced transient pendular nystagmus. *J Neurol Sci.* 2013 Jul 15;330(1-2):121-2.
57. **Shaikh AG**, Termsarasab P, Riley DE, Katirji B. The floccular syndrome in herpes simplex type 1 encephalitis. *J Neurol Sci.* 2013 Feb 15;325(1-2):154-5.
58. **Shaikh AG**, Finlayson PG. Forskolin induced increase in spontaneous activity of auditory brainstem neurons is comparable to acoustic stimulus evoked responses. *Neurosci Lett.* 2012 Dec 7;531(2):69-73
59. **Shaikh AG**, Riley DE, Gunzler SA. Teaching video neuroimages: essential palatal tremor: is it a peripherally triggered central movement disorder? *Neurology.* 2012 Oct 16;79(16):e142.
60. **Shaikh AG**, Gulati D, Wu S, Koubeissi MZ. Independent and symmetric seizures from parasagittal cortex: is this a feature of profound hypoglycemia? *Epilepsy Behav.* 2012 Oct;25(2):263-5.
61. **Shaikh AG**. Saccadic oscillations - membrane, model, and medicine. *Expert Rev Ophthalmol.* 2012 Oct;7(5):481-486.
62. **Shaikh AG**, Palla A, Marti S, Olasagasti I, Optican LM, Zee DS, Straumann D. Role of cerebellum in motion perception and vestibulo-ocular reflex-similarities and disparities. *Cerebellum.* 2013 Feb;12(1):97-107.

63. **Shaikh AG**. A journey of tinnitus: myths, models, membranes and medicines. *J Neurol Neurosurg Psychiatry*. 2012 Aug;83(8):765-7.
64. Schubert MC, Migliaccio AA, Ng TW, **Shaikh AG**, Zee DS. The under-compensatory roll aVOR does not affect dynamic visual acuity. *J Assoc Res Otolaryngol*. 2012 Aug;13(4):517-25.
65. **Shaikh AG**. A trail of artificial vestibular stimulation: electricity, heat, and magnet. *J Neurophysiol*. 2012 Jul;108(1):1-4.
66. **Shaikh AG**, Termsarasab P, Nwankwo C, Rao-Frisch A, Katirji B. Atypical forms of Guillain-Barré syndrome and H1N1-influenza vaccination. *Vaccine*. 2012 May 9;30(22):3251-4.
67. **Shaikh AG**, Thurtell MJ, Optican LM, Leigh RJ. Pharmacological tests of hypotheses for acquired pendular nystagmus. *Ann N Y Acad Sci*. 2011 Sep;1233:320-6.
68. **Shaikh AG**, Zee DS, Optican LM, Miura K, Ramat S, Leigh RJ. The effects of ion channel blockers validate the conductance-based model of saccadic oscillations. *Ann N Y Acad Sci*. 2011 Sep;1233:58-63.
69. Hong S, Optican LM, Fitzgibbon EJ, Zee DS, **Shaikh AG**. OrbitView: Eye movement visualization software. *J Neurosci Methods*. 2011 Sep 15;200(2):181-4.
70. **Shaikh AG**, Marti S, Tarnutzer AA, Palla A, Crawford TO, Straumann D, Carey JP, Nguyen KD, Zee DS. Ataxia telangiectasia: a "disease model" to understand the cerebellar control of vestibular reflexes. *J Neurophysiol*. 2011 Jun;105(6):3034-41.
71. Strupp M, Thurtell MJ, **Shaikh AG**, Brandt T, Zee DS, Leigh RJ. Pharmacotherapy of vestibular and ocular motor disorders, including nystagmus. *J Neurol*. 2011 Jul;258(7):1207-22.
72. Tarnutzer AA, **Shaikh AG**, Palla A, Straumann D, Marti S. Vestibulo-cerebellar disease impairs the central representation of self-orientation. *Front Neurol*. 2011 Feb 28;2:11.
73. **Shaikh AG**, Xu-Wilson M, Grill S, Zee DS. 'Staircase' square-wave jerks in early Parkinson's disease. *Br J Ophthalmol*. 2011 May;95(5):705-9. Epub 2010 Aug 7.
74. **Shaikh AG**, Reich S, Zee DS. Pseudonystagmus--clinical features and quantitative characteristics. *Nature Rev Neurol*. 2010 Sep;6(9):519-23.
75. **Shaikh AG**, Wong AL, Optican LM, Miura K, Solomon D, Zee DS. Sustained eye closure slows saccades. *Vision Res*. 2010 Aug 6;50(17):1665-75.
76. **Shaikh AG**, Hong S, Liao K, Tian J, Solomon D, Zee DS, Leigh RJ, Optican LM. Oculopalatal tremor explained by a model of inferior olivary hypertrophy and cerebellar plasticity. *Brain*. 2010 Mar;133(Pt 3):923-40.
77. **Shaikh AG**, Hain TC, Zee DS. Oculomotor disorders in adult-onset Still's disease. *J Neurol*. 2010 Jan;257(1):136-8.
78. **Shaikh AG**, Marti S, Tarnutzer AA, Palla A, Crawford TO, Straumann D, Taylor AM, Zee DS. Gaze fixation deficits and their implication in ataxia-telangiectasia. *J Neurol Neurosurg Psychiatry*. 2009 Aug;80(8):858-64.
79. **Shaikh AG**, Ramat S, Optican LM, Miura K, Leigh RJ, Zee DS. Saccadic burst cell membrane dysfunction is responsible for saccadic oscillations. *J Neuroophthalmol*. 2008 Dec;28(4):329-36.
80. **Shaikh AG**, Miura K, Optican LM, Ramat S, Tripp RM, Zee DS. Hypothetical membrane mechanisms in essential tremor. *J Transl Med*. 2008 Nov 6;6:68.
81. Sinha N, Zaher N, **Shaikh AG**, Lasker AG, Zee DS, Tarnutzer AA. Perception of self motion during and after passive rotation of the body around an earth-vertical axis. *Prog Brain Res*. 2008;171:277-81.
82. Ramat S, Leigh RJ, Zee DS, **Shaikh AG**, Optican LM. Applying saccade models to account for oscillations. *Prog Brain Res*. 2008;171:123-30.
83. Zee DS, **Shaikh AG**. Think membranes and ion channels. *Curr Opin Neurol*. 2008 Feb;21(1):1-2.
84. **Shaikh AG**, Miura K, Optican LM, Ramat S, Leigh RJ, Zee DS. A new familial disease of saccadic oscillations and limb tremor provides clues to mechanisms of common tremor disorders. *Brain*. 2007 Nov;130(Pt 11):3020-31.
85. **Shaikh AG**, Jinnah HA, Tripp RM, Optican LM, Ramat S, Lenz FA, Zee DS. Irregularity distinguishes limb tremor in cervical dystonia from essential tremor. *J Neurol Neurosurg Psychiatry*. 2008 Feb;79(2):187-9.
86. Yakusheva TA, **Shaikh AG**, Green AM, Blazquez PM, Dickman JD, Angelaki DE. Purkinje cells in posterior cerebellar vermis encode motion in an inertial reference frame. *Neuron*. 2007 Jun 21;54(6):973-85.
87. **Shaikh AG**, Green AM, Ghasia FF, Newlands SD, Dickman JD, Angelaki DE. Sensory convergence solves a motion ambiguity problem. *Curr Biol*. 2005 Sep 20;15(18):1657-62.
88. Green AM, **Shaikh AG**, Angelaki DE. Sensory vestibular contributions to constructing internal models of self-motion. *J Neural Eng*. 2005 Sep;2(3):S164-79.

89. **Shaikh AG**, Finlayson PG. Excitability of auditory brainstem neurons, in vivo, is increased by cyclic-AMP. *Hear Res.* 2005 Mar;201(1-2):70-80.
90. **Shaikh AG**, Ghasia FF, Dickman JD, Angelaki DE. Properties of cerebellar fastigial neurons during translation, rotation, and eye movements. *J Neurophysiol.* 2005 Feb;93(2):853-63.
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92. **Shaikh AG**, Meng H, Angelaki DE. Multiple reference frames for motion in the primate cerebellum. *J Neurosci.* 2004 May 12;24(19):4491-7.
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G. Edited book

Eye movements and vestibular function in neurodegenerative, neurometabolic, and neurogenetic disorders. EDS. Aasef G. Shaikh and Alessandra Rufa; 2018; Frontiers Press; Basel, Switzerland

H. Book chapters

1. **Shaikh AG**. Basic neuroscience. Ultimate review for the neurology boards. 2nd edition. Editors: Hubert Fernandez,MD; Alexander Ray-Grant,MD. 2016
2. **Shaikh AG**. Neurotology. Ultimate review for the neurology boards. 2nd edition. Editors: Hubert Fernandez,MD; Alexander Ray-Grant,MD. 2016
3. **Shaikh AG**, Fernandez HH. Basics of neurostimulation. Deep Brain Stimulation. 1st edition, Editor: Raja Mehanna, 2015.
4. Hatcher-Martin J; **Shaikh AG**, Factor SA. Stereotypes. The Parkinson's Disease and Movement Disorders. 6th edition, Editors: Joseph Jankovic and Eduardo Tolosa, 2014
5. **Shaikh AG**; Walter BL. Midbrain. Encyclopedia of the Neurological Sciences 2E. Editors: Robert B. Daroff and Michael J. Aminoff, 2013.
6. Zee DS; **Shaikh AG**. The neurology of eye movements: from control systems to genetics to ion-channels to targeted pharmacotherapy. Visual Neurosciences. Editors: Leo Chalupa and John Werner, 2012
7. **Shaikh AG**, Optican LM, Zee DS. Membrane mechanisms of tremor. G. Grimaldi and M. Manto (eds.), Mechanisms and Emerging Therapies in Tremor Disorders, Contemporary Clinical Neuroscience, 2012.

I. Invited lectures:

- Eye movements in disorders of cerebellum: International Conference in Society for Research and Ataxia, Taipei, Taiwan. May 2018.
- How to launch an academic and research career for junior neurologists? The American Academy of Neurology, Los Angeles, CA April 2018.
- Integrative Neural Circuit in Cervical Dystonia, Research seminar series, University of Michigan, Ann Arbor, MI, March 2018.
- What do eye movements tell us about movement disorders: Key note speaker, Seoul National University, Seoul, Korea, July 2017.
- Eye Movements for Movement Disorders Neurologists: *International Society for Parkinson's Disease and Movement Disorders*, Vancouver, BC, June 2017.
- Eye Movements in Neurological Disease: *Gardner Visiting Professor in Movement Disorders*, University of Cincinnati, Cincinnati, OH, April 2017.
- Tale of neural integrator: nystagmus to cervical dystonia. *Derek-Denny-Brown Young Neurological Scholars Symposium*. American Neurological Association 141st Annual Meeting, Baltimore, MD, October 2016.
- Ocular flutter and opsoclonus – bench to bedside. *Ophthalmology grand round speaker*. The Eye Institute, University Hospitals. Cleveland, OH, February, 2016.

- Head oscillations in cervical dystonia – essential tremor, dystonic tremor, or head nystagmus? *Neurology grand round speaker*. Cleveland Clinic, Cleveland, OH, August, 2015.
- Eye movements – clinical tool to study movement disorders. *Movement disorders grand round speaker*. University of Cincinnati, Cincinnati, OH, May 2015.
- Impaired motor learning in a disorder of the inferior olive: Is the cerebellum confused? *Alliance award: Founders lecture*. The 67th American Academy of Neurology annual meeting, Washington DC, April 2015.
- Tale of neural integrator: from gaze-evoked nystagmus to cervical dystonia. *Neurology grand round speaker*. Case Western Reserve University, Cleveland, OH, March, 2015.
- Motion perception – a new twist in clinical and basic neurotology. *Neurology grand round*, State University of New York at Stony Brook, Stony Brook, NY, October, 2014.
- Cognitive neurology of the vestibular system: “dementia” for the neuro-otologist. *Center for Hearing and Balance Seminar Series*. Baltimore, MD, September, 2014.
- Pharmacological tests of models of acquired pendular nystagmus. *Symposium a Tribute to John Leigh*, Buenos Aires, Argentina. March 2011.
- 4-aminopyridine improves eye movements in ataxia-telangiectasia. *Ataxia-telangiectasia workshop*, Kyoto, Japan. April 2008.
- Oscillatory head movements in cervical dystonia – dystonic tremor, essential tremor, or ‘head nystagmus’? *Regional movement disorders conference*, Baltimore, MD. March 2008.
- Eye movements in ataxia-telangiectasia. *Ataxia-telangiectasia workshop*, Banff, Canada. September 2006.
- Multidisciplinary approach in management of ataxia-telangiectasia, *Ataxia Telangiectasia Children’s Project and NIH consensus meeting*, Bethesda, MD, March, 2006.
- Increased intracellular cAMP- a neurochemical correlate of tinnitus, *American Aging Society Annual Meeting*, St. Petersburg, FL, June, 2004.
- Potpourri of vestibular and auditory neuro-physiology. *Biomedical engineering Seminar Series*, Johns Hopkins University, Baltimore, MD, May, 2004.
- Vestibular prosthesis and postural control, *Special Session on New Prosthetic Applications*, NINDS/NIDCD, October 2002.
- Pharmacological modulation of superior olive complex neural excitability, *Otolaryngology Scientific Forum*, Detroit Medical Center, Detroit, MI, May 2002.
- The vestibular prosthesis, Washington University in St. Louis, MO. January, 2002.
- Semicircular canal implants, *Annual National Conference of Neurotological and Equilibrimetric Society of India*, All India Institute of Medical Sciences, New Delhi, India, September 2001.
- Design of the semicircular canal implants, *Otolaryngology Scientific Forum*, Detroit Medical Center, Detroit, MI, April 2001.