



JOHNS HOPKINS
M E D I C I N E

CURRICULUM VITAE
KAZIM A. SHEIKH, M.D.

DEMOGRAPHIC INFORMATION

Current Appointments:

2005- Associate Professor of Neurology, Johns Hopkins University, Baltimore, Maryland
1997- Staff Neurologist, Johns Hopkins Hospital, Baltimore, Maryland

Personal Data:

Office address: Johns Hopkins Hospital
Department of Neurology
Path 509, 600 N. Wolfe Street
Baltimore, MD 21287
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Education:

i) Medical School

1982-1987 MBBS, King Edward Medical College, Lahore, Pakistan

ii) Residencies/Fellowship

1987-1990 Intern/Resident Mayo Hospital, Lahore, Pakistan
1990-91 Internship, Nassau County Medical Center, SUNY, East Meadow, NY
1991-94 Residency in Neurology, Neurological Institute, Columbia University,
New York, NY
1994-97 Postdoctoral Fellow in Peripheral Nerve, Johns Hopkins University
School of Medicine, Baltimore, MD

Professional Experience:

1997-98 Research Associate, Johns Hopkins University, Baltimore, MD
1999-99 Instructor, Johns Hopkins University, Baltimore, MD
1999-05 Assistant Professor of Neurology, Johns Hopkins University, School of Medicine,
Baltimore, MD

RESEARCH ACTIVITIES

Publications

(i) Scientific Articles:

- 1) Hafer-Macko CE, **Sheikh KA**, Li CY, Ho TW, Cornblath DR, McKhann GM, Asbury AK, Griffin JW. Immune attack on the Schwann cell surface in acute inflammatory demyelinating polyneuropathy. *Ann. Neurol.* 1996;39:625-635.
- 2) Hafer-Macko C, Hsieh S-T, Li CY, Ho TW, **Sheikh K**, Cornblath DR, McKhann GM, Asbury AK, Griffin JW. Acute motor axonal neuropathy: An antibody-mediated attack on axolemma. *Ann. Neurol.* 1996;40:635-644.
- 3) Chaudhry V, Eisenberger MA, Sinibaldi VL, **Sheikh K**, Griffin JW, Cornblath DR. A prospective study of suramin-induced peripheral neuropathy. *Brain* 1996;119:2039-2052.
- 4) Ho TW, Hsieh S-T, Nachamkin I, Willison, HJ, **Sheikh K**, Kiehlbauch J, Flanigan K, McArthur JC, Cornblath DR, McKhann GM, Griffin JW. Motor nerve terminal degeneration provides a potential mechanism for rapid recovery in acute motor axonal neuropathy after *Campylobacter* infection. *Neurology* 1997;48:717-724..
- 5) **Sheikh KA**, Nachamkin I, Ho TW, Cornblath D, Griffin JW, McKhann GM. Molecular mimicry in Guillain-Barre syndrome. *Ann NY Acad Sci* 1998;845:307-321.
- 6) **Sheikh KA**, Nachamkin, I, Ho, TW, Willison, HJ, Veitch, J, Ung, H, Nicholson, M, Li, CY, Wu, HS, Shen, B-G, Cornblath, DR, Asbury, AK, McKhann, GM and Griffin, JW. *Campylobacter jejuni* lipopolysaccharides in Guillain-Barré syndrome: Molecular mimicry and host susceptibility. *Neurology* 1998;51:371-378.
- 7) **Sheikh KA**, Deerinck TJ, Griffin JW, Ellisman MH. The determination of ganglioside-like moieties in peripheral nerve. *Brain* 1999;122:449-460.
- 8) Nachamkin I, Ung H, Moran AP, Yoo D, Prendergast MM, Nicholson MA, **Sheikh KA**, Ho T, Asbury AK, Mckhann GM, Griffin JW. Ganglioside GM1 mimicry in *Campylobacter* strains from sporadic infections in the United states. *J Infect Diseases* 1999;179:1183-9.
- 9) Griffin JW, **Sheikh KA**. Axon and Schwann cell interactions in Charcot-Marie-Tooth disease. *Ann NY Acad Sci* 1999;883:77-90.
- 10) **Sheikh KA**, Sun J, Liu Y, Kawai H, Crawford TO, Proia RL, Griffin JW, Schnaar RL. Mice lacking complex gangliosides develop Wallerian degeneration and myelination defects. *PNAS* 1999;96:7532-7537.

- 11) Lu JL, **Sheikh KA**, Wu HS, Zhang J, Cornblath DR, McKhann GM, Asbury AK, Griffin JW, Ho TW. Physiological-Pathological Correlation in Guillain-Barré Syndrome. *Neurology* 2000;54:33-39.
- 12) Lunn MPT, Johnson LA, Fromholt SE, Itonori S, Haung J, Vyas AA, Hildreth JEK, Griffin JW, Schnaar RL, **Sheikh KA**. High affinity anti-ganglioside IgG antibodies raised in complex ganglioside knockout mice: reexamination of GD1a localization. *Journal of Neurochem* 2000;75: 404-412.
- 13) **Sheikh KA**, Griffin JW. Editorial- Variants of the Guillain Barre syndrome: Progress toward fulfilling 'Koch's Postulates'. *Ann Neurol* 2001;49:694-696.
- 14) Spies JM, **Sheikh KA**. Management of Guillain-Barre syndrome. *Expert Rev. Neurotherapeutics* 2001;1: 119-129.
- 15) Lunn MPT, Crawford TO, Hughes RAC, Griffin JW, **Sheikh KA**. Anti-Myelin-Associated Glycoprotein antibodies alter neurofilament spacing. *Brain* 2002;125,904-911.
- 16) Schnaar RL, Fromholt SE, Gong Y, Vyas A A, Laroy W, Wayman DM, Heffer-Lauc M, Ito H, Ishida H, Kiso M, Griffin JW, **Shiekh KA**. IgG-class Mouse Monoclonal Antibodies to Major Brain Gangliosides. *Anal Biochem* 2002;302:276-284.
- 17) Nachamkin I, Liu J, Li M, Ung H, Moran A, Prendergat M, **Sheikh K**. Campylobacter jejuni from patients with Guillain-Barre syndrome preferentially express Gd1a-like epitope. *Infect Immun* 2002;70:5299-5303.
- 18) Gong Y, Tagawa Y, Lunn MP, Laroy W, Heffer-Lauc M, Li CY, Griffin JW, Schnaar RL, **Sheikh KA**. Localization of major gangliosides in the PNS: implications for immune neuropathies. *Brain* 2002;125:2491-2506.
- 19) Zhang G, Lopez PHH, Li CY, Mehta NR, Griffin JW, Schnaar RL, and **Sheikh KA**. Anti-ganglioside antibody mediated neuronal cytotoxicity and its protection by IVIg: implications for immune neuropathies. *Brain* 2004;127:1085-1100.
- 20) **Sheikh KA**, Zhang G, Gong Y, Schnaar RL, Griffin JW. An anti-ganglioside antibody-secreting hybridoma induces neuropathy in mice. *Ann Neurol* 2004;56:228-239.
- 21) Sun J, Shaper NL, Itonori S, Heffer-Lauc M, **Sheikh KA**, and Schnaar RL. Myelin-associated glycoprotein (Siglec-4) expression is progressively and selectively decreased in the brains of mice lacking complex gangliosides. *Journal of Glycobiology* 2004;14:851-857.
- 22) Goodfellow JA, Tyrone Bowes, **Sheikh K**, Odaka M, Boffey J, Townson K, Halstead SK et al. Over-expression of GD1a ganglioside sensitizes motor nerve terminals to anti-GD1a antibody mediated injury in a model of acute motor axonal neuropathy. *J Neurosci*

2005;25:1620-1628.

- 23) Conference report- 2004 Pathogenesis of Rare Neuroimmunologic Disorders, Hyatt Regency Inner Harbor, Baltimore, MD, August 19th 2004- August 20th 2004. J Neuroimmun 2005;159: 3-11.
- 24) **Sheikh KA**, Ramos-Alvarez M, Jackson AC, Li CY, Asbury AK, Griffin JW. Overlap of pathology in paralytic rabies and axonal Guillain-Barré syndrome. Ann Neurol 2005;57:768-772.
- 25) Pan B, Fromholt SE, Hess EJ, Crawford TO, Griffin JW, **Sheikh KA**, Schnaar RL. Myelin-associated glycoprotein and complementary axonal ligands, gangliosides, mediate axon stability in the CNS and PNS: Neuropathology and behavioral deficits in single- and double-null mice. Exp Neurol (in press).

(ii) Book Chapters and Monographs:

- 1) Collins BE, **Sheikh KA**, Vyas AA, Heffer-Lauc M, Farlich TJ, Liu Y, Kawai H, Ichikawa Y, Griffin JW, Proia RL, Schnaar RL. Sialoglycoconjugate recognition by a nervous system lectin- functional-implications of myelin-associated glycoprotein binding to brain gangliosides. In *Sialoglycobiology and other Forms of Glycosylation*. (Inoue, Y., Lee, Y.C., and Troy, F.A., III, eds.), Gakushin Publishing Co., Osaka, Japan, 121-128.
- 2) **Sheikh KA**. Treatment of Guillain-Barre syndrome. In *Current Therapy in Neurologic Disease*, Sixth Edition (Johnson RT, Griffin JW, and McArthur J.C, eds.), Mosby-Year Book, St. Louis, Missouri, 366-369.
- 3) Griffin JW, **Sheikh K**, Li CY. Acute Motor Axonal Neuropathy. In: *Neuromuscular Disorders of Infancy and Childhood: A Clinician's Approach*. HR Jones, DC De Vivo, BT Darras (eds). Butterworth-Heinemann, MA, 425-432.
- 4) Griffin JW, **Sheikh KA**. Guillain-Barre syndrome (Acute inflammatory demyelinating polyneuropathy). In: *Myelin and its Diseases*. Lazzarini RA (ed). Academic Press 887-904.
- 5) **Sheikh KA**, Nachamkin I. Campylobacter and Guillain Barre syndrome. In: *Emerging Neurological Infections*. Powers C, Johnson RT (eds.). Marcel Dekker, 331-365.
- 6) **Sheikh KA**. AMAN: What it teaches us about mechanisms underlying axonal injury. In: *Multiple Sclerosis as a Neuronal Disease*. Waxman S (ed.). Academic Press 353-369.
- 7) Griffin JW, **Sheikh KA**. Guillain-Barre Syndromes. In: *Peripheral Neuropathy*. Dyck PJ, Low PA, Griffin JW (eds). (in press).
- 8) **Sheikh KA**. Disorders of the peripheral nervous system. In: *Neurology: A Concise Text for Medical Students and House Officers*. Shuaib A, Shafqat S (eds). (in press).

- 9) Lunn MPT, **Sheikh KA**. Peripheral Neuropathies. In: The Autoimmune Diseases (4th edition). Rose NR, Mackay IR (eds.) Academic Press (in press).

(iii) Other Media (Journal titles):

Brain 122 March 1999
Brain 125 April 2002
Brain 125 November 2002

Inventions/Patents

JHU Ref#: 4184: Eight Anti-ganglioside Monoclonal Antibodies to major brain cell surface antigens involved in axon-myelin stability, nerve regeneration, and control of nerve cell signaling

JHU Ref#: 3663 (Patent pending): Monoclonal Antibodies to Gangliosides Raised in Ganglioside-Deficient Knockout Mice

Extramural Sponsorship:

(i) Current:

NS42888-01 (K.A. Sheikh, PI) 07/01/2002 - 06/30/2007
NIH/NINDS
Experimental models of acute motor axonal neuropathy (AMAN)
Evaluate the role and pathogenic mechanisms of anti-ganglioside antibodies in autoimmune neuropathy
Role: PI (Effort 45%)

GBS Foundation (K.A. Sheikh, PI) 07/01/2004 - 06/30/2005
Determination of anti-ganglioside antibody affinity in patients with GBS
Evaluate the role of anti-ganglioside antibody affinity in pathogenesis of GBS
Role: PI (Effort 2%)

NS012665-01 (S. Mori, PI) 9/30/2004-7/31/2008
NIEHS
MR based study of hypomyelination by lead poisoning
Evaluate the effects of lead poisoning on myelination during developments in rodents by histology and MR imaging
Role: Co-I (Effort 5%)

(ii) Pending:

R21(Sheikh KA, PI) 12/01/2005-11/30/2007
NIH/NINDS
MRI of the muscle in a mouse model of amyotrophic lateral sclerosis
This grant proposes to study and establish usefulness of magnetic resonance microimaging as a tool to study muscle size as an outcome tool in transgenic mice
Role (PI, Effort 20%)

R01 NS037096-24 (Schnaar RL, PI) 07/01/2005-06/30/2010
NIH/NINDS
Complex Carbohydrates in Neuronal Cell Function
Evaluate the role of brain lectins and gangliosides myelin-axon communication and nerve regeneration *in vitro*
Role Co-I (Effort 5%)

NIH RFA-NS-05-005 (PI: Gearhart J)
JHU Center for Human Stem Cell Based Therapies in ALS
To examine the effects of human stem cell transplantation in a model of motor neuron disease (project 2)
Role Co-I (Effort 10%)

(iii) Previous Grants/Contracts:

NS31528 (McKhann GM, PI) 09/20/1999 - 08/30/2003
NIH/NINDS
Chinese paralytic syndrome: Mechanisms and relevance
Characterize the clinical, electrodiagnostic, and pathologic features and disease mechanisms of this form of GBS.
Role: Co-I, PI (Effort 25%)

RG2830 (Schnaar RL, PI) 10/1/1999 - 9/30/2002
National Multiple Sclerosis Society
Oligodendrocyte-neuron cell-cell adhesion molecules
Characterize MAG-ganglioside interactions
Role: Co-I (Effort 24%)

NS37096-21 (Schnaar RL, PI) 07/01/2000 - 06/30/2001
NIH/NINDS
Complex Carbohydrates in Neural Cell Function
Evaluate the role of brain lectins and gangliosides myelin-axon communication and nerve regeneration *in vitro*
Role: Co-I (Effort 21%)

NS34846 (Griffin JW, PI)

02/01/1996 - 01/31/2000

NIH/NINDS

Pathogenesis of the Guillain-Barré Syndrome

Reconstruct the pathophysiologic sequence of axonal and acute demyelinating forms of GBS.

Role: Co-I (Effort 30%)

EDUCATIONAL ACTIVITIES

Teaching

(i) Classroom instruction:

- Faculty Neuroimmunology course at Johns Hopkins University School of Public Health 2004.

(ii) Clinical instruction:

- Daily clinical rounds with medical students once a year during Neurology inpatient service (1999 – to date)
- Outpatient clinic: Neuromuscular fellows (2001- to date)
- Outpatient clinic: Rotating 3rd year medical students (1999- to date)
- Neurology Clinical Skills course: Annual participation in this 3-week course for 2nd year medical students (2001 – to date)
- Neurology Resident Lecture series: Annual participation in this yearlong lecture series (2002 – to date)

(iii) CME instruction:

2001 An update on Guillain-Barre syndrome. APPNA Summer meeting in Chicago

2001 Common peripheral nerve disorders. Zayed Military Hospital, UAE

2005 Practical Immunology in Neuromuscular diseases (Program#3AS.004), American Academy of Neurology, Miami Beach.

2005 Current Neurology, Baylor College of Medicine, Houston, Texas.

Mentoring

(i) Advisees:

Postdoctoral:

- Michael Lunn MD, PhD: (1999-2000). Present position: Senior Registrar, Queen Square Hospital, London
- Yumi Tagawa MD, PhD: (2000- 2004). Present position: Faculty, Department of Oral Microbiology, Meikai University, Japan
- Yanpin Gong MD, PhD (2000 –2002). Present position: Post-doctoral fellow in Department of Structural Biology and Biochemistry, The Hospital for Sick Children, Toronto

- Helmar Lehman MD (2004 – 2005). Present position: Resident in Department of Neurology, Heinrich-Heine-Universität. Düsseldorf Germany
- Gang Zhang MD (2000-to date)
- Pablo Lopez PhD (2003- to date)

Predoctoral:

- Ian Morrison (Summer 1999), medical student from University of Glasgow. Present position, clinical training at Southern General Hospital, Glasgow.
- Stephen Oh (1999-2000) Undergraduate research, JHU. Present position: Medical student New York Medical College, Valhalla, New York
- Christie Turtzo (2002) Undergraduate research before graduating from Johns Hopkins School of Medicine. Present position: Neurology resident at Johns Hopkins Hospital

(ii) Thesis Committees:

- Ji Sun, Gangliosides mediate axon-myelin stability and inhibit neurite outgrowth, 1999-2003, Committee member

Editorial Activities

(i) Editorial Board Appointment

(ii) Journal Peer Review Activity

Ad hoc reviewer for:

- 1999- Annals of Neurology
- 1999- Journal of Neuroimmunology
- 1998- Journal of Neurology, Neurosurgery and Psychiatry
- 2004- Journal of the Peripheral Nervous System
- 2002- Journal of Neurological Sciences
- 2004- Journal of Neurovirology
- 2004- Muscle and Nerve
- 1998- Neurology

CLINICAL ACTIVITIES

Certification

Medical Licensure:

- 1997- State of Maryland, USA #D46854 (Active)

Specialty Board Certification:

- 1998 Diplomate of the American Board of Psychiatry and Neurology#45665

Service Responsibilities

- Neurology Inpatient or Consult Service: 1 month a year since 1997
- Neuromuscular Consult Service: 1 month a year since 1999
- Peripheral Nerve Clinic: 1 half-day session per week since 1999

ORGANIZATIONAL ACTIVITIES

Membership in Professional Organizations

1993- American Academy of Neurology
1995- Peripheral Nerve Society
2001- APPNA

Advisory Committee/Review Groups:

2001&2003 NIH, NDPRS (ad hoc Grant reviewer)

RECOGNITION

Awards/Honors

1982-87 Merit Student Scholarship Award, Pakistan
1991 House Officer Award, Nassau County Medical Center
1994-96 Whitehurst Foundation Award (fellowship support)
1999 Travelling fellowship, Peripheral Nerve Society
2001-03 Clinician Scientist Award, Johns Hopkins University.
2003 Plenary Lectureship at Peripheral Nerve Society meeting American Academy of

Invited Talks/Panels

Neurology Grand Rounds at Johns Hopkins. Mechanisms of injury in GBS 1996

Neurology Grand Rounds at Johns Hopkins. Toxic Neuropathies 1997

Pathogenesis of Guillain Barre Syndrome. University of Glasgow, Department of Neurology, 1997.

Molecular mimicry in Guillain Barre Syndrome. New York Academy of Sciences Sphingolipid Satellite Symposium, 1997, New York.

Campylobacter and pathogenesis of Guillain Barre Syndrome. Department of Pharmacology and Molecular Sciences, Johns Hopkins University, 1998.

Paralytic rabies mimicking Guillain Barre Syndrome. Department of Immunology, School of Public Health, Johns Hopkins University, 1999.

Gangliosides and molecular mimicry. Fourth International symposium of paediatric neurology, Mexico city, Mexico, 1999.

Localization studies in Guillain Barre Syndrome. Guillain Barre Syndrome foundation symposium, Miami, Florida, 1999.

Pathogenesis of Guillain Barre Syndrome. Neurology Grand Rounds at Johns Hopkins, December, 1999.

Anti-Ganglioside antibodies in Guillain Barre Syndrome. Glycobiology interest group, Johns Hopkins University, February 2000.

A new animal model of Guillain Barre Syndrome. Guillain Barre Syndrome foundation symposium, Washington D.C. 2000.

Multiple Sclerosis and Guillain Barre syndrome: Converging research issues. Grand Rounds Johns Hopkins Hospital, December 2000.

Guillain-Barre syndrome as a model of molecular mimicry. Director Lecture Series at NIH, Bethesda, MD, December 2000.

Antibody mediated axonal degeneration. International Workshop on neuronal injury in MS and related disorders: Mechanisms and prevention. March 18-21, New Orleans, LA.

Anti-ganglioside antibodies and axonal injury. Plenary Lecture at Peripheral Nerve Society meeting, Tyrol, Austria, September 8-12, 2001.

Models of antibody mediated neural injury. Max-Planck-Institute of Neurobiology, Munich, Germany, September 14, 2001.

Ganglioside-mimicry in Guillain-Barre syndrome. Seventh International symposium, Guillain-Barre Syndrome Foundation, Nov 22-24,2002.

Immune mediated neuropathies. Advances in Neurology Dec, 23-24, 2002. Aga Khan Medical University, Karachi, Pakistan.

Molecular mimicry in Guillain-Barre syndrome. Grand Rounds North Western University Department of Neurology, March 18, 2003.

Experimental models of antibody mediated neural injury. Clinical Neuroscience Seminar, Johns Hopkins University, March 22, 2004.

Management of Guillain-Barre syndrome. Resident Lecture Series, Department of Physical Medicine and Rehabilitation, Johns Hopkins Hospital, May 18, 2004.

Molecular mimicry in GBS. Symposium on rare disorders. Hyatt Regency Hotel, Baltimore, MD. August 19-22, 2004

Evidence for molecular mimicry in GBS. Neuroscience Grand Rounds, Case Western Reserve University, October 2004.

Role of anti-ganglioside antibodies in Guillain-Barre syndrome. Eighth International symposium, Guillain-Barre Syndrome Foundation, Atlanta, GA, Nov 19-21, 2004.

Cellular elements of demyelination. Current Neurology, Baylor College of Medicine, Houston, Texas. Nov 4-5, 2005.

AIDP. Current Neurology, Baylor College of Medicine, Houston Texas. Nov 4-5, 2005.