

AYMAN OMAR, MD, PhD, LMCC

Director Neuro Oncology
Assistant Professor of Neurology
Southern Illinois University
School of Medicine
Dept. of Neurology
Springfield, IL
July 1, 2010

CURRENT TITLE:

Director of Neuro Oncology & Assistant Professor of Neurology

SIU School of Medicine/Dept of Neurology
June 1, 2010 - Present

Clinical Assistant Professor of Neurology

University of Chicago, Pritzker School of Medicine
July 1, 2009 – June 1, 2010

Attending Neurologist and NeuroOncologist

NorthShore University HealthSystem
August 1, 2008 - Present

PERSONAL DATA:

Place and date of birth: 1968- Cairo, Egypt
Citizenship: Canadian and Egyptian
US Visa Status: H1B

EDUCATION:

General

International Baccalaureate (IB) (completed 3 year program of study)
Norra Real High School, Stockholm, SWEDEN
10/1982 - 7/1985

General Certificate of Education

University of London, School Examinations Board, London, UK
01/1985 - 01/1986

Medical

Doctor of Medicine (MD) (Awarded Medical Degree with Honors)
University of Cairo, EGYPT
10/1986 - 12/1992

Graduate

Doctorate in Philosophy (PhD), Neuroscience / Cellular and Molecular Medicine
University of Ottawa, Faculty of Medicine, Ottawa, CANADA
09/1999 - 10/2002

Master of Science (MSc), Anatomy and Neurobiology
University of Ottawa, Dept. of Cellular and Molecular Medicine, Ottawa, CANADA
01/1998 - 09/1999 (Recommended to Ph.D. Program due to exceptional progress)

Program of Study Diploma, Lab Technology and Electron Microscopy
Seneca College of Applied Arts and Technology, Toronto, CANADA
06/1995 - 10/1995

LICENSURE & CERTIFICATION:

- . American Board of Psychiatry and Neurology, Part I: Passed
- . American Board of Psychiatry and Neurology, Part II: In Preparation
- . Physician and Surgeon Permanent License, State of Illinois, 2008
- . Permanent Physician License, State of Indiana, 2006
- . Member, College of Physicians and Surgeons of Ontario, 2006 (Expired)
- . American Board of Psychiatry and Neurology (Board Eligible), 2006
- . Licentiate of the Medical Council of Canada (LMCC), 2006
- . Medical Council of Canada Qualifying Examination, Part II (MCCQE II), 2005
- . Medical Council of Canada Qualifying Examination, Part I (MCCQE I), May, 2000
- . Medical Council of Canada Evaluating Examination (MCCEE), September, 1999
- . Physician and Surgeon, Temp License, State of Missouri Medical Board, USA, 2002 (Expired)
- . Certified by the Educational Commission for Foreign Medical Graduates (ECFMG), USA (1998)
- . General Medical License (Full Registration), Ministry of Health, Egypt, 1996
- . United States Medical Licensing Examination (USMLE), Step 3, 2008
- . United States Medical Licensing Examination (USMLE), Step 2CS, 2008
- . United States Medical Licensing Examination (USMLE), Step 2, March, 1996
- . United States Medical Licensing Examination (USMLE), Step 1, June, 1995
- . Cert. Basic Cardiac Life Support (BCLS) Provider, St. John Ambulance, Ottawa, 1999, Re-certified in 2002 and 2004
- . Cert. Advanced Cardiac Life Support (ACLS) Provider, American Heart Association, 1999, Re-certified in 2002 and 2004
- . Cert. Advanced Trauma Life Support (ATLS) Provider, American College of Surgeons, April, 2000
- . Test of English as a Foreign Language (TOEFL)
- . Test of Spoken English (TSE), February 2000
- . Completed course on Minimizing Healthcare Errors with Crew Training International designed for healthcare professionals using fighter jet pilot standards.
- . Completed New Formulations for Anti-Epileptic Drugs, AB Comm. Inc., May, 2004
- . Certified in Institutional Review Board (IRB) policies and procedures for conducting clinical research (12/31/05)
- . Certified in Health Sciences Health Insurance Portability and Accountability Act (HIPAA) guidelines (12/31/2005)
- . National Institutes of Health (NIH), National Cancer Institute (NCI) Investigator number assigned, 2008 (expires 3/2009)

HONORS & DISTINCTIONS:

- Awarded Chief Residency in Neurology - University of Missouri - Columbia (2005-2006)
- Travel Fellowship from the American Neurological Association (nation-wide competition) to attend ANA meeting in Toronto, ON, Canada; Funding: \$500.00, October 2-6, 2004
- Scored in the **top 1% in North America** in the Neurology Residency In-Service Training Exam (RITE), American Academy of Neurology, 2003 and 2004
- Selected as one of the **top 150 internationally-trained physicians** in the Ontario IMG Program Entrance Exam, University of Toronto, December, 2001
- Travel Award from the University of Ottawa, Faculty of Graduate and Post-Doctoral Studies to present poster at the Society for Neuroscience, 31st annual meeting, San Diego, Ca, November, 2001
- Prize for Outstanding Achievements, Ottawa Hospital Foundation, Ottawa, Canada, November, 2000
- Post-Doctoral Fellowship Award, Canadian Institutes of Health Research (CIHR) under the Canadian Neurotrauma Research Program (CNRP); Ranked: **6th nationwide**, June, 2000; Title of Project: Rapid Tissue Remodeling in Dentate Gyrus of Adult Rat Hippocampus Following Excitotoxic Injury. Funding: \$120,000; Fellowship Director: Bin Hu, MD, PhD
- Excellence Scholarship in Science and Engineering (PhD), University of Ottawa, Faculty of Graduate and Post-Doctoral Studies; Funding: \$15,000, June, 2000
- Graduate Admission Scholarship in Science and Engineering (PhD), University of Ottawa, Faculty of Graduate and Post-Doctoral Studies; Funding: \$5,000, January, 2000
- Travel Award from the University of Ottawa, Faculty of Graduate and Post-Doctoral Studies to present poster at the Society for Neuroscience, 29th annual meeting, Miami Beach, FL, October, 1999
- Awarded Medical Degree with Honors, University of Cairo, December, 1992
- Scholarship of Academic Excellence, University of Cairo, 1987-1992, awarded annually
- Travel Award from the IFMSA (World Health Organization) to attend Emergency Surgery Clerkship at University Clinical Hospital, Zaragoza, Spain, 1991
- Admission Scholarship, University of Cairo, Faculty of Medicine, 1986
- Admission Scholarship, American University in Cairo, Mechanical Engineering, 1985, declined

CLINICAL TRAINING:

Clinical / Research Fellow in Neurooncology

Princess Margaret Hospital, Pencer Brain Tumor Center
University of Toronto
7/2006 – 7/2008

Chief Resident in Neurology

University of Missouri - Columbia, MO, USA
Harry S. Truman Memorial Veterans Administration Hospital, Columbia, MO, USA
07/2005 - 7/2006

Resident in Neurology

University of Missouri - Columbia, MO, USA
Harry S. Truman Memorial Veterans Administration Hospital, Columbia, MO, USA
07/2003 - 7/2005

My responsibilities included admitting, evaluating and managing patients on Neurology inpatient, consult, EMG, EEG, sleep studies etc. Additional privileges at the Rusk Rehab as well as Columbia Regional Hospital.

Intern in Internal Medicine

University of Missouri - Columbia, MO, USA

Harry S. Truman Memorial Veterans Administration Hospital, Columbia, MO, USA

07/2002 – 6/2003

My responsibilities included managing internal medicine patients under senior resident and attending supervision.

Resident in Internal Medicine

Nile Badrawi Hospital, Cairo, Egypt (Private Practice)

01/1997 - 06/1997

My responsibilities included management of inpatients as well as outpatients (including neurology, cardiology, pulmonology, oncology, gastroenterology, and a wide variety of general internal medicine cases). In addition, I was responsible for the monitoring of 30 regular hemodialysis patients as well as post-op care of renal transplant recipients. The department received 30-50 patients daily including those admitted through HMO's covering the Middle East region, (Middle East Medicare Plan).

Resident in Internal Medicine (Private Practice)

Al-Salam Hospital, Cairo, Egypt

07/1996 - 10/1996

My responsibilities included management of patients admitted to the ICU and CCU in addition to the Dialysis Unit, where I monitored patients and performed preoperative workup and postoperative care of renal transplant recipients.

House Officer (Rotational Intern)

Cairo University Teaching Hospital

6/1/1993 - 10/31/1993

12/1/1995 - 6/30/1996

Received intensive 12 months training in the following areas: Neurosurgery and Neuro-traumatology: 8 wks; General and Vascular Surgery: 8 wks; Orthopedics: 4 wks; Emergency Surgery: 4 wks; OB/GYN: 8 wks; General Pediatrics and neonatal intensive care: 8 wks; General Internal Medicine: 8 wks.

RESEARCH EXPERIENCE:

CIHR/CNRP Post-Doctoral Fellow

Ottawa Health Research Institute, Ottawa Hospital

Division of Neurosciences

07/2000 – 7/2002

Successfully competed and obtained funding (~\$120,000) from the premier national research funding agency in Canada, the Canadian Institutes of Health Research (formerly the Medical Research Council of Canada). My grant proposal was ranked 6th nationwide.

My project focused on investigating the molecular mechanisms governing stem cell proliferation and differentiation in the dentate gyrus of rats following traumatic and ischemic cell injury. I was able to show for the first time that sodium-potassium pump inhibition up-regulates proliferative activity of progenitor cells in the subgranular zone of the dentate gyrus. I also showed that in the early stages post-injury, precursor cells undergo an accelerated rate of migration towards areas of cell injury. These findings may have important functional implications in neural network reconstruction following brain damage. Techniques used in this project include electrophysiological recordings from acute brain slices, immunofluorescence, in situ hybridization, confocal imaging, digital image analysis and stereotactic CNS micro-infusions.

Research Assistant

Loeb Health Research Institute, Ottawa Hospital
Division of Neurosciences
07/1997 - 07/2000

My research focused on elucidating the mechanisms of ischemic neuronal injury. I was successful in developing a novel in-vivo model for acute ischemic stroke which involved the stereotactic infusion of ouabain (a sodium-potassium ATPase pump blocker) with fluorescent molecular probes into the dentate gyrus of adult rats. This model allowed for the delineation of the cellular and molecular responses of neurons to ischemic injury, and allowed the visualization of lipid bilayer and DNA conformational changes post-injury. I subsequently utilized this model to study the mechanisms of mannitol-based neuroprotection particularly its effects on sodium and potassium ion regulation in neurons.

Clinical Research during Residency Training

"Role of tetracycline in the treatment of chronic progressive external ophthalmoplegia (CPEO)".
Principal Investigator: Lenworth Johnson, Professor of Ophthalmology (Neuro-Ophthalmology) and Neurology, University of Missouri - Columbia. Co-Investigator: A.I. Omar, Neurology Chief Resident, University of Missouri - Columbia. University of Missouri IRB Project #: 1059518. (1/06/ - 7/06)

Description: This is a retrospective analysis of the effect of tetracycline antibiotics on ocular motility in chronic progressive external ophthalmoplegia. CPEO is a hereditary mitochondrial myopathy that results in progressive weakness of the extraocular muscles involved in eye movement. Patients with CPEO have limited eye movements which can result in double vision, difficulty with reading and gait disturbance. These symptoms are chronic and progressive, as the name implies, and can be debilitating for patients affected by this condition. To date, there are no available effective treatment options for this disease. Some of our patients have been treated with tetracycline and have had apparent improvement in eye movement. After retrospectively analyzing the data, we have shown for the first time that tetracycline can play a role in improving ocular motility and in delaying progression of the disease.

Research Support

Ongoing Research Support (Co-Investigator)

Role as co-investigator includes:

- 1- Selecting and enrolling appropriate patients for the research studies
- 2- Administering study drugs and/or study specific intervention
- 3- Monitoring responses to study drugs and / or intervention through analyzing clinical, laboratory and imaging information
- 4- Monitoring potential complications related to study
- 5- Reporting Adverse or Severe Adverse events (SAEs) related to study patients
- 6- Treatment of any and all study related complications
- 7- Providing quantifiable measurements of outcomes related to the study for statistical analysis.
- 8- Managing and supervising study personnel including trial nurses, physician assistants and/or residents and students who may be involved in study at a given time (currently ~9-10 study personnel being actively managed).

Current Studies by disease:

Glioblastoma Multiforme

- **Avastin and Temozolomide following Radiation and Chemotherapy for Newly Diagnosed Glioblastoma Multiforme: A Phase II Study**

Avastin, a monoclonal antibody angiogenesis inhibitor is added to the standard of care treatment of temozolomide chemotherapy to determine the safety and effectiveness of the combination. Patients may receive treatment until progression or unacceptable toxicities.

- **Avastin , Temozolomide, Bevacizumab and RT followed by Temozolomide and Avastin versus Avastin and Temodar vs. RT/TMZ + placebo followed by TMZ plus placebo for newly diagnosed GBM: International, multicenter, randomized, double blinded placebo controlled trial**

Study name: AvaGlio (Avstin in Glioblastoma)

This is an International phase III trial (the largest trial of its kind for the treatment of Glioblastoma (GBM), the most aggressive brain cancer) examining the efficacy of adding Avastin (a drug that chokes off blood supply to brain cancer) to standard tx. for newly diagnosed GBM patients.

Recently attended European Investigator meeting in Vienna, Austria (June 15-18, 2009) representing Northshore University HealthSystem, USA as one of the US study sites that will be participating in this international trial (one of 143 centers worldwide)

In Vienna, I was able to point out a critical problem with the study design that was previously overlooked by the international study team and as a result an amendment will be resubmitted to the FDA for approval

- **A Phase II Study of CDX-110 with Radiation and Temozolomide in Patients with Newly Diagnosed Glioblastoma Multiforme: Phase II/III**

CDX110 is a vaccine which recognizes the protein EGFRvIII in GBM. The purpose is to determine effectiveness and side effects of adding CDX-110 to the standard of care treatment for GBM. Patients will receive Temodar days 1-5 of a 28-day cycle and the CDX-110 vaccine on day 21 of each cycle. Treatment may continue with Temodar for up to one year and the vaccine continues until progression or unacceptable toxicities.

- **Temozolomide Alone and in Combination with Possible Permutations of Thalidomide, Isotretinoin and/or Celecoxib as Post-Radiation Adjuvant Therapy for Glioblastoma Multiforme**

The purpose of this study is to compare treatment of temozolomide with the combination and the above mentioned drug to determine the efficacy and safety of these combinations.

Recurrent

Glioblastoma Multiforme

- **Phase III, Randomized, Parallel Group, Multicenter Study in Recurrent Glioblastoma Patients to Compare the Efficacy of Cediranib (Recentin, AZD2171) Monotherapy and the Combination of Cediranib with Lomustine to the Efficacy of Lomustine Alone**

Cediranib is a highly potent and selective VEGF signaling inhibitor that targets all three VEGF receptors.2 VEGF signaling is a key driver of angiogenesis - the formation of new blood vessels that tumors need to grow and spread.

Metastatic

Metastatic Brain Cancer

- **Evaluating the Treatment Effects of Surgery plus GLIADEL Wafer in Patients with Metastatic Brain Cancer**

The purpose of this study is to find out the effects of surgery and the placement of Gliadel wafers on the neurocognitive function of patients with metastatic brain cancer.

Completed Research Support (Co-Investigator)

- "Role of tetracycline in the treatment of chronic progressive external ophthalmoplegia (CPEO)". Principal Investigator: Lenworth Johnson, Professor of Ophthalmology (Neuro-Ophthalmology) and Neurology, University of Missouri - Columbia. Co-Investigator: A.I. Omar, Neurology Chief Resident, University of Missouri - Columbia. University of Missouri IRB Project #: 1059518. (1/06/ - 7/06)

Description: This is a retrospective analysis of the effect of tetracycline antibiotics on ocular motility in chronic progressive external ophthalmoplegia. CPEO is a hereditary mitochondrial myopathy that results in progressive weakness of the extraocular muscles involved in eye movement. Patients with CPEO have limited eye movements which can result in double vision, difficulty with reading and gait disturbance. These symptoms are chronic and progressive, as the name implies, and can be debilitating for patients affected by this condition. To date, there are no available effective treatment options for this disease. Some of our patients have been treated with tetracycline and have had apparent improvement in eye movement. After retrospectively analyzing the data, we have shown for the first time that tetracycline can play a role in improving ocular motility and in delaying progression of the disease.

- A Phase I Study of Temozolomide and RAD001C in Patients With Malignant Glioblastoma Multiforme, Sponsor: National Cancer Institute of Canada

RATIONALE: Drugs used in chemotherapy, such as temozolomide, work in different ways to stop the growth of tumor cells, either by killing the cells or by stopping them from dividing. Everolimus may stop the growth of tumor cells by blocking some of the enzymes needed for cell growth and by blocking blood flow to the tumor. Giving temozolomide together with everolimus may kill more tumor cells.

PURPOSE: This phase I trial is studying the side effects and best dose of everolimus when given together with temozolomide in treating patients with newly diagnosed, recurrent, or progressive malignant glioblastoma multiforme.

- Randomized Phase 3 Open Label Study - **Enzastaurin** vs. Lomustine in Glioblastoma, Sponsor: Eli Lilly and Company

This protocol will test the activity of Enzastaurin vs. Lomustine in the treatment of recurrent brain cancer (specifically intracranial glioblastoma multiforme).

- The Temozolomide **RESCUE Study**: A Phase II **Trial** of Continuous (28/28) Dose-Intense Temozolomide (CDIT) Chemotherapy After Progression on Conventional 5/28 Day Temozolomide in Patients With Recurrent Malignant Glioma, Sponsor: Schering-Plough
Schering Canada, Inc.

The purpose of this non-randomized, open-label, multicenter, Phase II, 2-stage design, RESCUE study is to test the hypothesis that continuous 28-day oral dosing (28/28) with dose-intense temozolomide (50 mg/m²) for up to 12 months may overcome resistance and be effective in the management of adult patients with malignant glioma who have failed following at least 2 cycles (2 months) of conventional 5-day (5/28) cycles of high-dose temozolomide (150-200 mg/m²).

- Primary Chemotherapy With **Temozolomide** Versus **Radiotherapy** in Patients With Low Grade Gliomas After Stratification for Genetic 1p Loss: A Phase III Study, Sponsor: European Organization for Research and Treatment of Cancer and the National Cancer Institute of Canada.

RATIONALE: Radiation therapy uses high-energy x-rays to kill tumor cells. Drugs used in chemotherapy, such as temozolomide, work in different ways to stop the growth of tumor cells, either by killing the cells or by stopping them from dividing. It is not yet known whether radiation therapy is more effective than temozolomide in treating gliomas.

PURPOSE: This randomized phase III trial is studying radiation therapy to see how well it works compared to temozolomide in treating patients with gliomas.

TEACHING EXPERIENCE:

Teaching Medical Residents and Medical students from Northwestern University Feinberg School of Medicine and The University of Chicago Pritzker School of Medicine including direct supervision on medical wards as well as classroom lectures, bedside demonstrations and supervision of patient related procedures.

Teaching Assistant: Neurology Block (MED2104; Course Director: Prof. W. Hendelman)
University of Ottawa, Faculty of Medicine
01/1999 - 02/2000

This position involved teaching the "Neurology block" to 2nd year medical students which included theoretical Neuroanatomy, Neurology, and Neuroradiology case studies as well as cadaver specimens and laboratory demonstrations.

Taught medical students as floor and consulting Neurology Resident.

Taught Introduction to Physical Diagnosis and Advanced Physical Diagnosis (APD) to 1st and 2nd year medical students - University of Missouri- Columbia

Faculty Lecture to 1st year medical students (Neurology Block): CSF Dynamics and Intracranial Pressure, February 2, 2006

Posted online WebCT, University of Missouri – Columbia

PROFESSIONAL AFFILIATIONS:

- American Academy of Neurology, Section of NeuroOncology, member since 2009
- American Academy of Neurology (AAN), member since 2003 (Junior Member - Active)
- Society for NeuroOncology (SNO), USA, member since 2008
- College of Physicians and Surgeons of Ontario (CPSO), Canada (member 2006 - 2008)
- Society for Neuroscience (SFN), USA: member since 2000 (Inactive)
- American Physiological Society (major affiliation with CNS section): member since 1999 (Inactive)
- Egyptian Medical Syndicate (Fully Licensed Physician), Egypt: member since 1996

LANGUAGES AND TRAVEL:

Fluent in English and Arabic with knowledge of French, Serbian, and Persian. Lived and visited the following countries either for education, business, or pleasure: China, Japan, Mongolia, Iran, India, Pakistan, Kuwait, Jordan, Egypt, Morocco, Sweden, Finland, Denmark, Norway, Germany, Austria, Netherlands, Belgium, Luxembourg, France, England, Bulgaria, Romania, Yugoslavia, Spain, Greece, Italy, Canada, and the United States.

COMPUTER SKILLS:

OS Platforms: Windows 95/98, ME, MS Dos, MacOs, NT.

Applications: Wordprocessing Software (MS Word, WordPerfect), Statistical Analysis Software (Excel, Sigma Plot), Image Acquisition and Analysis (NIH Image, Northern Eclipse, etc.), Image Processing, Computer Graphics and Animation (Adobe Photoshop, Corel Photopaint/Corel Draw etc.), Presentation (Power Point).

Internet: Professional Medline Searches, Netscape, Explorer.

Web Page Design: HyperText Markup Language (HTML), Java Script Programming, C++

Programming (Created software for diagnosing fetal distress in high risk pregnancies; copyrighted

CLINICAL PROCEDURAL SKILLS:

Mastered various procedural skills during internship, residency and private practice including:

Internal Medicine Skills: Thoracentesis, paracentesis, arthrocentesis, bone marrow biopsies, phlebotomy, peripheral IV line access, femoral central lines, EKG hookup and interpretation, advanced airway management including intubation as well as various ACLS skills (Ran 7 codes as code physician during Medicine Internship and Neurology residency. ATLS skills including chest tube insertions and evaluation and management of various traumas including head traumas.

Basic Surgical Skills: Including suturing and wound closure, abscess drainage etc., also assisted in some neurosurgical procedures during a 2 month Neurosurgery internship rotation including VP shunt and ventriculostomy placement as well as some craniotomies for evacuation of epidural hematomas etc..

Neurology Skills:

Lumbar punctures (over 600 procedures to date), Tensilon tests, EEG and sleep studies interpretation, performing and interpreting nerve conduction studies as well as EMG of extremities and paraspinal muscles. Excellent skills in neuroimaging interpretation (CTs, MRI/MRA head and neck etc.).

Completed an intensive 1 month training in Critical Care/Intensive Care Neurology at Barnes Jewish Hospital, Washington University in St. Louis, October 2005 (Barnes Jewish is ranked as one of the top 10 hospitals in the United States). Patients managed included gunshot wounds to the head, ruptured cerebral aneurysms, Traumatic brain injury, Brain abscesses, intracranial bleeds, patients requiring emergency neurosurgical interventions, pre and post-procedure care for patients undergoing neuroendovascular procedures such as cerebral angioplasty and coiling of intracranial aneurysms.

NeuroOncology Skills:

Extensive knowledge of chemotherapeutic agents, their methods of administration, potential toxicities and their management

Management of neurologic complications related to systemic cancer

Diagnosis and management of Primary Brain Tumors (over 120 different subtypes)

Knowledge of radiation therapy utilization for the treatment of brain and spinal cord cancers including Whole Brain Radiation Therapy (WBRT), Stereotactic Radiosurgery as well as Intensity Modulated Radiation Therapy (IMRT) for the treatment of brain cancer adjacent to critical brain structures.

Extensive knowledge of chemotherapy, radiotherapy and immunotherapy for the treatment of primary central nervous system lymphomas including the use of monoclonal antibodies that target molecules specific to cancer cells, thereby destroying cancer cells without affecting normal brain tissue.

Extensive knowledge in the treatment of leptomeningeal metastases (spread of systemic cancer to the brain coverings as well as the cerebrospinal fluid) including the use of Ommaya reservoirs for infusion of chemotherapy drugs directly into the brain cavities. **Recognized as an international expert in the treatment of leptomeningeal cancer (wrote a book chapter in the leading international Cancer Neurology reference textbook, Cancer Neurology in Clinical Practice.**

Currently developing a “Brain Metastases Clinic” at the NorthShore University HealthSystem, the only Brain Metastases Clinic in the State of Illinois.

PUBLICATIONS:

Peer-Reviewed Journal Articles: (cited 28 times)

- A.I. Omar and W.P. Mason. Temozolomide: The evidence for its therapeutic efficacy in malignant astrocytomas, *Core Evidence* 2009;4 93–111
- A.I. Omar, L.N. Johnson. Tetracycline delays ocular motility decline in chronic progressive external ophthalmoplegia. (*Neurology*, 2007; 68: 1159)
- Mooney DM, Zhang L, Basile C, Senatorov VV, Ngsee J, Omar AI, Hu B.. Distinct forms of cholinergic modulation in parallel thalamic sensory pathways. *Proc. Natl. Acad. Sci. U S A.* 2004 Jan 6;101(1):320-4. Epub 2003 Dec 22. **Cited 17 times**
- A.I. Omar and B. Hu. Detection of early tissue injury in vivo using fluorescent cell death markers in rat dentate gyrus. *Neurosci Lett.* 2003 Sep 18;348(3):143-6.
- A.I. Omar, V.V. Senatorov, and B. Hu. Sodium-potassium adenosine triphosphatase inhibition enhances membrane accumulation of DiI in rat hippocampus in vivo. *Neuroscience* 102 (2), 353-359. (2001) **Cited twice**
- A.I. Omar, V.V. Senatorov, and B. Hu. Ethidium bromide staining reveals rapid cell dispersion in the rat dentate gyrus following ouabain-induced injury. *Neuroscience* 95 (1), 73-80. (2000) **Cited 9 times**

PHD Dissertation:

- A.I. Omar. Tissue injury and remodeling in rat hippocampal dentate gyrus following Na⁺, K⁺, ATPase Inhibition. PhD Dissertation, University of Ottawa, Faculty of Medicine, Dissertation Abstracts International and the National Library of Canada, (Advisor: Bin Hu, MD, PhD) (©2002). **Dissertation Nominated by Reviewers for University Award.**

Book Chapters and Reviews:

- A.I. Omar and W.P. Mason. Anaplastic astrocytomas in Handbook of Clinical Neurology – Neurooncology (M.J. Aminoff, F. Boller and D.F. Swaab, eds.), Elsevier Press, 2007) (In Press)
- A.I. Omar and W.P. Mason. Leptomeningeal Metastases in *Cancer Neurology in Clinical Practice* (David Schiff, MD, Patrick Y. Wen, MD and Santosh Kesari, MD, PhD, eds.), Humana Press Inc., Totowa, NJ., (© 2007)

- A.I. Omar and W.P. Mason. Glial Tumors: Low-grade and anaplastic oligodendrogliomas, *International Neurology* (M. Rosenfeld, MD and J. Dalmau, MD, eds.) (In Press)
- A.I. Omar and W.P. Mason. The Molecular Basis For The Genesis Of Malignant Gliomas: Targets For Novel Anti-Cancer Therapeutics. (Oncology Rounds 2006;)

Abstracts:

- M. K. Nicholas, R. V. Lucas, J. Arzbaecher, N. Paleologos, H. Krouwer, M. Malkin, **A.I. Omar**, N. A. Vick Bevacizumab in combination with temozolomide in the adjuvant treatment of newly diagnosed glioblastoma multiforme: Preliminary results of a phase II study. *J Clin Oncol* 27:15s, 2009 (suppl; abstr 2016)
- A.I. Omar and L.N. Johnson. Tetracycline delays the decline in ocular motility in chronic progressive external ophthalmoplegia. (16th International Neuro-ophthalmology Society (INOS) Congress 2006, *Neuro-ophthalmology*, Volume 30, Number 6, 2006)
- A.I. Omar, C. Basile, J. Ngsee, D. Mooney, and B. Hu. Differential expression of m1 and m2 muscarinic receptors in rat lemniscal and non-lemniscal medial geniculate body. *Soc. Neurosci. Abstr.* Vol. 28, Orlando, FL. (November 2002)
- A.I. Omar and B. Hu. Monitoring DNA condensation in vivo using the DNA fluorescent probe Hoechst 33342 following ouabain-induced injury. *Soc. Neurosci. Abstr.* Vol. 27, San Diego, CA. (November 2001)
- A.I. Omar and B. Hu. Intrahippocampal ouabain infusion upregulates proliferative activity of the subventricular zone progenitor cell population. *Soc. Neurosci. Abstr.* Vol. 26, Part I, p. 286. Presented at the Society For Neuroscience 30th annual meeting, New Orleans, LA. (November 4-9, 2000)
- A.I. Omar and B. Hu. Evidence for a lesion-induced accelerated migration of newly born precursor cells in adult rat dentate gyrus. *EB 2000 Abstr. Add.* Presented at the "Experimental Biology 2000" Conference, San Diego, CA. (April 2000)
- A.I. Omar, V.V. Senatorov, and B. Hu. Enhanced membrane uptake of a lipophilic fluorescent probe following intrahippocampal ouabain administration: A possible in vivo marker for membrane damage. *Soc. Neurosci. Abstr.* Vol. 25, Part I, p. 995. Presented at the Society for Neuroscience 29th annual meeting, Miami Beach, FL. (October 23-28, 1999)
- A.I. Omar, V.V. Senatorov, M. Tiberi, and B. Hu. Rapid induction of granule cell dispersion in the dentate gyrus of the adult rat hippocampal formation by ouabain. *Soc. Neurosci. Abstr.* Vol. 24, Part I, p. 718. Presented at the Society for Neuroscience 28th annual meeting, Los Angeles, CA. (November 7-12, 1998)

Presentations:

- A.I. Omar. Rapid Onset of Obstructive Hydrocephalus and Seizures in an Otherwise Healthy Female Patient. 10/6/2008. Clinical Neurosciences conference, NorthShore University HealthSystem and Northwestern University Feinberg School of Medicine

- AI Omar. Brain metastases: The current state of knowledge. 12/11/08. Medicine Grand Rounds, NorthShore University HealthSystem and Northwestern University Feinberg School of Medicine

- AI Omar. Neuro-HIV. 3/21/09, Clinical Neurosciences conference, NorthShore University HealthSystem and Northwestern University Feinberg School of Medicine

- A.I. Omar. Molecular approaches for the treatment of malignant astrocytomas: From the bench to the bedside. Neurology/Neurosurgery Grand Rounds. University of Missouri - Columbia (April 26, 2006)

- A.I. Omar. New-onset seizures in a young female: A diagnostic challenge. Neurology/Neurosurgery Grand Rounds. University of Missouri - Columbia (November 23, 2005)

- A.I. Omar. Guidelines for the management of the severely head-injured patient. Neurology/Neurosurgery Grand Rounds. University of Missouri - Columbia (October 6, 2004)

- A.I. Omar. Critical care strategies in traumatic brain injury. Invited speaker at the Division of Pulmonary and Critical Care Medicine. University of Missouri - Columbia. (October 19, 2004)

- A.I. Omar. Injury induced remodeling in the Central Nervous System. Neurology/ Neurosurgery Grand Rounds, University of Missouri, Columbia, Missouri. (April, 2004)

- A.I. Omar and B. Hu. Local and distant tissue remodeling in rat hippocampus following ouabain-induced injury. Presented at the University of Ottawa, Cellular and Molecular Medicine Seminars. (April 18, 2001)

- A.I. Omar and B. Hu. Early tissue reactive changes following sodium-potassium adenosine triphosphatase pump inhibition in the adult rat dentate gyrus. Presented at the University of Ottawa, Cellular and Molecular Medicine Seminars. (November 2000)

- A.I. Omar. Journal Club Presentation: Presented at the "Neurotalks" meeting at the Loeb Health Research Institute, Ottawa, Canada. (October 5, 2000) Prenatal stress produces learning deficits associated with an inhibition of neurogenesis in the hippocampus. V. Lemaire et al. Proc. Natl. Acad. Sci. USA, Vol. 97, Issue 20, 11032-11037. (2000)

- A.I. Omar and B. Hu. Dynamics of lesion-induced proliferation and cellular reorganization in the adult rat brain. Presented at the University of Ottawa, Cellular and Molecular Medicine Seminars. (December 1999)

- A.I. Omar and B. Hu. In vivo cellular and molecular responses to Na⁺, K⁺, ATPase Pump blockade in the rat dentate gyrus. Presented at the University of Ottawa, Faculty of Medicine seminar series. (April 1999)

- A.I. Omar, V.V. Senatorov, and B. Hu. Ouabain induces rapid cell dispersion and network remodeling

in the adult rat hippocampal formation. Presented at the University of Ottawa, Faculty of Medicine seminar series. (April 1998)