ATOM SARKAR, M.D./Ph.D.
The Ohio State University
Department of Neurological Surgery
(Atom.Sarkar@osumc.edu)

EDUCATION:

2005	Chief Resident, Neurosurgery, Mayo Clinic, Rochester, MN.
2002-2004	Postdoctoral fellowship, Columbia University, New York, NY.
1998-2005	Neurosurgery residency, Mayo Clinic, Rochester, MN.
1990-1998	M.D./Ph.D. student, Univ. of Miami School of Medicine, Miami, FL. Ph.D., Physiology and Biophysics, Molecular Neuroscience: "Cloning and Characterization of a Calcitonin Receptor from the Guinea Pig Brain"
1990	B.S. Biology, Brown University, Prov. RI.

HONORS:

Residency

* Young Investigator Travel Scholarship, the Academy of Molecular Imaging (2004).
* American Association of Neurologic Surgeons, Neurosurgery Research and Education Foundation; Research Fellow (2003-2004)

Medical/Graduate School

* Graduate Thesis Work completed with honors (1998)
* Faculty Commendation, Excellence in Biomedical Teaching (1994, 1995, 1996, and 1997)
* National Institutes of Health Certificate of Recognition (1997)
* National Institutes of Health/American Medical Student Association Excellence in Research Award (1997)
* University of Miami Travel Fellowship (1997)

College

* Westinghouse Science and Technology College Scholarship (1984-1988)
* U.S. Steel Bioengineering and Technology College Scholarship (1984-1988)
* Visiting Scientist Fellowship, Ludwig Institute for Cancer Research, Bern, Switzerland (1985)

SOCIETY MEMBERSHIPS:

* American Academy of Nanomedicine, Founding Member
* AANS/CNS Section on Tumors, Resident Member
* American Association for the Advancement of Science
* American Association of Neurological Surgeons (AANS), Resident Member
* Biophysical Society
* Congress of Neurological Surgeons (CNS), Resident Member
* New York Academy of Sciences
* Society for Neuroscience

EXPERIENCE:

2006-	Assistant Professor, Dept. of Neurological Surgery; Director of Functional Neurosurgery; Director of Neurological Nanomedicine, The Ohio State University, Columbus, OH
2005	Chief Resident Associate, Dept. of Neurological Surgery, Mayo Clinic, Rochester, MN
2002-2004	Postdoctoral fellow, Columbia University, New York, NY
1998-2005	Neurosurgical resident, Mayo Clinic, Rochester, MN
1990-1998	M.D./Ph.D. student, Dept. of Physiology and Biophysics, University of Miami School of Medicine, Miami, FL
1989-1990	Laboratory Assistant Dept. of Biochemistry, University of Georgia, Athens, GA
1988	Summer Fellowship: Dept. of Biochemistry, University of Georgia, Athens, GA
1987	Summer Fellowship: Dept. of Molecular Virology, Rockefeller University, New York, NY
1986	Summer Fellowship: Dept. of Molecular Virology, Rockefeller University, New York, NY
1985	Summer Fellowship: Ludwig Institute for Cancer Research, Bern, Switzerland
1984	Summer Fellowship: Dept. of Molecular Parasitology, Rockefeller University, New York, NY
1983	Summer Research: Dept. of Molecular Parasitology, Rockefeller University, New York, NY
1982	Summer Research: Viral Oncology/Tumor Biology Lab, Memorial-Sloan Kettering Cancer Center, New York, NY

TEACHING EXPERIENCE:

2004 The Cellular Physiology of Disease (Columbia University)

1993-1998 Small Group Leader (University of Miami School of Medicine)

* Cellular Biophysics
* Neurophysiology
* Systemic Physiology (Cardiovascular, Respiratory, Renal, and Gastrointestinal)
* Canine Cardiovascular Interventional Laboratory

PUBLICATIONS:

A. Sarkar and E. Antonio Chiocca. Editorial: Prognostic Indicators. *J. Neurosurg*. 2006, 105:161-162.

A. Sarkar, S. Caamano, and J. M. Fernandez. The Elasticity of Individual Titin PEVK Exons Measured by Single Molecule Atomic Force Microscopy. *J. Biol. Chem.* 2005, 280(8): 6261-6264.

A. Sarkar, R. B. Robertson, and J. M. Fernandez. Simultaneous Atomic Force Microscope and Fluorescence Measurements of Protein Unfolding using a Calibrated Evanescent Wave. *Proc Natl Acad Sci U S A* 2004, 101(35):12882-12886.

A. Sarkar and M. J. Link. Distal Anterior Inferior Cerebellar Artery Aneurysm Masquerading as a Cerebellopontine Angle Tumor: Case Report and Review of Literature. *Skull Base* 2004, 14(2):101-107.

A. Sarkar, P. D. Brown, D. A. Gorman, and B. E. Pollock. Evaluation of Gamma-Knife Radiosurgery in the Treatment of Oligodendroglial and Mixed Oligodendroastrocytomas. *J. Neurosurg* 2002, (5 Suppl):653-6.

A. Sarkar and I. M. Dickerson. Cloning, Characterization, and Expression of a Calcitonin Receptor from Guinea Pig Brain. *J. Neurochem* 1997, 69(2):445-464.

M. Sudol, H. Greulich, L. Newman, **A. Sarkar**, J. Sukegawa, T. Yamamoto. A novel Yes-related kinase, Yrk, is expressed at elavated levels in neural and hematopoetic tissues. *Oncogene* 1993, 8(4):823-831.

A. Hossain, **A. Sarkar**, N. H. Sarkar. Mixed inocula of mouse mammary tumor cell subpopulation results in changes of organ-specific metastasis. *Clin Exp Metastasis* 1991, 9(6):501-15.

D. E. Stewart, **A. Sarkar**, J. W. Wampler. Occurrence and role of cis peptide bonds in protein structures. *Peptides* 1990, 214(1):253-260.

A. Sarkar, W. H. Gunzburg. Spleen specific expression of an MMTV related transcript associated with the Mtv-6 locus in BALB/c mice. *Virology* 1986, 154(1):233-239.

M. Wallach and **A. Sarkar**. Evolutionary conservation of histidine-rich genes and RNAs in malaria parasites. *Prog Clin Biol Res* 1984, 155:109-117.

INVITED LECTURES:

Nanomechanics of the Nervous System. Advanced Technologies in the Neurosciences, Translational Research, and Health Policy. Dartmouth/Center for the Integration of Medicine and Innovative Technology (Harvard/MIT/Draper Lab) (Oct. 2005)

Single Molecule Micromechanics - Building Tools for Nanomedicine. Department of Neurosurgery, Ohio State University (August 2005).

Single Molecule Techniques Uncover the World of Mechanobiology. Department of Biomedical Engineering, Mayo Clinic College of Medicine (May 2005).

Developing Tools for Exploring Forces in the CNS—One Molecule at a Time. Spinal Cord Injury Group, Mayo Clinic College of Medicine (April 2005).

Nanotechnology, Neurosurgery, and Single Molecules—the New Triumvirate. Department of Neurological Surgery, Mayo Clinic College of Medicine. (April 2005).

Breaking the Diffraction Limit Captures Single Molecule Dynamics. *Second International Symposium on EMCCD Technology, New Have, CT. Sponsored by Yale University (New Have, CT), Andor Technology (Belfast, Northern Ireland), and the EU Programme for Peace and Reconcilliation* (April 2005).

Understanding Forces in the CNS, One Molecule at a Time. University of Pittsburgh Medical Center, Department of Neurological Surgery (March 2005).

Protein Micromechanics and Nanotechnology as New Tools for Neuro-Oncology Research. Mayo Clinic College of Medicine, Tri-campus Neuro-Oncology Research Videoconference (Feb. 2005).

Developing Nanobiological Tools for Neurosurgical Research. Wayne State University School of Medicine, Department of Neurosurgery (Dec. 2004).

Evanescent Nanometry: A New Tool for Single Molecule Investigation. *10th International Workshop on "Single Molecule Detection and Ultrasensitive Analysis in Life Sciences"*(Berlin, Germany, Sept. 2004)

Mechanobiology as a New Paradigm for Neurosurgical Research. Dartmouth-Hitchcock Medical Center, Departments of Neurosurgery and Neurology (July 2004).

Building Tools for Exploring Mechanobiology. University of Miami School of Medicine, Department of Physiology and Biophysics (Jan. 2004).

Combining Atomic Force Microscopy and Total Internal Reflection Fluorescence Microscopy. *First International Symposium on EMCCD Technology, Limavady, Northern Ireland. Sponsored by Queens University (Belfast, Northern Ireland), Andor Technology (Belfast, Northern Ireland), and the EU Programme for Peace and Reconcilliation* (Sept. 2003).

MEETING/TALKS:

A. Sarkar and Julio M. Fernandez. Direct Single Molecule Mechanical Studies of Protein Fibers. *67th Annual Meeting of the American Academy of Neurological Surgery* (2005).

A. Sarkar, R. B. Robertson, and J. M. Fernandez. Measuring Distance with Nanometer Precision. *Annual Meeting of the Academy of Molecular Imaging* (2004).

A. S. R. Koti, **A. Sarkar**, R. B. Robertson, C. Badilla-Fernandez, and J. M. Fernandez. Single Molecule Force and Fluorescence Studies of the Enhanced Green Fluorescent Protein (EGFP). *48th Biophysical Society Annual Meeting* (2004).

A. Sarkar, P. D. Brown, D. A. Gorman, and B. E. Pollock. Evaluation of Gamma-Knife Radiosurgery in the Treatment of Oligodendroglial and Mixed Oligodendroastrocytomas. *11th International Meeting of the Leksell Gamma Knife Society, Prague, Czech Republic* (2002).

A. Sarkar, M. Ebersold, L. Quast. Central Nervous System von Hippel-Lindau: Management and Treatment. *Fourth International Symposium on von Hippel-Lindau* (2000).

A. Sarkar, H. Siddique, and N.H. Sarkar. Molecular Modeling of the Mouse Mammary Tumor Virus Nucleocapsid Zinc-Finger Protein. *American Society for Microbiology Annual Meeting* (1989).

MEETING/POSTER PRESENTATIONS:

S. Caamano, **A. Sarkar**, and J. M. Fernandez. The Elasticity of Individual Titin PEVK Exons Measured by Single Molecule Atomic Force Microscopy. *49th Biophysical Society Annual Meeting* (2005).

A. Sarkar, R. B. Robertson, and J. M. Fernandez. Watching Single Molecules Unfold One at a Time. *54th Congress of Neurological Surgeons* (2004).

A. Sarkar, R. B. Robertson, and J. M. Fernandez. Application of Nanotechnology to Neurosurgical Research. *73rd American Association of Neurological Surgeons Meeting* (2004).

A. Sarkar, R. B. Robertson, Li H., and J. M. Fernandez. Direct Measurements of Total Internal Reflection Fluorescence Evanescent Fields by Atomic Force Microscopy. *48th Biophysical Society Annual Meeting* (2004).

A. Sarkar, R. E. Wharen, Jr., and R. J. Uitti. Novel Cyst Formation after Deep Brain Stimulator Placement: Description of a Case and Treatment. *52nd Congress of Neurological Surgeons* (2002).

A. Sarkar and B.E. Pollock. New Onset Trigeminal Neuralgia after Vestibular Schwannoma Radiosurgery: Description of Case and Treatment. *51st Congress of Neurological Surgeons* (2001).

A. Sarkar, M.J. Ebersold, and L.M. Quast. Spinalcord Hemangioblastomas in von Hippel Lindau Syndrome—A 25-Year Mayo Clinic Review. *70th American Association of Neurological Surgeons Meeting* (2001).

A. Sarkar and M.J. Link. Intracranial Aneurysm in Association with Polyarteritis Nodosa. *50th Congress of Neurological Surgeons* (2000).

A. Sarkar and I.M. Dickerson. An Exploration of the Physiologic Role of the Calcitonin Receptor. *American Medical Student Association Annual Meeting* (1997).

A. Sarkar and I.M. Dickerson. Analysis of Calcitonin Receptors in the Guinea Pig. *Eastern Student Research Forum* (1997).

A. Sarkar and I.M. Dickerson. Cloning, Characterization and Functional Studies of a Guinea Pig Diencephalic Calcitonin Receptor. *Society for Neuroscience 26th Annual Meeting* (1996).

A.E. Leubke, **A. Sarkar**, G.P. Dahl, and I.M. Dickerson. Tissue Distribution of the CGRP Receptor. *10th International Congress of Endocrinology* (1996).

A. Sarkar and I.M. Dickerson. Cloning the Guinea Pig Calcitonin Receptor. *Society for Neuroscience 24th Annual Meeting* (1994).

GRAND ROUND PRESENTATIONS:

Dept. of Neurological Surgery/Neurology, Mayo Clinic, Nov., 2000; "Multiple Endocrine Neoplasia."

Dept. of Neurological Surgery, Mayo Clinic, April, 2000; "Transcranial Doppler—Uses, Misuses, and Rational."

Dept. of Neurological Surgery, Mayo Clinic, September 4, 1999; "The von Hippel-Lindau Syndrome."

Dept. of Neurological Surgery, University of California San Francisco, Sept., 1997; "Molecular Medicine in Neurosurgery."

Dept. of Neurological Surgery, University of Miami School of Medicine, August, 1997; "New Possibilities for CNS Tumor Treatment—Genetic Drug Therapy."

EXTERNSHIPS:

Neurological Surgery 4 week rotation, University of California San Francisco; Sept. 8 – Oct. 3, 1997

Neurological Surgery 4 week rotation, University of Washington, Seattle; Oct. 6 – 31, 1997.