## **CURRICULUM VITAE**

#### John I. Miller, MD, FAANS, FACS

Director, Neurosurgery Specialty Center Kingsbrook Jewish Medical Center David Minkin Rehabilitation Institute Suite 300 585 Schenectady Avenue Brooklyn, New York 11203-1891 e-mail: jmiller@kingsbrook.org (718) 604-5500 fax: (718) 363-6590

website: www.johnmillermd.com

Senior Partner NeuroAxis Neurosurgical Associates, PC Kew Gardens Office:

> Suite 602 80-02 Kew Gardens Road Kew Gardens, NY 11415 (718) 459-7700 fax: (718) 286-1140 cell: (917) 612-5219 john.miller@neuroaxismd.com

Chief, Division of Neurosurgery NYU Langone - Lutheran Medical Center 150 55<sup>th</sup> Street Brooklyn, New York 11220 (718) 630-6580 fax: (347) 377-4781 john.miller@nyumc.org

Active Appointments: (currently active)

- 2014 Attending, Division of Neurosurgery, Department of Surgery, Methodist Hospital, New York Presbyterian Network, Brooklyn, New York
- 2013 Chief, Division of Neurosurgery, Department of Surgery, NYU Langone Lutheran Medical Center, Brooklyn, New York
- 2013 Senior Attending, Department of Surgery, Brooklyn Hospital, Brooklyn, New York
- 2012 Attending, Department of Neurosurgery, Mount Sinai Hospital, New York, New York
- 2011 Visiting Clinical Associate Professor, Neuroscience Institute, Department of Neurosurgery, SUNY Downstate, College of Medicine, Brooklyn, New York
- 2009 Attending Neurosurgeon, The Mount Sinai Hospital of Queens, Queens, New York
- 2005 Attending Neurosurgeon, Maimonides Medical Center, Department of Surgery, Brooklyn, New York
- 2004 Attending Neurosurgeon, Mount Sinai West, formerly Roosevelt St. Lukes, Department of Neurosurgery, New York, New York
- 2004 Attending Neurosurgeon & Pediatric Neonatal Neurosurgical Consultant, Lenox Hill Hospital, Northwell Health (formerly North Shore/LIJ Network), New York, New York
- 2003 Director, Neurosurgical Services, Department of Surgery, Kingsbrook Jewish Medical Center, Brooklyn, New York
- 1999 Senior Attending Neurosurgeon, Jamaica Hospital Medical Center, Jamaica, New York

(Continuation of Active Appointments)

1999	Senior Partner,	NeuroAxis	Neurosurgical	Associates,	PC,	Kew Gardens	New	York

1998 Attending Neurosurgeon, Department of Neurosurgery, North Shore University Hospital, Northwell Health (formerly North Shore/LIJ Healthcare Network), Manhasset, New York

# Prior Staff Appointments: (currently inactive)

2003-14	Chairman, Department of Neurosurgery, Long Island College Hospital, Brooklyn, New York, Continuum Inc. followed by SUNY Downstate Medical Center
2000-01	Attending Neurosurgeon, New York Hospital Medical Center of Queens, New York Presbyterian Network, Flushing, New York
1999-2007	Co-Director, Neurosurgical Services, Caritas Healthcare Systems, St. Johns Queens Hospital & Mary Immaculate Hospital, Queens, New York
1999-2004	Director, Neurosurgical Services, Wyckoff Heights Medical Center, New York Presbyterian Network, Brooklyn, New York
1990-98	Director, Division of Pediatric Neurosurgery, SUNY Downstate University Hospital of Brooklyn, Brooklyn, New York
1987-98	Assistant Professor, Department of Neurological Surgery, SUNY Downstate, Brooklyn, New York
1991-94	Acting Director, Laboratory of Cerebral Metabolism, Department of Neurosurgery, SUNY Downstate, Brooklyn, New York
1989-90	Consultant, Pediatric Neurosurgery, Department of Ambulatory Care, Woodhull Medical and Mental Health Center, Brooklyn, New York
1987-90	Attending Physician, Department of Surgery, Coney Island Hospital, Brooklyn, New York
1986-87	Chief Resident, Department of Neurological Surgery, SUNY Downstate & Kings County Hospital Center, Brooklyn, New York
1982-87	Resident, Department of Neurological Surgery, SUNY Downstate & Kings County Hospital Center, Brooklyn, New York
1981-82	Resident, Pediatric Neurosurgical Clinical Fellow, Department of Neurosurgery, Children's Hospital National Medical Center, Washington, D.C.
1981-82	Visiting Neurosurgical Research Fellow, Membrane Transport Section, National Cancer Institute, National Institutes of Health, Bethesda, MD

## (continuation of Prior Appointments)

1980-81	Surgical Resident, University of Chicago Hospitals and Clinics, Department of Orthopedic Surgery, Pritzker School of Medicine, Chicago, Illinois
1979-80	Surgical Intern, University of Chicago Hospitals and Clinics, Department of Surgery, Pritzker School of Medicine, Chicago, Illinois
1974-75	Chemist, Food and Drug Administration, Bureau of Foods, Division of Nutrition, Section of Carbohydrates, Protein and Amino Acids, Washington, D.C.

## Date and Place of Birth:

September 26, 1953 Baltimore, Maryland

# Marriage:

Emily Gail Grabel Miller New York, N.Y.

Children:	Charles Grabel Miller, Ph.D.	Mollie Ruth Miller
	Born: 6/21/86	Born: 1/13/88
	Graduate	Graduate
	Stuyvesant High School	Stuyvesant High School
	Univ. of Pennsylvania	Cornell University
	MD/PhD Medical Scientist Training Program	College of Art, Architecture and
Planning	Rutgers School of Medicine &	Fashion / Jewelry Design, Macy's
	Princeton University	New York City
	Awarded Ph.D., Molecular Biology, 2014	

Sydney Rose Miller	Nicholas Grabel Miller
Born: 11/10/89	Born: 3/30/95
Graduate	Graduate
Columbia Grammar Prep	Stuyvesant High School
Bowdoin College	Junior, Honors Program Scholarship
Teacher, High School English	Tulane University
New Orleans, Louisiana	New Orleans, Louisiana
M.Ed. Program, NYU, 2014	

### **Education:**

B.S., Chemistry	M.D.
American University	Georgetown University
Washington, D.C.	School of Medicine
1971 - 1974	Washington, D.C.
	1975-1979

#### **Medical Licensure:**

State of New York

#### **Board Status:**

Diplomate of the American Board of Neurological Surgery	05.28.92
Member, American Board of Pediatric Neurological Surgery	11.15.97

## Awards:

New York Society for Neurosurgery, Elsberg Award for Resident Research, Rockefeller University New York, New York 1984

#### Society Memberships:

Fellow, American College of Surgeons	FACS		
Fellow, American Association of Neurological Surgeons	FAANS		
Congress of Neurological Surgeons	(CNS)		
American Society for Pediatric Neurosurgery	(Inactive as of 2006)		
New York Society for Neurosurgery	(President 1998 – '99)		
New York State Society for Neurosurgery			
Brooklyn & Long Island Chapter, American College of Surgeons			
Medical Society of the State of New York (MSSNY)			
Kings County Medical Society			
American Medical Association			
Section on Tumors, AANS & CNS			
Section on Neurotrauma & Critical Care, AANS & CNS			
Section on Disorders of the Spine and Peripheral Nerves, AANS & CNS			
Section on Pediatric Neurological Surgery, AANS & CNS			

## Bibliography

## **Patent**

Inventors:	Miller JI, Bologn	ese P:	Method and Apparatus for Monitoring Local Cerebral Physiology
United States Patent Number:	5, 579,774	Date:	December 3, 1996

# **Chapters**

Parsa AT, **Miller JI**: Neurosurgical Diseases of the Spine and Spinal Cord: Surgical Considerations, in Cottrell J, Smith DS (eds) 4<sup>rth</sup> edition: <u>Anesthesia and Neurosurgery</u>. Philadelphia: Mosby, 2001, pp 531-555.

Milhorat TH, **Miller JI**: Neurosurgery of the Newborn, in Avery GB, Fletcher MA, McDonald MG (eds): <u>Neonatology: Pathophysiology and Management of the Newborn</u>. Philadelphia: JB Lippincott, 1994, pp 1139-1163.

**Miller JI**, Parsa AT: Neurosurgical Diseases of the Spine and Spinal Cord: Surgical Considerations, in Cottrell J, Smith DS (eds) 3<sup>rd</sup> edition: <u>Anesthesia and Neurosurgery</u>. Philadelphia: Mosby, 1994, pp 543-567.

## Letters

Eggers AG, Miller JI, Parsa AT: Antiglioma Cytotoxic Immune Response. J Neurosurg 81:334, 1994.

Milhorat TH, Miller JI: The Obex is not Synonymous with the Upper End of the Central Canal. Pediatric Neurosurgery 21:112, 1994.

### **Manuscripts**

Parizh D, Parizh I, Kuwata C, Glinik G, Kopatsis A, **Miller JI**: Traumatic Brain Injury: Bolus versus Continuous Infusion of 3% Hypertonic Saline? **World Journal of Emergency Surgery**, submitted Sept., 2015

Panichpisal K, Aristide G, Linden C, Miller JI: Foreign body granulomas after a craniotomy for meningioma. The Southwest Respiratory & Critical Care Chronicles, Vol. 3, No. 10, 39-40, 2015

Janjua N, Bulic S, Tan BC, Panichpisal K, Miller JI: Salvage of distal non-target coil embolization with stent placement and intravenous eptifibatide in a ruptured, unsecured, atypical aneurysm. J NeuroInterventional Surgery, doi:10.1136/neurintsurg-2012-010535, 2013

Parsa AT, **Miller JI**, Eggers AE, Ogden III AT, Anderson RC, and Bruce J: Autologous adjuvant linked fibroblasts induce anti-glioma immunity: implications for development of a glioma vaccine. **J Neuro-Oncology**, Vol. 64: 77-87, 2003

**Miller JI**, Chou MW, Dow-Edwards D, Pan J, Bolognese P: Correlation between Laser Doppler Flowmetry and Absolute Units of Local Cerebral Blood Flow using Quantitative Autoradiography: ICP X A. Marmarou, R. Bullock, et al. (eds.). Acta Neurochirurgica Supplementum 71: 1998, Springer Verlag

**Miller JI**, Chou MW, Bolognese P, Pan J: Continuous Intracranial Multimodality Monitoring Comparing Local Cerebral Blood Flow, Cerebral Perfusion Pressure, and Microvascular Resistance: ICP X A. Marmarou, R. Bullock, et al. (eds.). Acta Neurochiurgica Supplementum 71: 1998, Springer Verlag

Adler DE, Milhorat TH, **Miller JI**: Treatment of Rhinocerebral Mucormycosis With Intravenous, Interstitial and Cerebrospinal Fluid Administration of Amphoterecin B. **Neurosurgery**, Vol. 42, No. 3, pp 644-649, 1998

Miller JI, Capocelli A, Botero J, Bendo A, Pan J: The Effects of Thiopental Infusion on Cerebral Hemodynamics in Critically Ill Neurosurgical Patients. Int'l Proceedings, 11<sup>th</sup> Int'l Congress of Neurological Surgery, Monduzzi Editore S.p.A., Bologna, pp 1301-1303, 1997

Johnson WD, Bolognese P, **Miller JI**, Heger IM, Liker MA, Milhorat TH: Continuous Postoperative Local CBF Monitoring in Aneurysmal SAH Patients Using a Combined ICP-Laser Doppler Fiberoptic Probe. J Neurosurg Anesth, Vol. 8, No. 3, pp 199-207, 1996

Shaha AR, Johnson R, Miller JI, Milhorat, TH: Transoral Transpharyngeal Approach to the Upper Cervical Vertebrae. American Journal of Surgery, 166:336-340, 1993.

Bolognese P, Miller JI, Heger IM, Milhorat TH. Laser Doppler Flowmetry in Neurosurgery. J Neurosurg Anesth, 5:151-158, 1993.

Milhorat TH, Miller JI, Johnson WD, Adler DE, Heger IM: Anatomical Basis of Syringomyelia Occurring With Hindbrain Lesions. Neurosurgery, 32:748-754, 1993.

Milhorat TH, Nobandegani F, **Miller JI**, Rao C: Non-communicating Syringomyelia Following Occlusion of Central Canal in Rats: Experimental Model and Histological Findings. **J Neurosurg**, 78: 274-279, 1993.

Milhorat TH, Elowitz EH, Johnson RW, Miller JI: Spontaneous Movement of Bullets in Brain. Neurosurgery, 32:140-143, 1993.

Milhorat TH, Johnson WD, Miller JI: Syrinx Shunt to Posterior Fossa Cisterns (Syringocisternostomy) for Bypassing Obstructions of Upper Cervical Theca. J Neurosurg, 77:871-874, 1992.

Milhorat TH, Johnson WD, Miller JI, Bergland RM, Hollenberg-Sher JR: Surgical Treatment of Syringomyelia Based on Magnetic Resonance Imaging Criteria. Neurosurgery, 31:231-245, 1992.

Eggers AE, Miller JI, Sclafani S: Intralymphatic Immunotherapy of Glioblastoma. New York State J of Med, 92:272-274, 1992.

Milhorat TH, Adler DE, Heger IM, Miller JI, Hollenberg-Sher JR: Histopathology of Experimental Hematomyelia. J Neurosurg, 75: 911-915, 1991.

#### <u>Abstracts</u>

Heger IM, Valerie E, Bolognese P, Gilchrist B, Miller JI, Ramenofsky ML: Cerebrovascular Response to Head Injury in a Pediatric Model: Technique and Preliminary Data. 11<sup>th</sup> Annual Scientific Assembly of the Eastern Association for the Surgery of Trauma, Sanibel, Florida, 1998

Parsa AT, Kaiser MG, Yoon JT, Hall JS, Chakrabarti I, **Miller JI**, Bruce JN: The Effect of Gene Therapy on Major Histocompatability Complex Gene Expression (MHC I / MHC II) in Human Gliomas. Poster – Tumors (#304). Congress of Neurological Surgeons, 47<sup>th</sup> Annual Meeting, New Orleans, Louisiana, October, 1997

Parsa AT, Chakrabarti I, Hall JS, Yoon JT, Bruce JN, Miller JI: Heterogeneity of Gene Expression in Glioma Is Affected by Cytokines. Poster – Tumors (#305). Congress of Neurological Surgeons, 47<sup>th</sup> Annual Meeting, New Orleans, Louisiana, October, 1997

Botero J, Capocelli A, Bendo A, Miller JI: Improved Technique for Jugular Bulb Catheterization Using a 4.5F Introducer. Presentation. Society of Neurosurgical Anesthesia & Critical Care, San Diego, California, October, 1997

Botero J, Bendo A, Cottrell J, Bolognese P, Miller JI, Capocelli A: Continuous Cerebral Hemodynamic Monitoring During Thiopental Infusion in Neurosurgical Patients. Presentation. American Society of Anesthesiologists, San Francisco, California, October, 1997

Miller JI, Capocelli A, Botero J, Bendo A, Pan J: The Effects of Thiopental Infusion on Cerebral Hemodynamics in Critically Ill Neurosurgical Patients. Lecture/presentation. Eleventh International Congress of Neurological Surgery, Amsterdam, Netherlands, July, 1997

Miller JI, Bolognese P, Dow-Edwards D, Chou M, Pan J: Correlation Between Laser Doppler Flowmetry and Absolute Units of Local Cerebral Blood Flow Using Quantitative Autoradiography in Ischemic Cerebral Tissue of a Rat Model. Poster (#1074). American Association of Neurological Surgeons, 65<sup>th</sup> Annual Meeting, Denver, Colorado, 1997

Miller JI, Chou MW, Dow-Edwards D, Pan J, Bolognese P: Correlation Between Laser Doppler Flowmetry and Absolute Units of Local Cerebral Blood Flow Using Quantitative Autoradiography. Poster/Oral Program (PO-1-028). Tenth International Symposium on Intracranial Pressure and Neuromonitoring in Brain Injury, Williamsburg, Virginia, 1996

Miller JI, Chou M, Bolognese P, Capocelli A, Heger I, Pan J, Milhorat TH: Continuous Intracranial Multimodality Monitoring Comparing Local Cerebral Blood Flow, Cerebral Perfusion Pressure, and Microvascular Resistance. Oral presentation (0-1-04). Tenth International Symposium on Intracranial Pressure and Neuromonitoring in Brain Injury, Williamsburg, Virginia, 1996

Miller JI, Bolognese P, Johnson WD, Petite JR: A Combined Intracranial Pressure / Laser Doppler Probe for Intracranial Monitoring. Poster Program (#222), Congress of Neurological Surgeons, 45<sup>th</sup> Annual Meeting, San Francisco, California, 1995

Miller JI, Bolognese P, Johnson WD, Parsa AT, Milhorat TH: A Combined Intracranial Pressure-Laser Doppler Probe for Continuous Multimodality Monitoring of Local Cerebral Blood Flow. Lecture Presentation, Session 83-Intensive Care, May 12, 1995. 10<sup>th</sup> European Congress of Neurosurgery, Berlin, Germany, 1995.

Parsa AT, Eggers AE, Batuman O, Miller JI, Milhorat TH: In Vitro Model of Adjuvant-linked Vaccine for Antiangiogenic Immunotherapy of Glioblastoma. J Neurosurg 82:338, 1995. American Association of Neurological Surgeons Annual Meeting, Orlando, Florida, 1995.

Parsa AT, Sclafani S, Miller JI, Eggers AE: Clinical Response of a Patient with Recurrent Glioblastoma to Intrasplenic Administration of an Adjuvant-Linked Vaccine. Proc Amer Ass for Cancer Research 35: 513, 1994. American Association for Cancer Research Annual Meeting, San Francisco, California, 1994.

Miller JI, Eggers AE, Parsa AT, Milhorat TH: Clinical Response of a Patient With Recurrent Glioblastoma to Active Specific Immunotherapy Using an Autologous Fibroblast Vaccine. J Neurosurg 80: 380, 1994. American Association of Neurological Surgeons Annual Meeting, San Diego, California, 1994.

Parsa AT, Eggers AE, Miller JI, Milhorat TH: Role of Transforming Growth Factor - b2 & Major Histocompatibility Complex Class I Expression in the Treatment of Malignant Glial Neoplasms With Immunotherapy. J Neurosurg 80:378, 1994. American Association of Neurological Surgeons Annual Meeting, San Diego, California, 1994.

Miller JI, Bolognese P, Heger I, Liker M, Milhorat TH: New Perspectives on the Etiology of Lundberg's B Waves. Abstract #889, Scientific Program, Congress of Neurological Surgeons, 43<sup>rd</sup> Annual Meeting, Vancouver, British Columbia, 1993.

Miller JI, Parsa AT, Eggers AE, Lewis JA, Milhorat TH: The Role of Major Histocompatibility Class II Antigen Expression in Successful Treatment of Malignant Glial Neoplasms With Immunotherapy. J Neurosurg 78: 340, 1993. American Association of Neurological Surgeons, Annual Meeting, Boston, Massachusetts, 1993.

Miller JI, Eggers AE, Parsa AT, Milhorat TH: *In Vitro* Model of Adjuvant-Linked Vaccine for Immunotherapy of Glioblastoma. J Neurosurg 78: 340, 1993. American Association of Neurological Surgeons Annual Meeting, Boston, Massachusetts, 1993.

**Miller JI**: Laser Doppler Flowmetry in the Neurosurgical ICU, in: The New York City Departments of Neurosurgery, 16th annual post-graduate syllabus: **Controversies, Complications and Surgical Techniques**. New York, 1992, pp 47-59.

Milhorat TH, Miller JI, Johnson WD, Adler DE, Heger IM: Central Canal of Medulla With Reference to Hindbrain Lesions Causing Syringomyelia. J Neurosurg, 76: 390A, 1992. American Association of Neurological Surgeons Annual Meeting, San Francisco, California, 1992.

Miller JI: A New Approach to Immunotherapy of Glioblastoma: Phase I Trial of Autologous Vaccine Plus ImuVert, in: The New York City Depts. of Neurosurgery, 14th annual post-graduate course syllabus: Controversies, Complications & Surgical Techniques. New York, 1990, pp 168-176.

#### **Professional Activities:**

Visiting Clinical Professor and Extoller, Celebrating Investitures of Andrew T. Parsa, MD, PhD as the Michael J. Marchese Professor of Neurological Surgery and Dimitri Krainc, MD, PhD, as the Aaron Montgomery Ward Professor of Neurology at the invitation of Eric G. Neilson, MD, the Lewis Landsburg Dean and Vice President for Medical Affairs at Northwestern University Feinberg School of Medicine, with fellow extoller, Walter J. Koroshetz, MD, Deputy Director, National Institute of Neurological Disorders and Stroke, November of 2013

Visiting Faculty for Microneurosurgical Training in Excimer Laser Assisted Non-Occlusive Vascular Anastomosis (ELANA) Techniques, under Prof. dr.C.A.F. Tulleken & dr. A. van der Zwan, UMC Utrecht, The Netherlands, 2015 & 2007

Certification in Principles & Practice of Gamma Knife® Radiosurgery, University of Pittsburgh, Center for Image-Guided Neurosurgery, Pittsburgh, Pennsylvania, 2005

Board of Directors, Brooklyn and Long Island Chapter of the American College of Surgeons, Inc. 1998 – 99

President, New York Society for Neurosurgery, 1998 - 99

Secretary / Treasurer, New York Society for Neurosurgery, 1994 - 97

AANS & CNS Joint Section Committee, Continuing Medical Education, Self Assessment for Neurosurgeons, 1995

Course Faculty - The Medical Schools of New York City Depts. of Neurosurgery, 19th Annual Post-Graduate Course, 1995, New York City: "Current Concepts in Intracranial Pressure Monitoring".

Visiting Professor, Guest Lecture - Grand Rounds, Department of Neurosurgery, Mount Sinai Hospital,

November, 1995, New York City: "Laser Doppler Flowmetry for Continuous Bedside Monitoring of Local CBF in Neurocritical Care".

AO/ASIF Advanced Spinal Techniques Training, Association for the Study of Internal Fixation, Montreal, Quebec, Canada, 1994

Neurosurgery Subcommittee, Radiation Therapy Oncology Group (RTOG), May 1992-94

Course Faculty - The Medical Schools of New York City Depts. of Neurosurgery, 16th Annual Post-Graduate Course, 1992, New York City: "Cerebral Blood Velocity Monitoring".

Chairman, Laser Safety Committee, SUNY-HSC at Brooklyn & Kings County Hospital, July 1992 to 1994

Admissions Committee, SUNY-HSC at Brooklyn, College of Medicine, July 1991-95

Animal Care Committee, SUNY-HSC at Brooklyn, College of Medicine, July 1991-95

Advanced Trauma Life Support Certification, American College of Surgeons, Committee on Trauma, June, 1991

Course faculty, Pneumatic Drilling, Midas Rex Institute, New York, New York, July 1991

Course faculty - The Medical Schools of New York City Depts. of Neurosurgery, 14th Annual Post-Graduate Course in Neurosurgery, 1990, New York City: "Vaccine Adjuvant Immunotherapy for High Grade Gliomas".

Course faculty - The Medical Schools of New York City Depts. of Neurosurgery, 13th Annual Post-Graduate Course in Neurosurgery, 1989, New York City: "Vaccine Adjuvant Immunotherapy for High Grade Gliomas".

FDA Phase I Approval of Vaccine-Adjuvant Immunotherapy Protocol for Malignant Gliomas, SUNY Downstate, Brooklyn, New York, 1989

Course faculty - The Medical Schools of New York City Depts. of Neurosurgery, 12th Annual Post-Graduate Course in Neurosurgery, 1988, New York City: "Quality Assurance Monitors - Like it or Not They're Here! Implications for Future Neurosurgical Practice".

Leksell Stereotactic Training, Sponsored by Medical College of Pennsylvania, San Diego, California, 1988

Laser Certification Training, Mayfield Neurological Institute, Cincinnati, Ohio, February, 1988

Armed Forces Institute of Pathology, Neuropathology and Neuroradiology, Washington, D.C., 1987

Initiation of the Immunotherapy Protocol for Malignant Gliomas with Tissue Culture Laboratory and Vaccine-Adjuvant Therapy, IRB Approved at the Long Island College Hospital, SUNY Downstate, and The Maimonides Medical Center, Brooklyn, New York, November, 1987

Phenobarbital Study on Cerebral Blood Flow and Metabolism via Double Labeled Technique in Quantitative Autoradiography. Joseph Fenstermacher, Ph.D., Ronald Blasberg, M.D., Membrane Transport

Section, N.C.I., N.I.H., and Thomas H. Milhorat, M.D., Neurosurgery, Children's Hospital National Medical Center, Washington, D.C., 1980 – 1982

Microsurgical Training Elective, Robert Acland, M.D., Laboratory of Microsurgery, University of Louisville School of Medicine, Louisville, Kentucky, 1982