

## **Kyle Derek Weaver, M.D.**

Assistant Professor of Neurosurgical Oncology  
Department of Neurological Surgery  
Vanderbilt University Medical Center  
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Nashville, TN, 37232-2380  
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### **Education**

Fellowship in Neuro-Oncology  
Johns Hopkins University School of Medicine  
Baltimore, Maryland  
July, 2002-June, 2004

Residency in Neurosurgery  
Division of Neurosurgery  
University of North Carolina School of Medicine  
Chapel Hill, North Carolina  
June, 1997-June, 2002

Internship in General Surgery  
Department of Surgery  
University of North Carolina School of Medicine  
Chapel Hill, North Carolina  
June, 1996-June, 1997

University of North Carolina School of Medicine  
Chapel Hill, North Carolina  
M.D. with Highest Honors  
August, 1991-May, 1996

Continuing Education Program  
Wake Forest University  
Winston-Salem, North Carolina  
June, 1989-May, 1990

Graduate Program in Neurosciences  
Florida State University  
Tallahassee, Florida  
August, 1988-May, 1989

Duke University  
Durham, North Carolina  
B.S. in Psychology  
August, 1984-May, 1988

### **Honors and Awards**

Congress of Neurological Surgeons Young Investigator Award, 2004

American Society of Clinical Oncology Merit Award, 2004

Medical Alumni Endowment Grant, 1998, 2000

Herbert Jennings Proctor Award, 1998  
University of North Carolina School of Medicine Merit Awards, 1993, 1994, and 1996  
Michiko Kuhino Award, 1996  
John B. Graham Student Research Society, 1995  
Scott Neil Schwirck Fellowship, 1995  
Holderness Medical Fellowship, 1995  
Distinguished Medical Scholars Program, 1994-  
National Institutes of Health Summer Research Fellowship, 1994  
Cancer Education Program Summer Fellowship, 1993  
Alpha Omega Alpha, 1995

### **Activities**

Bullitt History of Medicine Club, 1993-  
Triangle Hospice, 1993-1996  
UNC School of Medicine Honor Court, 1992-1996  
Medical Orientation and Community Orientation (MECO) Project, 1992  
American Medical Association Medical Student Section, UNC Chapter, 1991-1996, Vice-President 1992-1993  
North Carolina Medical Society Medical Student Section, UNC Chapter, 1991-1996, Vice-President 1992-1993  
Student Health Action Committee (SHAC) Clinic, 1991-1992  
Volunteers for Youth, 1991-1992  
Hospice of Forsyth County, 1989-1990  
Forsyth County Adult Literacy Program, 1989-1990  
Duke Tridevils Triathlon Club, 1986-1988, President, 1987-1988

### **Publications**

Weaver, K.D., Grossman, S., Herman, J.G. Methylated tumor-specific DNA as a plasma biomarker in patients with glioma. *J Clin Oncol*. In press

Weaver, K.D., Huang, J., Tamargo, R.J., Bernard, Jr., E.J. Preoperative Localization of the Carotid Bifurcation for Carotid Endarterectomy Using Magnetic Resonance Angiography Without Tomography. *Neurosurgery* In Press

Weaver, K.D., Ewend, M.G., Solander, S. Successful Transarterial Guglielmi Detachable Coil Embolization of Post-Traumatic Posterior Communicating Artery-Cavernous Sinus Fistula. *Neurosurgery* 2003;52(2):458-461.

Weaver, K.D., Yeyeodu, S., Cusack, Jr., J.C., Baldwin, Jr., A.S., Ewend, M.G. Potentiation of Chemotherapeutic Agents Targeted Against Human Gliomas Following Antagonism of Nuclear Factor Kappa B. *Journal of Neurooncology* 2003;61(3) 187-196.

Weaver, K.D., Wiseman, D.B., Farber, M., Ewend, M.G., William Marston, W., Keagy, B.A. Complications of Lumbar Drainage Following Thoracoabdominal Aortic Aneurysm Repair. *Journal of Vascular Surgery* 2001 Oct;34(4):623-7.

Weaver, K.D., Branch, C.A., Hernandez, L., Miller, C.H., Sokolowski, K.A., Gudeman, S.K., and Quattrocchi, K.B. The Effect of Leukocyte-Endothelial Adhesion Antagonism on Neutrophil Migration and Neurological Outcome Following Cortical Trauma. *Journal of Trauma*. 2000 Jun;48(6):1081-90.

Weaver, K.D., Ewend, M.G. Development of an Arachnoid Cyst Following Ventriculoperitoneal Shunting. *Journal of Neurosurgery*. 2000;92:363.

Weaver, K.D., Armao, D., Ewend, M.G. Histiocytic Lesion Mimicking Intrinsic Brainstem Neoplasm. Case Report. *Journal of Neurosurgery*. 1999;91(6):1037-40.

Weaver, K.D., Liles, E.A., Lowry T.E., Smith III, W.T., Cornwell L. Do Healthy Adults Need to Know Their Cholesterol Level? *North Carolina Medical Journal* 1996; 57(5):275-280.

Ewend, M.G., Weaver, K.D., Castillo, M. Meningeal Sarcomas in Winn R., ed. *Youman's Textbook of Neurological Surgery*, ed. 3, 2003.

Weaver, K.D., Bullitt, E.B. Parasitic Infections of the Central Nervous System. In Batjer, H., and Loftus, C., eds. *Textbook of Neurological Surgery*. ed.1, 2002.

### **Comments**

Brem, H., Weaver, K.D. in Nakamura M, Roser F, Michel J, Jacobs C, Samii M. The natural history of incidental meningiomas. *Neurosurgery*. 2003 53(1):62-70. comment p71.

Brem, H., Weaver, K.D. in Laws ER Jr, Morris AM, Maartens N. Gliadel for pituitary adenomas and craniopharyngiomas. *Neurosurgery*. 2003 53(2):255-69. comment p270.

### **Presentations and Abstracts**

Weaver, K.D., Grossman, S.A., Herman, J.G. Hypermethylated tumor-specific DNA as a serum biomarker in patients with glioma. American Society of Clinical Oncology Meeting, New Orleans, LA, June 2004. Poster presentation.

Weaver, K.D., Yohay, K., Haque, R., Johns, D., Tyler, B., Rothstein, J.D., Brem, H. Inducible Anti-Excitotoxic Adenoviral Gene Therapy Improves Survival in a Nude Mouse Intracranial Human Glioma Model. American Association of Neurological Surgeons Meeting, Orlando, FL, May 2004. Platform presentation.

Haque, R., Weaver, K.D., Yohay, K., Tyler, B., Zohar, Y., Rothstein, J.D., Brem, H. Antagonism of Brain-Tumor Mediated Excitotoxic Destruction and Invasion Using a Glutamate Release Inhibitor. American Association of Neurological Surgeons Meeting, Orlando, FL, May 2004. Poster presentation.

Brem, H., Weaver, K. Targeting Brain Tumor Therapy. 7th US-Japan Symposium on Drug Delivery Systems. Maui, HI, December 2003. Plenary presentation.

Yohay, K., DeGroot, J., Eberhart, C., Weaver, K., Law, R., Rothstein, J. Aberrant EAAT2 Glutamate Transporter Expression in Human Gliomas. Society for Neuroscience Meeting, New Orleans, LA, November 2003. Poster presentation.

Weaver, K.D., Manning, J., Grossman, S.A., Herman, J.G. Promoter Hypermethylation Silencing of Tumor Suppressor Genes in Human Glioblastoma Multiforme. Society for Neuro-Oncology Meeting, Keystone, CO, November, 2003. Poster presentation.

Weaver, K.D., Yohay, K., Johns, D, Tyler, B., Rothstein, J.D., Brem H Reduction of Glutamate-Mediated Astrocyte Apoptosis Using Anti-Excitotoxic Adenoviral Gene Therapy. Society for Neuro-Oncology Meeting, Keystone, CO, November, 2003. Poster presentation.

Weaver, K.D., Yohay, K., Johns, D, Tyler, B., Rothstein, J.D., Brem H. Gene Therapy Utilizing an Inducible Potassium Channel Decreases *In Vitro* Glutamate-Mediated Human Glioma Migration. Congress of Neurological Surgeons, Denver, CO, October, 2003. Oral poster presentation.

Weaver, K.D., Yohay, K., Johns, D, Tyler, B., Rothstein, J.D., Brem, H. Viral Delivery of an Inducible Inward-Rectifying Potassium Channel Gene Protects Murine Astrocytes from Glutamate-Mediated Cell Death. Congress of Neurological Surgeons, Denver, CO, October, 2003. Oral poster presentation.

Weaver, K.D, Manning, J., Grossman, S.A., Herman, J.G. Tumor Suppressor Gene Silencing Secondary to Promoter Hypermethylation in Human Malignant Gliomas. Congress of Neurological Surgeons, Denver, CO, October, 2003. Poster presentation.

Haque, R., Weaver, K.D., Yohay, K., Tyler, B., Zohar, Y., Rothstein, J., Brem, H. Inhibition of Brain Tumor-Mediated Excitotoxic Destruction and Invasion Implementing a Glutamate Release Antagonist. American Neurological Association Meeting, San Francisco, CA, October 2003. Poster presentation.

Yohay, K., DeGroot, J., Weaver, K., Law, R., Eberhart, C., Rothstein, J. Glutamate Transporter Expression in Human Gliomas. American Neurological Association Meeting, San Francisco, CA, October 2003. Poster presentation.

Ewend, M.G., Yeyeodu, S., Huang, C-H., Weaver, K.D., McKinnon, K., Sills, A.K. Technical Hurdles to Developing Dendritic Cell Therapy for Gliomas. Society for Neuro-Oncology, San Diego, CA, November, 2002. Poster presentation.

de Groot, J.F., Yohay, K., Law, R., Weaver, K., Brem, H., Rothstein, J.D. Glutamate Transporters and Glioma Growth-Novel Approaches to CNS Chemotherapy. Society for Neurosciences, Orlando, FL, November, 2002, Poster presentation.

Weaver, K.D., Bernard, Jr., E.J. Preoperative Localization of the Carotid Bifurcation for Carotid Endarterectomy Using Magnetic Resonance Angiography Without Tomography. Southern Neurosurgical Society, Savannah, Georgia, March, 2002, Poster presentation.

Weaver, K.D., Fowler, III, W.C., Yeyeodu, S., Ewend, M.G. Nuclear Factor Kappa B Blockade by Mutant I $\kappa$ B $\alpha$  Potentiates Chemotherapeutic Efficacy in an *in vivo* Human Glioma Model. Congress of Neurological Surgeons, San Diego, CA, October, 2001. Platform presentation.

Weaver, K.D., Fowler III, W.C., Yeyeodu, S., Ewend, M.G. Viral Delivery of a Mutant Inhibitor Gene Decreases Nuclear Factor Kappa B Activity in an *in vivo* Model of Human Gliomas. 14<sup>th</sup> International Conference on Brain Tumor Research and Therapeutics, Asheville, North Carolina, May, 2001, Platform presentation.

Long, J.D., Weaver, K.D., Yeyeodu, S., Ewend, M.G. Increased Efficacy of Radiation Against *in vitro* Human Gliomas Following Antagonism of Nuclear Factor Kappa B. 14<sup>th</sup> International Conference on Brain Tumor Research and Therapeutics, Asheville, North Carolina, May, 2001, Poster presentation.

Weaver, K.D., Fowler III, W.C., Yeyeodu, S., Ewend, M.G. Methylguanine Methyltransferase Inhibition by O<sup>6</sup>-Benzylguanine: The Role of p53 and Nuclear Factor Kappa B Status on BCNU-Induced Cell Death. American Association of Neurological Surgeons, Toronto, Ontario, April, 2001. Poster presentation.

Weaver, K.D., Yeyeodu, S., Cusack, J.C., Ewend, M.G. Potentiation of Chemotherapy Against U87 Glioblastoma by Gene Therapy Targeting Nuclear Factor Kappa B. American Association of Neurological Surgeons. San Francisco, CA. April, 2000. Platform presentation.

Weaver, K.D., Yeyeodu, S., Baldwin, Jr. A.S., Ewend, M.G. Increased Efficacy of Chemotherapy Against in Vitro Human Gliomas by Antagonism of Nuclear Factor Kappa B. Congress of Neurological Surgeons, Boston, MA. November, 1999. Oral poster presentation.

Weaver, K.D., Yeyeodu, S., Baldwin, Jr. A.S., Ewend, M.G. Potentiation of Chemotherapy Against Glioma Cell Lines by Inhibition of NF- $\kappa$ B. Society for Neuro-Oncology, Scottsdale, AZ. November, 1999. Platform presentation.

Weaver, K.D. Management of Severe Head Injury – Guideline Foundations. UNC Hospitals Neurology/Neurosurgery Grand Rounds, December, 1999. Slide presentation.

Weaver, K.D. The Inflammatory Response to Head Injury. UNC Department of Surgery Trauma Training Grant Lecture, May, 1999. Slide presentation.

Weaver, K.D. Evaluation and Management of the Head Injury Patient. Carolina Air Care Grand Rounds, December, 1998. Slide presentation.

Weaver, K.D. Management of Intracranial Hypertension in the Multiply Injured Patient. UNC Critical Care Grand Rounds, November, 1998. Slide presentation.

Weaver, K.D. Head Injury. UNC-Chapel Hill School of Medicine 4th year class, 1998-99. Slide presentation.

Weaver, K. D., Quattrocchi, K.B., Branch, C.A., Hernandez, L., Miller, C.H., , Sokolowski, K., Gudeman, S.K. Blockade of the Leukocyte Adhesion Molecule CD11b Attenuates the Acute Inflammatory Response Following Experimental Cerebral Trauma. University of North Carolina School of Medicine Student Research Day, January, 1996. Platform presentation.

Weaver, K.D., Branch, C.A., Hernandez, L., Miller, C.H., Bree, M., Gudeman, S.K., and Quattrocchi, K.B. Neutrophil Infiltration Following Cortical Trauma: The Effects Of Treatment With Anti-CD11b. *J. Neurotrauma*. 1995;12(3):375.

Weaver, K.D., Branch, C.A., Hernandez, L., Miller, C.H., Sokolowski. K.A., Gudeman, S.K., Quattrocchi, K.B. Antagonism of Leukocyte Endothelial Interactions Reduces Neutrophil Influx Following Cortical Trauma. *J. Neurotrauma* 1995;12(5):993

Weaver, K.D., Secondary Neurological Injury: Mechanisms and Therapeutic Possibilities. North Carolina Head Injury Foundation, March, 1995.

Weaver, K. D., Quattrocchi, K.B., Branch, C.A., Hernandez, L., Miller, C.H., Bree, M., Gudeman, S.K., and Quattrocchi, K.B. The Leukocyte Response to Controlled Cortical Trauma. University of North Carolina School of Medicine Student Research Day, February 1995. Platform presentation.

## **Research Projects**

Promoter Hypermethylation and Epigenetic Silencing of Tumor Suppressor Genes in Malignant Gliomas – 2002 – present  
The Oncology Center, Johns Hopkins University School of Medicine  
Preceptor: James G. Herman, M.D.

Pharmacologic and Gene Therapy Approaches Targeting Glutamate-Mediated Glioma Invasion and Peritumoral Astrocyte Excitotoxicity – 2002-present  
Department of Neurosurgery, Johns Hopkins University School of Medicine  
Preceptor: Henry Brem, M.D.

Bacteriolytic Therapy for Brain Tumors in a Rabbit VX2 Intracranial Model – 2003 – present

The Oncology Center, Johns Hopkins University School of Medicine  
Preceptor: Bert Vogelstein, M.D.

Preoperative Localization of the Carotid Bifurcation for Carotid Endarterectomy Using Magnetic Resonance Angiography Without Tomography – 2002-present  
Department of Neurosurgery, Johns Hopkins University School of Medicine  
Preceptor: Rafael J. Tamargo, M.D.

Potential of Chemotherapy Efficacy Against Gliomas Following Suppression of Nuclear Factor Kappa B Using Gene Therapy – 1998 - 2002  
Division of Neurosurgery, University of North Carolina-Chapel Hill School of Medicine  
Funding: Medical Alumni Association Endowment Grant  
Preceptor: Matthew G. Ewend, M.D.

The Role of the Acute Inflammatory Response on Neurological Outcome Following Head Injury – 1994 -1995  
Division of Neurosurgery, University of North Carolina-Chapel Hill School of Medicine  
Funding: Distinguished Medical Scholars Program and National Institutes of Health Summer Research Fellowship  
Preceptor: Keith B. Quattrocchi, M.D., Ph.D.

The Coordination of Cancer Support Services at University of North Carolina Hospitals – 1993 - 1994  
Department of Medicine/Medical Oncology  
Funding: National Institutes of Health Cancer Education Program Summer Fellowship  
Preceptor: Stephen A. Bernard, M.D.

### **Professional Memberships**

American Association of Neurological Surgeons Resident Member, 1997-  
Congress of Neurological Surgeons Resident Member, 1997-  
American College of Surgeons Candidate Member, 1996-

### **Personal Information**

Born, High Point, North Carolina, 7/3/66. Married to Ursula Norris Weaver. Two children, Rachel Oakley (February, 1998) and Megan Rhys (November, 1999)

### **Personal Interests**

Running, snow skiing, hiking, kayaking