

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME William M. Brooks, Ph.D.		POSITION TITLE Director, Hoglund Brain Imaging Center	
eRA COMMONS USER NAME wbrooks		Professor, Neurology	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Griffith University, Australia	B.Sc.(Hons)	1979	Chemistry
Griffith University, Australia	Ph.D.	1984	Chemistry
Griffith University, Australia	Post Doc	1984-85	Chemistry
Dept. Radiology, Univ. of Queensland, Australia	Post Doc	1985-88	Chemistry

A. Positions and Honors**Professional Experience**

1988-1989: Research Officer, Australian Commercial Research & Development Limited, Australia
 1990-1991: Consultant Manager, Brisbane NMR Centre, Griffith University, Australia
 1994-1997: Research Associate Professor, Dept. Cell Biology, University of New Mexico, Albuquerque, NM
 1991-2002: Scientific Director, Clinical & Magnetic Resonance Research Center, Univ of NM, Albuquerque
 1997-2002: Research Associate Professor, Dept. Neurosciences, University of New Mexico, Albuquerque
 2002-present: Director, Hoglund Brain Imaging Center, University of Kansas Medical Center, Kansas City KS.
 2002-present: Professor, Department of Neurology, University of Kansas Medical Center, Kansas City KS.

NIH Study Sections/VA Review Panels

Reviewer, NICHD Program/Project Grant Site Visit, June 1995, Seattle, Washington.
 Reviewer, Review Panel for Special Initiative on PTSD and other stress-related disorders. Department of Veteran's Affairs Medical Research Service/Department of Defense, June 18-19, 1998, Washington DC.
 Reviewer, Special Emphasis Panel, Functional MRI and Intervention for Cognitive Deficits After Traumatic Brain Injury, June 2001, Washington DC.
 ad hoc Reviewer NSD-A, 2001-2005
 Reviewer, NIA Program/Project Grant Site Visit April 2003, New York, New York.
 Reviewer, NIA Program/Project Grant Site Visit July 2003, New York, New York.
 Reviewer, Alzheimers Disease Research, Centers Special Emph. Panel, Sept & Oct 2003, Chevy Chase, MD.
 Reviewer, NIA Program/Project Grant Reverse Site Visit, March 2004, Bethesda MD.
 Reviewer, Alzheimers Disease Research Centers Special Emphasis Panel, October 2004, Rockville, MD.
 Reviewer, Member Conflict Special Emphasis Panel ZRG1 BDCN-F (03) (M), November 2004, Rockville, MD.
 Reviewer, ZRG1 BDCN-L-90s, Mar 2005, Bethesda, MD.

B. Selected peer-reviewed publications (from 100)

Brooks WM, Sabet A, Sibbitt WL Jnr, Barker PB, van Zijl P, Moonen C, Duyn J: Neurochemical quantification in systemic lupus erythematosus. *J Rheumatol*, 24:2323-2329, 1997.
 Brooks WM, Wesley MH, Kodituwakku P, Garry P, Rosenberg GA: 1H-MRS differentiates white matter hyperintensities in Subcortical Arteriosclerotic Encephalopathy from those in normal elderly. *Stroke*, 28: 1940-1943, 1997.
 Brooks WM, Hodde-Vargas J, Vargas LA, Yeo RA, Ford CC, Hendren RL: The frontal lobe of children with schizophrenia spectrum disorders: A 1H-MRS study. *Biol Psychiatry*, 43:263-269, 1998.
 Friedman SD, Brooks WM, Jung R, Hart BL, Yeo RA: Proton MR Spectroscopic findings correspond to diffuse neuropsychological function in traumatic brain injury. *AJNR: Am J Neuroradiol*, 19:1879-1885, 1998.
 Sabet A, Sibbitt WL Jr, Brooks WM, Danska J: Neurometabolite markers of cerebral injury in the antiphospholipid antibody syndrome of Systemic Lupus Erythematosus. *Stroke*, 29: 2254-2260, 1998.
 Brooks WM, Friedman SD, Stidley CA: Reproducibility of 1H-MRS in vivo: *Magn Reson Med*, 41:193-7, 1999.

- Brooks WM, Jung RE, Ford CC, Greinel EJ, Sibbitt Jr., WL: Relationship Between neurometabolite derangement and neurocognitive dysfunction in Systemic Lupus Erythematosus *J Rheumatol*, 26:81-85, 1999.
- Friedman SD, Brooks WM, Jung RE, Chiulli SJ, Sloan JH, Montoya BT, Hart BL, Yeo RA, Quantitative ¹H-MRS predicts outcome following Traumatic Brain Injury. *Neurology* 52: 1384-1391, 1999.
- Jung RE, Brooks WM, Chiulli SJ, Weers DC, Yeo RA: The biochemical markers of intelligence: A proton MR spectroscopy study of normal human brain. *Proc R Soc Lond B* 1426:1375-1379, 1999.
- Jung RE, Yeo RA, Chiulli SJ, Sibbitt WL Jr, Weers DC, Hart BL, Brooks WM: Biochemical markers of cognition: A proton MR spectroscopy study of normal human brain. *Neuroreport*, 10: 3327-3331, 1999.
- Brooks WM, Stidley CA., Petropoulos H, Jung RE, Weers DC, Friedman SD, Barlow MA, Sibbitt WL Jr , Yeo RA: Metabolic and cognitive response to human Traumatic Brain Injury: A quantitative proton magnetic resonance study. *J Neurotrauma*. 17, 629-640, 2000.
- Brooks WM, Friedman SD, Gasparovic C: Magnetic Resonance Spectroscopy in Traumatic Brain Injury. *J Head Trauma Rehab*, 16, 149-164, 2001.
- Jung RE, Yeo RA, Love TM, Petropoulos H, Sibbitt WL Jr, Brooks WM: Biochemical Markers of Mood: A Proton MR Spectroscopy Study of Choline in Normal Brain. *Biological Psychiatry*, 51, 224-9, 2002
- Bustillo J, Rowland L, Lauriello J, Petropoulos H, Hammond R, Hart B, Brooks WM: Elevated choline concentrations in the caudate nucleus in antipsychotic-naive schizophrenia, *Am J Psychiatry*. 159, 130-133, 2002
- Yeo RA, Hill DE, Campbell RA, Vigil J, Petropoulos H, Hart BL, Zamora LL, Brooks WM: A proton magnetic resonance spectroscopy investigation of the right frontal lobe in children with Attention Deficit Hyperactivity Disorder. *J Am Acad Child Adolesc Psychiatry*, 42:303-310, 2003.
- Sibbitt WL, Schmidt PJ, Hart BL, Brooks WM: Fluid attenuated inversion recovery imaging in Neuropsychiatric Systemic Lupus Erythematosus. *J Rheumatol* 2003 30:1983-9, 2003.
- Mullins PG, Rowland L, Bustillo J, Bedrick EJ, Lauriello J, Brooks WM: Reproducibility of ¹H-MRS measurements in schizophrenic patients. *Magn Reson Med* 2003 50:704-7, 2003.
- Driscoll I, Hamilton DA, Petropoulos H, Yeo RA, Brooks WM, Baumgartner RN, Sutherland RJ: The Aging Hippocampus: Cognitive, Biochemical and Structural Findings, *Cerebral Cortex* 2003 13:1344-51, 2003.
- Bosma GPT., Steens SCA, Petropoulos H, van den Haak A, Doornbos J, Huizinga TWJ., Brooks WM, Harville, A, Sibbitt WL. Jr., van Buchem MA: Neuropsychiatric systemic lupus erythematosus (NPSLE): a multisequence MRI study. *Arthritis Rheum* 50:3195-202, 2004.
- Heddings A, Bilgen M, Nudo R, Toby B, McIff T, Brooks WM: High-Resolution MRI of the Human Median Nerve. *Neurorehabilitation and Neural Repair* 18:80-87, 2004.
- Villarreal G, Hamilton DA, Graham DP, Driscoll I, Qualls C, Petropoulos H, Brooks WM: Reduced area of the corpus callosum in posttraumatic stress disorder. *Psychiatry Research: Neuroimaging* 131:227-235, 2004.
- Rowland LM, Bustillo JR, Mullins PG, Jung RE, Lenroot R, Landgraf E, Barrow R, Yeo R, Lauriello J, Brooks WM: The effects of ketamine on anterior cingulate glutamatergic activity in healthy humans: A4.0T proton MRS study. *Am J Psychiatry* 162: 394-6, 2005.
- Driscoll I, Hamilton DA, Yeo RA, Brooks WM, Sutherland RJ: Virtual Navigation in Humans: The Impact of Age, Sex, and Hormones on Place Learning. *Hormones and Behavior*, 47: 326-33, 2005.
- Hunter JV, Thornton RJ, Wang ZJ, Levin HS, Roberson G, Brooks WM, Swank PR: Late Proton MR Spectroscopy in Children Following Traumatic Brain Injury: Correlation with Cognitive Outcomes. *AJNR: Am J Neuroradiol* 26: 482-8, 2005.
- Bilgen M, Al-Hafez B, He Y-Y, Brooks WM: Magnetic resonance angiography of rat spinal cord at 9.4 T: a feasibility study *Magn Reson Med*, in press 2005.
- Bilgen M, Heddings A, Al-Hafez B, Hasan W, McIff T, Toby B, Brooks WM: Microneurography of The Human Median Nerve *J Magn Reson Imag* in press 2005.
- Jung RE, Haier RJ, Yeo RA, Rowland LM, Petropoulos H, Levine AS, Sibbitt WL Jr., Brooks WM: Sex Differences in N-acetylaspartate Correlates of General Intelligence: A ¹H-MRS Study of Normal Human Brain, *Neuroimage*, in press 2005
- White LJ, Robergs RA, Sibbitt WL Jr., Gasparovic C, Petropoulos H, Brooks WM: Accumulation of acetyl groups following cycling: a ¹H-MR spectroscopy study. *Int J Sports Med* 26: 1-5, 2005.
- Holsen LM, Zarcone JR, Thompson TI, Brooks WM, Anderson MF, Ahluwalia JS, Nollen NL, Savage CR: Neural Mechanisms Underlying Food Motivation in Children and Adolescents, *Neuroimage*, in press 2005

C. Research Support (Research Projects Ongoing or Completed in the last 3 years)**Ongoing Research Support**

Neurometabolism and Outcome in Traumatic Brain Injury.

Principal Investigator: Brooks WM

Agency: National Institutes of Health.

Type: R01 NS39123, Period 8/1/01 – 7/31/05

Aim: to determine the usefulness of neurochemical markers of brain injury determined by non-invasive magnetic resonance spectroscopy to predict cognitive outcome and monitor recovery following traumatic brain injury. Further aims are to understand the biochemistry and physiology of TBI. Dr Brooks' effort is currently 40%.

Physiological basis of MRS signals after traumatic brain injury (TBI)

Principal Investigator: Brooks WM (PI of Program - Integrative Program in CNS Pathophysiology Research: Yoshio Okada PhD)

Agency: National Center for Research Resources

Type: P20 RR15636, Period: 3/1/01-2/28/2006

This Institutional Development Award to form a Center of Biomedical Research Excellence is to develop an integrated neuroimaging research center by funding promising researchers in specific projects and improving infrastructure. Dr Brooks' component is to determine the electrophysiological and histological underpinnings of MR spectroscopic changes (NAA and Cho) seen after TBI in a rat model. It will provide important understanding of the spectroscopic changes seen in the current proposal by linking basic and clinical science. No overlap.

Completed Research Support

Amphetamine and Recovery in Pediatric TBI.

Principal Investigator, Phillips JP, WM Brooks - Co-Investigator

Agency: National Institutes of Health.

Type: NIH R21-HD41237, Period: 7/1/01 - 6/30/03

Aim: to establish whether a study of the effectiveness of medications for the treatment of traumatic brain injury is feasible. The specific medication is amphetamine and the outcome measures are cognitive function (neuropsychological testing), motor skills (gait analysis), and neurochemical markers of brain injury (magnetic resonance spectroscopy). No overlap.

Brain Metabolism and Outcome Following TBI in Children

Principal Investigator: Brooks WM. (October 2002 PI: Yeo RA)

Agency: National Institutes of Health

Type: R21 NS41390, Period: 5/1/01-4/30/2004

Aim: to determine the usefulness of neurochemical markers of brain injury determined by non-invasive MRS to predict cognitive outcome and monitor recovery following traumatic brain injury in children. Further aims are to understand the biochemistry and physiology of TBI. No overlap.

The Pathophysiology of Neuropsychiatric Systemic Lupus Erythematosus.

Principal Investigator: Sibbitt WL Jr

Agency: National Institute of Neurologic Diseases and Stroke

Type: RO1 (NS35708) Period: 8/1/98-6/30/2003

Aim: to determine the relationship between neurometabolic markers of brain injury measured by MR and brain function assessed by neuropsychological testing in Neuropsychiatric Systemic Lupus Erythematosus. Dr Brooks is a Co-Investigator on this project. Completed.

Functional MR Spectroscopy of the Normal Human Brain

Principal Investigators: Brooks WM and Yeo RA

Agency: The MIND Institute (formerly National Foundation for Functional Brain Imaging)

Period: 1/1/2002-12/31/2002

Aim: to determine locally specific relationships between cognitive function and MRS visible markers of brain cellular metabolism. Although there is no direct overlap between this project and our RO1 proposal, the data from this project will provide the normal control data as described.