

# **CURRICULUM VITAE**

**Carl J. Biver, Ph.D.  
Applied Neuroscience, Inc.**

## **I. EDUCATION**

**University of South Florida, Tampa, Fl., B.S. 1988 (Chemistry)**

**University of South Florida, Tampa, Fl., Ph.D.. 1993 (Physical Chemistry)**

## **II. ACADEMIC APPOINTMENTS AND WORK HISTORY**

**1988 to 1993 – Laboratory Instructor , University of South Florida, Department of Chemistry, Tampa, Florida.**

**1993 – Adjunct Chemistry Professor, University of South Florida, Department of Chemistry, Tampa, Florida.**

**1993 to 1995 – Research and Development Scientist, Innova Pure Water, Clearwater, Florida.**

**1995 to 2006 - Research Associate, Department of Defense Head Injury Program (DVHIP), Bay Pines Foundation, Inc., Bay Pines, Florida.**

**2006 to Present - Systems Analysts and Programmer, Applied Neuroscience, Inc.  
Responsible for 'C' and 'C++' Windows programming; IDL Programming, EEG and MRI analyses.**

## **III. BIBLIOGRAPHY**

### **A. JOURNAL ARTICLES**

**Thatcher, R.W., Camacho, M., Salazar, A., Linden, C., Biver, C. and Clarke, L. (1997). Quantitative mri of the gray-white matter distribution in traumatic brain injury. J. Neurotrauma, 14: 1-14, 1997.**

**Thatcher, R. W., Biver, C., Camacho, M., McAlaster, R and Salazar, A.M. Biophysical linkage between MRI and EEG amplitude in traumatic brain injury. NeuroImage, 7, 352-367, 1998.**

Thatcher, R. W., Biver, C., McAlaster, R and Salazar, A.M. Biophysical linkage between MRI and EEG coherence in traumatic brain injury. NeuroImage, 8(4), 307-326, 1998.

Thatcher R.W., Gomez-Molina J.F., Biver. C., North, D., Curtin, R. and Walker, R.W., Two Compartmental Model of EEG Coherence and MRI Biophysics. Behavior and Brain Sciences, 23(3): 412, 2000.

Thatcher, R.W., North, D., Curtin, R., Walker, R.A., Biver, C., J.F. Gomez M., and Salazar, A. An EEG Severity Index of Traumatic Brain Injury, J. Neuropsychiatry and Clinical Neuroscience, 13(1): 77-87, 2001.

Thatcher R.W., Biver, C.L., Gomez-Molina J.F., North, D., Curtin, R. and Walker, R.W., and Salazar, A. Estimation of the EEG Power Spectrum by MRI T2 Relaxation Time in Traumatic Brain Injury. Clinical Neurophysiology, 131: 1724-1738, 2001.

Thatcher, R.W., Biver, C., and North, D., Quantitative EEG and the Frye and Daubert Standards of Admissibility. Clinical Electroencephalography, 34(2): 39-53, 2003.

Thatcher, R.W., Walker, R.A., Biver, C., North, D., Curtin, R., Quantitative EEG Normative databases: Validation and Clinical Correlation, J. Neurotherapy, 7 (No. 3/4): 87 – 122, 2003.

Thatcher, R.W., North, D., and Biver, C. EEG inverse solutions and parametric vs. non-parametric statistics of Low Resolution Electromagnetic Tomography (LORETA). Clin. EEG and Neuroscience, Clin. EEG and Neuroscience, 36(1), 1 – 9, 2005.

Thatcher, R.W., North, D., and Biver, C. Evaluation and Validity of a LORETA normative EEG database. Clin. EEG and Neuroscience, 2005, 36(2): 116-122.

Thatcher, R.W., North, D., and Biver, C. EEG and Intelligence: Univariate and Multivariate Comparisons Between EEG Coherence, EEG Phase Delay and Power. Clinical Neurophysiology, 2005, 116(9):2129-2141.

Thatcher, R.W., North, D., and Biver, C. Intelligence and EEG current density using low resolution electromagnetic tomography (LORETA), Human Brain Mapping, May 25, 2006.

Thatcher, R.W., Biver, C. J., and North, D. LORETA current source correlations and cortical connectivity, Clin. EEG and Neuroscience, In Press 2006.

Thatcher, R.W., Biver, C. J., and North, D. LORETA current source correlations and intelligence, Human Brain Mapping, May 25, 2006.

Biver, C. and Thatcher, R.W. EEG Phase Differences: Discontinuities, Phase Reset and the Winding Number. In preparation, 2006.

## **B. PUBLISHED ABSTRACTS**

Thatcher, R. W., Camacho, M., Walker, R.A., Salazar, A.M., Gosche, K. and Biver, C. Comparison of Brain Imaging and QEEG Findings in Patients with Brain Injury: A Multisite Quantitative Study. Abstract for the Association for Applied Psychology and Biofeedback 27th Annual Meeting, Albuquerque, N.M., March, 1996.

Thatcher, R. W., Biver, C., Camacho, M., Salazar, A.M., and Walker, R.A. Multimodal Integration of MRI and EEG Coherence in Traumatic Brain Injured Patients. Second International Conference on Functional Mapping of the Human Brain, Boston, MA, June 26-20, 1996.

Thatcher, R. W., Biver, C., Camacho, M., McAlaster, R and Salazar, A.M. A demonstration of a biophysical linkage between MRI, EEG and Cognition in traumatic brain injury. Third International Conference on Functional Mapping of the Human Brain, Copenhagen, Denmark, May 19-23, 1997.

Thatcher, R. W., Biver, C., Camacho, M., McAlaster, R and Salazar, A.M. Biophysical linkage between MRI, EEG and Cognition in traumatic brain injury. 14th Internal Congress of EEG and Clinical Neurophysiology, Florence, Italy, August 24-30, 1997.

Thatcher, R. W., Biver, C., and Salazar, A.M. Biophysical Integration of MRI, EEG and Cognition in TBI Patients. Society of Neuronal Regulation Annual Meeting, Aspen, Colorado, September 16-21, 1997.

Thatcher, R. W., Biver, C., and Salazar, A.M. Bloch Equation MRI Simulation for the Evaluation of Brain Injury in TBI Patients. Fifteenth Annual Meeting, National Neurotrauma Society, New Orleans, Louisiana, October 24-25, 1997.

Thatcher, R. W., Biver, C., and Salazar, A.M. Biophysical Linkage Between MRI, EEG Coherence and Cognition in TBI Patients. Fifteenth Annual Meeting, National Neurotrauma Society, New Orleans, Louisiana, October 24-25, 1997.

Thatcher, R. W., Bierley, R., Biver, C., Drake, A. and Salazar, A.M. QEEG Correlates of Memory Scanning Speed in Traumatic Brain Injury. Ninth Annual Meeting American Neuropsychiatric Association, Honolulu, Hawaii, February 1-3, 1998.

Thatcher, R. W., Biver, C., and Salazar, A.M. 3-Dimensional Volume analysis of MRI Relaxometry and EEG Amplitude in Closed Head Injury. Twenty First Annual Meeting of the American Society of Neuroimaging. February 25 to 28, 1998, Orlando, Florida.

Thatcher, R. W., Biver, C., McAlaster, R and Salazar, A.M. Biophysical linkage between MRI and EEG amplitude in traumatic brain injury. 4<sup>th</sup> International Conference on Functional Mapping of the Human Brain, Montreal, Quebec, June 7 – 12, 1998.

Thatcher, R. W., Biver, C., McAlaster, R and Salazar, A.M. Biophysical linkage between MRI and EEG coherence in normals and traumatic brain injury. 4<sup>th</sup> International Conference on Functional Mapping of the Human Brain, Montreal, Quebec, June 7 – 12, 1998.

Thatcher, R.W., Biver, C., J. Gomez M, and Salazar, A.M. 3-Dimensional vector analysis of MRI relaxometry and current source localization (LORETA) of EEG in traumatic brain injury. 5<sup>th</sup> International Conference on Functional Mapping of the Human Brain, Dusseldorf, Germany, June 7 – 12, 1999.

Thatcher, R.W., Gomez, J., Biver, C. and Salazar, A. Capacitive effects and the EEG. 10<sup>th</sup> International Society for Brain Electromagnetism, Adelaid, Australia, October, 1999.

Thatcher, R.W., Biver, C., J. Gomez M, and Salazar, A.M. 3-Dimensional vector analysis of MRI relaxometry and current source localization (LORETA) of EEG in traumatic brain injury. NeuroImage, 9(6), S110, 2000.

Thatcher, R.W., Biver, C., J. Gomez M, North, D., and Salazar, A.M. Normative LORETA EEG database validations and reliability measures. EEG and Clinical Neuroscience Society, Monterey, Calif., 2001.

Thatcher, R.W., Biver, C., J. North, D, and Salazar, A.M. EEG analyses of traumatic brain injury: History and summary of relevant results. EEG and Clinical Neuroscience Society, Monterey, Calif., 2001.

Thatcher, R.W. NeuroGuide EEG analysis workshop. International Society of Neuronal Regulation Annual Meeting, Scottsdale, Arizona, September 16-21, 2002.

Thatcher, R.W., North, D., Biver, C. EEG normative databases of the differences between eyes open vs. eyes closed conditions. International Society of Neuronal Regulation Annual Meeting, Houston, Texas, September, 2003.

Thatcher, R.W., North, D., Biver, C. EEG discriminant analyses of children with learning disabilities. International Society of Neuronal Regulation Annual Meeting, Houston, Texas, September, 2003.

Thatcher, R.W., North, D., Biver, C. EEG inverse solutions and parametric vs. non-parametric statistics of Low Resolution Electromagnetic Tomography (LORETA). International Society of Neuronal Regulation Annual Meeting, Houston, Texas, September, 2003.

Thatcher, R.W., North, D., Biver, C. EEG analyses of children with learning disabilities. Eleventh Annual Future Health Congress, Palm Springs, California, February, 2004.

Thatcher, R.W., North, D., Biver, C. EEG and Intelligence: Univariate and Multivariate

**Comparisons Between EEG Coherence, EEG Phase Delay and Power, European International Society of Neuronal Regulation, Winterthur, Switzerland, February 24 – 28, 2004.**

**Thatcher, R.W., North, D., Biver, C. EEG and Intelligence: The Frontal Lobes and EEG Coherence and Phase Delays, International Society of Neuronal Regulation, Ft. Lauderdale, Florida, August 28, 2004.**

**Thatcher, R.W., Biver, C. and North, D. EEG Phase Reset. EEG and Clinical Neuroscience Society Annual Meeting, Boston, MA., EEG and Clinical EEG and Neuroscience, 37(2): 278-279, 2006.**

**Thatcher, R.W., Biver, C. and North, D. Spatio-Temporal Current Source Correlations and Cortical Connectivity. EEG and Clinical Neuroscience Society Annual Meeting, Boston, MA., EEG and Clinical EEG and Neuroscience, 37(2): 279-300, 2006.**

**Thatcher, R.W., North, D., Biver, C. Intelligence and EEG Current Density Using LORETA. EEG and Clinical Neuroscience Society Annual Meeting, Boston, MA., EEG and Clinical EEG and Neuroscience, 37(2): 278-279, 2006.**