

CURRICULUM VITAE

DUANE M. NORTH, M.S.

I. EDUCATION

Bachelor of Science, Applied Mathematics

University of Pittsburgh: Bradford, PA

Master of Science, Mathematics Education with Master's Thesis

Saint Bonaventure University: Saint Bonaventure, NY

II. ACADEMIC APPOINTMENTS AND WORK HISTORY

Research Statistical Analyst

Applied Neuroscience, Inc., September 2006 to the Present

Responsible for clinic report software development, EEG and MRI database management, Gaussian Cross-Validation analyses, tests of normative database sensitivity and accuracy, LORETA image development

Research Statistical Analyst, Oct. 1996 – 2006

The Bay Pines Foundation, Inc. at VA Medical Center, Bay Pines, FL

Data Processing/Research. Expertise in data analyses utilizing MS Excel, Access, Word, Power Point to create databases, merges, tabulations, and chart/graphs. Creating master templates in Excel to calculate large amounts of data, cleaning procedures, and table/graphs. Designing clinical reports and data batch processing using Visual Basic programming language with Excel. Applying statistical methods: Correlations, Factor Analyses, Discriminant Analyses, Regressions, T-TESTs, ANOVA/MANOVAs, ROC curves etc...using statistical software SPSS, SYSTAT, DATA DESK and MedCalc to analyze data. Co-author on major publications and many acknowledgements in scientific/medical journals.

Adjunct Professor of Mathematics, Jan. 1998 – May 1999

Schiller International University; Dunedin, FL

Instructed college freshman mathematics. Academically advise & mentor students

Programmer/Analyst: Market Research, Jan. 1996 – Sept. 1996

Research Data Services, Inc./The Klages Group; Tampa, FL

Tabulation manager by programming utilizing QUANTUM and SPSS programming languages. Analyze final data by checking numbers and statistics to frequencies/marginal counts. Other functions: coding, data-entry, scanning, and verifying

Internship - Market Research: Data Processing Specialist, Apr. 1995 – Oct. 1995

Sterling Research Group, Inc; St. Petersburg, FL

Programming computers using QUANTUM Programming Language utilizing the databases. Data-Entry & scanning surveys to create databases. Detail Orientation

**Director/Instructor of Mathematics & Computers, Aug. 1992 – June 1995
St. Petersburg Catholic High School; St. Petersburg, FL**

Instructed secondary school mathematics and computers. Directed the school's computer laboratory. Counseled students in mentorship program. (Algebra I-III, Trig, Statistics, Rem. Liberal Arts Math, Intro to Computers, BASIC I, II)

Florida State Teacher Certification, 1995

NYS Empire State Challenger Fellowship for Education & Teaching,

III. BIBLIOGRAPHY

A. JOURNAL ARTICLES

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*, 2007, 28(2): 118 –133.

- Thatcher, R.W., Biver, C. J., and North, D. Spatial-Temporal Current Source Correlations and Cortical Connectivity, *Clin. EEG and Neuroscience*, 38(1): 35 – 48, 2007.
- Thatcher, R.W., Biver, C. J., and North, D. LORETA current source correlations and intelligence, *Human Brain Mapping*, May 25, 2006.
- Thatcher, R.W., Biver, C. J., and North, D. Intelligence and EEG current density using Low Resolution Electromagnetic Tomography, *Human Brain Mapping*, 2007, 28(2): 118 – 133.
- Thatcher, R.W., North, D., and Biver, C. Development of cortical connectivity as measured by EEG coherence and phase. *Human Brain Mapp.*, 2008, 12:1400-1415
- Thatcher, R.W., North, D., and Biver, C. Intelligence and EEG phase reset: A two compartmental model of phase shift and lock, *NeuroImage*, 42(4): 1639-1653, 2008.
- Thatcher, R.W., North, D., and Biver, C. Self organized criticality and the development of EEG phase reset. *Human Brain Mapp.*, 2009, 30(2): 553-574.
- Thatcher, R.W., North, D., Neurbrander, J., Biver, C.J., Cutler, S. and DeFina, P. Autism and EEG phase reset: Deficient GABA mediated inhibition in thalamo-cortical circuits. *Dev. Neuropsych.* 34(6), 780–800, 2009.
- Thatcher, R.W., North, D.M., and Biver, C.J. 2011. Diffusion Tensor Imaging ‘Modules’ Correlated with LORETA Electrical NeuroImaging ‘Modules’. *Human Brain Mapping* (EPub, Jan. 2011).
- Thatcher, R.W., North, D., and Biver, C. (2014). LORETA EEG phase reset of the default mode network. *Frontiers in Neuroscience*, 8(529): 1-14.
- Thatcher, R.W., Palmero-Soler, E., North, D., and Biver, C. (2016). Intelligence and EEG measures of information flow: Efficiency and Homeostatic Neuroplasticity. *Sci. Rep.* 6, 38890; doi: 10.1038/srep38890

B. PUBLISHED ABSTRACTS

- 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., 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. nonparametric 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.
- 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. J. and North, D. M. 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. M, Biver, C. J. 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.

Thatcher, R.W., North, D. M. and Biver, C. J. The development of cortical connectivity as measured by EEG coherence and phase. International Society of Neuronal Regulation, San Diego, Calif, September 22, 2007.

Thatcher, R.W. North, D.W. and Biver, C.J. Intelligence and EEG coherence, phase and phase reset. AAPB, Annual Conference, Daytona Beach, Fl., May 17, 2008.

Thatcher, R.W., North, D.W. and Biver, C.J. Intelligence and EEG coherence, phase and phase reset. International Society for Neurofeedback and Research, Annual Conference, San Antonio, TX, August 27 - 31, 2008.

Thatcher, R.W., North, D., Neurbrander, J., Biver, C.J., Cutler, S. and DeFina, P. Autism and EEG phase reset: Deficient GABA mediated inhibition in thalamo-cortical circuits. ISNR, Indianapolis, IN, September 2009.