

CURRICULUM VITAE

ROBERT W. THATCHER, Ph.D.

248 176th Terrace Drive
Redington Shores, FL 33708
Tel. No. 727-244-0240

I. EDUCATION

University of Oregon, B.S. (Chemistry)

University of Waterloo (Waterloo, Canada), Ph.D. (Psychology, Specialty Biopsychology)

II. POSTDOCTORAL TRAINING

Albert Einstein College of Medicine, Post-doctoral Training (Neurobiology & Functional Neuroanatomy)

New York Medical College, Post-doctoral Training (Neurophysiology & Clinical Neuroscience)

III. ACADEMIC AND INSTITUTIONAL APPOINTMENTS

2006- Director NeuroImaging Applied Neuroscience Laboratories, Applied Neuroscience Research Institute, St. Petersburg, Florida

1994 – 2006 Adjunct Professor, Department of Neurology, University of South Florida College of Medicine, Tampa, Florida

1993-2006 Director Neuroimaging Lab and Director of EEG and MRI Defense and Veterans Head Injury Program, Bay Pines Veterans Administration Hospital, Bay Pines, Florida

1991-1993 Special Expert and Project Officer - Multimodal Neuroimaging, National Institutes of Neurological Disorders and Stroke, Medical Neurology Branch, Clinical Neurosciences Program, Bethesda, Md.

1981-1989 Director of the Neurometric Clinical Service, Maryland Medical Emergency Services Institute, University of Maryland School of Medicine, Baltimore, Md.

1979-1989 Research Professor, Department of Human Ecology, University of Maryland Eastern Shore and Director Applied Neuroscience Research Institute.

1979-1991 Research Professor, Department of Psychiatry, University of Maryland School of Medicine, Baltimore, Md.

1977-1979 Research Associate Professor, Dept. of Psychiatry, New York University School of Medicine, New York, New York.

1973-1977 Assistant Professor, Dept. of Psychiatry, New York Medical College, New York, New York.

1972-1973 Post-doctoral Fellow, Dept. of Physiology, New York Medical College, New York, New York.

1971-1972 Instructor, Neuroanatomy, Albert Einstein College of Medicine, Bronx, New York.

1971-1972 Post-doctoral Fellow, Department of Anatomy Albert Einstein College of Medicine, Bronx, New York.

1970-1971 Visiting Assistant Professor, Dept. of Psychology, Indiana University.

IV. CERTIFICATES

1978- Certified as an Expert in Neurometrics and Clinical Electrophysiology. New York University School of Medicine, New York, New York.

1992 Certificate for course completion as Basic Project Officer, National Institutes of Health.

1994 Certified Neurotherapist, Academy of Certified Neurotherapists.

1998 Certified in Scientific Specialty of QEEG, American Board of Certification of Quantitative Electroencephalography, September, 1998 - Diplomate

1999 Biofeedback Certification Institute of America – QEEG certificate.

2000 Certified in EEG/QEEG/Neurophysiology, EEG and Clinical Neuroscience (American Board of Electroencephalography and Clinical Neurophysiology – ABEN)). Ph.D. Examination Board member – ECNS/ABEN

V. PROFESSIONAL AFFILIATIONS

1992- Chairman of the committee for the integration of EEG/MEG into the "Human Brain-Map", as part of the NIMH and NSF Human Brain Project.

- 1994-** Member of Scientific Committee of the International Functional Brain Mapping Society.
- 1995-** Member of the Brain Map Advisory Board for the Human Brain Map Database.
- 1997-** Executive Committee Member - American Psychiatric Electrophysiology Association and American Medical EEG Society.
- 1998-** Elected Executive Board Member, Society for the Study of Neuronal Regulation.
- 1998-** Executive Board Member, EEG and Clinical Neuroscience Society and Committee member to revise the Conventional EEG exam for Ph.D.s
- 1998-** Board member American Board of Electroencephalography and Clinical Neurophysiology – ABEN
- 2000-** National Institutes of Health Scientific Advisory Board member for the creation of a Developmental MRI database.
- 2001-2003** Secretary, EEG and Clinical Neuroscience Society
- 2003-** Re-elected Executive Board Member, EEG and Clinical Neuroscience Society and 2004-2005 Program Committee member
- 2012-** Appointed to the Medical Advisory Board of BrainScope, Inc. for evaluation of traumatic brain injury in military personnel.
- 2019-** Member of Planning Committee of the World Human Brain Mapping Congress.
- 2020-** Appointed to the Board of Directors of the Society for Human Brain Mapping and Therapeutics (SBMT).

VI. OTHER PROFESSIONAL ACTIVITIES

A. EDITORIAL CONSULTANT AND REVIEWER

- 1972-2017** EEG and Clin. Neurophysiol; EEG and Clinical Neurophysiology; Clinical Neurophysiology; Science; Journal of Learning Disabilities; Internat. J. Neuroscience; J. of Neuroimaging; J. of Aging; Neuroimaging; Devel. Psychology; Devel. Psychopathology; Neuroimaging, Brain and Language; Brain Topography; Internat. J. of Psychophysiol.; J. of Neurotherapy; Human Brain Mapping; Perception and Motor Skills, Developmental Neuropsychology; Clinical Electroencephalography; Brain and Cognition.

B. EDITORIAL REVIEW BOARDS

- 1995-2002 Editorial Board of Neuroimaging**
- 1993-1997 Associate Editor, Journal of Neuroimaging**
- 1997-1999 Associate Editor, Journal of Neurotherapy**
- 1983-1998 Editorial Advisory Board, Journal of Learning Disabilities**
- 2003- Editorial Board, Journal of Clinical Electroencephalography and Neuroscience**
- 2009- Editorial Board Open Medical Imaging Journal**

C. STUDY SECTION REVIEWER

- 1996-2016 National Institutes of Health SBIR Primary Reviewer (8); SBIR Secondary Reviewer; NIH-NIMH; NIH - Human Brain Map, EEG inverse solutions, Brain Networks.**
- 1995- National Institutes of Health SBIR Primary Reviewer (2); SBIR Secondary Reviewer(2).**
- 1994- National Institutes of Health RO1 Primary Reviewer (1)**
- 1993- National Institutes of Health SBIR Primary Reviewer (4)**
- 1992- National Institutes of Health RO1 Primary Reviewer (2)**
- 1990- National Institutes of Health RO1 Secondary Reviewer (2)**
- 1989- National Science Foundation Secondary Reviewer (1)**
- 1980-1988 National Institutes of Health, National Science Foundation and Private Foundation Primary and Secondary Reviewer**

VII. MEMBERSHIP IN SCIENTIFIC SOCIETIES

- 1973-1981 American Psychological Association**
- 1973- American Association for the Advancement of Science**
- 1972-1981 Society for Neuroscience**
- 1973-1994 New York Academy of Science**
- 1978-1988 International Society of Neuropsychology**
- 1994-1997 Society of Magnetic Resonance in Medicine**
- 1994-1997 Society for Magnetic Resonance Imaging**
- 1996-2000 Human Brain Mapping Society**

- 1996-1999 Society for Neuronal Regulation Research**
- 1998- EEG and Clinical Neuroscience Society**
- 1999- International Society for Neurofeedback & Research**
- 2009- Association for Applied Psychophysiology & Biofeedback**
- 2020- Member of the Congressional Neuroscience Caucus**

X. PROFESSIONAL AWARDS AND HONORS

- 1968-1970 National Research Council Scholarship, University of Waterloo**
- 1970- Undergraduate Teaching Fellowship, University of Waterloo**
- 1971-1972 N.I.H. Postdoctoral Fellowship**
- 1972-1973 N.I.H. Postdoctoral Fellowship**
- 1981- Outstanding Scientist of the Year Award, Science Digest Magazine, December, 1981.**
- 1982- Third Prize for a Scientific Exhibit, Congress of Neurological Surgeons, Toronto, Canada, October, 1982.**
- 1985- Chancellor's Award for Outstanding Research, University of Maryland Eastern Shore, March 27, 1985.**
- 1988- IBM Fulcrum Award For Advanced Education Project.**
- 1991- Awarded Research Fellowship to the Center for Advanced Study, Stanford University, 1992 - 1993.**
- 1998- Life Time Achievement Award for Work in the Scientific Specialty of QEEG, American Board of Certification of Quantitative Electroencephalography, September, 1998.**
- 2008- The Hans Berger Award of Merit, Association for Applied Psychophysiology and Biofeedback, Neurofeedback Division, May 16, 2008.**
- 2009- Life Time Achievement Award in EEG and Quantitative EEG, International Society for Neurofeedback and Research, Indianapolis, Indiana, September, 2009.**
- 2012- Best Paper Award: "Differentiating transformational and non-transformational leaders on the basis of neurological imaging". Published in The Leadership Quarterly, 2012. Sponsored by the Center for Creative Leadership.**
- 2020- Pioneer in Medicine Award, 2020 Society for Brain Mapping and Therapeutics (SBMT).**

XI. MAJOR RESEARCH INTERESTS AND EXPERIENCE

Programing: Assembly language (IBM 360; PDP-12; PDP-11); Fortran, Basic, 'C', MATLAB and IDL.

Mathematics: Taken courses in calculus, differential equations, advanced calculus and complex analysis. Have studied the history of mathematics, differential geometry, algebraic topology and nonlinear dynamics.

Research Experience: Have published papers in developmental neurobiology, learning, memory, cognitive neuroscience, neurotoxicology, neurophysiology of time representation, neurophysiology of aesthetics, nonlinear dynamical models of brain development, mathematical models of EEG coherence, mild and severe neural trauma and functional neuroimaging. Experienced in multichannel EEG, Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI), multimodal registration of PET, MRI and EEG, dipole analyses of EEG and evoked potentials, intracellular and extracellular single unit analyses and multiunit analyses. Experienced in MRI segmentation and brain image classification analyses. JTFA analyses of coherence, power, phase and phase reset in controls, autistic subjects, traumatic brain injury and neuropsychological functioning.

Clinical Experience: Have written over 10,000 test reports using psychometrics and/or neuroimaging and/or electrophysiology. Clinical neuroscientist at the New York Medical College quantitative EEG clinic with E. Roy John in 1974. In 1977, with Drs. E. Roy John, Leslie Prichep and Bernard Karmel developed the first QEEG certification examination at NYU School of Medicine. Founded and directed the Neurometric Clinical Service at Shock Trauma, University of Maryland during which approximately 1,500 head trauma patients were evaluated. Patient experience includes children with learning disabilities and ADD, adults with tumors, strokes and mild and severe brain injury. Computerized EEG evaluator and report writer for Traumatic Brain Injured (TBI) patients as part of the Department of Defense and Veterans Head Injury Program (DVHIP). Responsible for training of neurology residents in clinical computerized EEG and clinical evoked potential analyses of various types of neurological disorders.

Administrative Experience: Have administered public and private grants, directed the Applied Neuroscience Institute at the University of Maryland, directed the Neurometrics Clinical Service at Shock Trauma, University of Maryland. Project officer for the NIH 128 channel EEG and EP system, responsible for design and implementation. Project director for multi-center EEG-MRI analyses of TBI patients for the Department of Defense and Veterans Head Injury Program (DVHIP), 1993 – 2006. Director of the Applied Neuroscience Research Institute.

Business Experience: Founder (2001) and CEO of Applied Neuroscience, Inc.

XII. CURRENT AND PAST FUNDED RESEARCH PROJECTS

- P.I.: USDA Grant (HRD-0200) 1979-1984
 P.I.: USDA Grant (CSRS 801-12-09C) 1979-1982
 P.I.: USDA GRANT (CSRS 701-15-05B) 1979-1983
 P.I.: MineraLab Grant 1981-1983 (\$20,000 in free analyses)
 P.I.: NIH (RR-08079-09) 1982-1985
 P.I.: Gallaudet College for the Deaf 1984-1985
 Co-P.I. Ryan Foundation Grant 1985-89
 Co-P.I. Columbia Foundation Grant 1985-89
 P.I.: Cardiovascular Research Ltd. Grant 1985-89
 P.I.: USDA Grant (NUT-0402) 1985-89
 P.I.: I.B.M. Fulcrum-II Equipment Grant 1987-91
 P.I.: D.O.D. research grant in traumatic brain injury (DVHIP)
 1994-2,001
 P.I.: 3-Dimensional analyses of EEG and MRI in TBI patients
 Bay Pines Foundation – 2001-2006

XIII. PROFESSIONAL FACILITIES

- a. Location of Administrative Office: 248 176th Terrace Drive, Redington Shores, Florida
 b. Location of Marketing and Product Development: 8200 Bryan Dairy Rd, Suite 300, Largo, Florida

XIV. GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS SUPERVISED

- Dr. Eileen Maisel, University of Connecticut, 1975-1979.
 Dr. David Cantor, State University of New York at Stony Brook, 1981-1985.
 Dr. Harriet Hanlon, Virginia Polytechnic Institute, 1991-1994.
 Dr. Ashlie Bell, Saybrook University - 2016-2018

XV. BIBLIOGRAPHY

A. BOOKS

Thatcher, R.W. and John, E.R. Functional Neuroscience, Vol. 1: Foundations of Cognitive Processes, E.R. John and R.W. Thatcher, Editors. L. Erlbaum Assoc., N.J., 1977.

John, E.R. Functional Neuroscience, Vol. II: Neurometrics: Quantitative Electrophysiological Analyses. E.R. John and R.W. Thatcher, Editors. L. Erlbaum Assoc., N.J., 1977.

Harmony, T. Functional Neuroscience, Vol. III: Neurometric Assessment of Brain Dysfunction in Neurological Patients. E.R. John and R.W. Thatcher, Editors. L. Erlbaum

Assoc., N.J., 1984.

John, E.R., Pritchep, L.S., Ahn, H., Kaye, H., Brown, D., Easton, P., Karmel, B., Toro, A., and Thatcher, R. Neurometric Evaluation of Brain Function in Normal and Learning Disabled Children. The University of Michigan Press, Ann Arbor, Mich., 1989.

Thatcher, R.W., Hallet, M., Zeffiro, T., John, E.R. and Huerta, M., Editors. Functional Neuroimaging: Technical Foundations, New York, Academic Press, 1994.

Thatcher, R.W., Lyon, G.R., Rumsey, J. and Krasnegor, N. Editors. Developmental Neuroimaging: Mapping the Development of Brain and Behavior, Academic Press, Florida, 1996.

Thatcher, R.W. Handbook of Quantitative Electroencephalography and EEG Biofeedback, Anipublishing, Florida, 2012.

Thatcher, R.W. and Lubar, J.F. (Editors) (2014). Z Score Neurofeedback: Clinical Applications. Academic Press, San Diego, CA.

Thatcher, R.W. 2nd Edition. Handbook of Quantitative Electroencephalography and EEG Biofeedback, Anipublishing, Florida, 2016.

B. BOOK CHAPTERS

Thatcher, R.W. Neural space-time structures involved in the reconstruction of an interval of time. In: Holography in Medicine, P. Gregeus, (ed.), IPS Science and Technology Press, 1975.

Thatcher, R.W. and John, E.R. Information and mathematical quantification of brain states. In: Behavior and Brain Electrical Activity, N. Burch and H.L. Altchuler, (eds.) Plenum Press, 1975.

Thatcher, R.W. Electrophysiological diagnosis of the learning disabled child. In: Proceedings of Panel on Basic Issues in Working with the Learning Disabled Neurologically Handicapped Child, H. Blau, (ed.), Blau Research Center, Inc., Queens, N.Y., pp. 21-26, 1975.

Thatcher, R.W. On the neural representation of experience and time. In: Experience Forms: Their Cultural and Individual Place and Function, G. Haydu (ed.), Mouton, Amsterdam, 1976.

Thatcher, R.W. Electrophysiological correlates of animal and human memory. In: The Neurobiology of Aging, R.D. Terry and S. Gershon (eds.), Raven Press, 1976.

Thatcher, R.W. and April, R.S. Evoked potential correlates of semantic information processing in normals and two aphasic patients. In: The Neuropsychology of Language:

Essays in Honor of Eric Lenneberg, R.W. Rieber, (ed.) 1976.

Thatcher, R.W. Evoked potential correlates of hemispheric lateralization during semantic information processing, In: Lateralization of the Nervous System, S. Harnad (ed.), Academic Press, 1977.

Thatcher, R.W. Review of the Book: The Neurophysiological Aspects of Human Mental Activity, 2nd Edition", N.P. Bekhtereva, Cambridge University Press, 1977.

Kaye, H., Thatcher, R.W., and Karmel, B.Z. Electrophysiological approaches to non-biased pupil assessment. In: Proceedings of the Multi Cultural Colloquium on Non-Biased Pupil Assessment, L. Elm (ed.), U.S. Government Printing Office, Washington, D.C., 1978.

Thatcher, R.W. Electrophysiological analyses of cognition. In: Proceedings of the Winter Brain Research Conference, C. Ying-Ling (ed.), Brain Information service, UCLA, 1978.

Thatcher, R.W. Neurolinguistics: Evoked potential correlates of language and cognition. In: Perspectives in Event-Related Brain Potential Research, D. Otto (ed.), U.S. Government Printing Office, Washington, D.C., 1978.

Thatcher, R.W. Neuroelectric techniques in clinical neurology. In: The Proceedings of the 17th Annual San Diego Biomedical Symposium, Academic Press, 1978.

Thatcher, R.W. and Maisel, E.B. Functional landscapes of the brain: An electrotopographic perspective. In: Evoked Brain Potentials and Behavior, H. Begleiter (ed.), Plenum Press, 1979.

Thatcher, R.W. Spatial synchronization of brain electrical activity related to memory, logic and semantic information processing. In: The Neurophysiological Mechanisms of Goal Directed Behavior and Learning, First Joint Soviet-American Symposium in Psychology, R.F. Thompson (ed.), Academic Press, 1980.

John, E.R., Prichep, L., Ahn, H., Brown, D., Easton, P., Karmel, B., Thatcher, R., and Toro, A. Neurometrics: Quantitative electrophysiological analysis for diagnosis of learning disabilities and other brain dysfunctions. In: Multi-disciplinary Perspectives in Event Related Brain Potential Research, C. Otto (ed.), U.S. Government Printing Office, Washington, D.C., 1978.

John, E.R., Karmel, B., Corning, W., Easton, P., Brown, D., Ahn, H., John, M., Harmony, T., Princhip, L., Toro, A., Gershon, I., Bartlett, F., Thatcher, R., Kaye, H., Valdes, P., and Schwartz, E. Neurometrics: Computerized diagnosis and remediation of brain dysfunctions. In: Health Handbook, G.K. Cracko, (ed.), North Holland Publishing Co., 1979.

Thatcher, R.W., McAlaster, R., Horst, R.L. and Lester, M.L. Evoked Potential Correlates of Cognitive Functioning in Children. In A. Rothenberger (Ed.), Developments in

Neurology, Vol. 6; Event Related Potentials in Children, Elsevier Biomedical Press, Holland, 1982, pp. 337-344.

Horst, R.L., Thatcher, R.W., Lester, M.L. and McAlaster, R. Differential Effects of Age on sensory Evoked Potentials in Children. In A. Rothenberger (Ed.), Event Related Potentials in Children, Elsevier Biomedical Press, Holland, 1982, pp. 71-76.

Fishbein, D. and Thatcher, R.W. Nutrition and electrophysiological indices of maladaptive behavior. In: H. Lieberman and R. J. Wurtman (Eds.), Research Strategies for Assessing the Behavioral Effects of Foods and Nutrients, and Nutrients, Conference Proceedings, M.I.T., November 9, 1982.

Thatcher, R.W., McAlaster, R., Lester, M.L., Horst, R.L. and Cantor, D.S. Hemispheric EEG Asymmetries Related to Cognitive Functioning in Children. In: Cognitive Processing in the Right Hemisphere, A. Perecuman (Ed.), New York: Academic Press, (1983).

Thatcher, R.W. Neurometrics: A Matter of Scale? In: R. Karrer and D. Otto (Eds.), Sixth International Evoked Potential Conference: The Role of ERPs in the Developing Brain: Aberrant Development, New York Academy of Sciences, Vol. 336, 1983, pp. 321-325.

Thatcher, R.W. and Cantor, D.S. Electrophysiological techniques in the assessment of malnutrition. In J. Brozek and B. Schurch (Eds.), Critical Assessment of Key Issues in Research on Malnutrition and Behavior, Elsevier Biomedical Press, Holland, 1984, pp. 116-136.

Ducker, T., Thatcher, R., McAlaster, R. and Cantor, D.S. Spinal Cord Monitoring in Neurosurgery in the United States: An Update. Proceedings of the Third International Spinal Cord Monitoring Conference, T. Ducker, R. Cracco and T. Jones (Eds.), Plenum Press, New York, 1986.

McAlaster, R., Thatcher, R., Krause, P.J. and Geisler, F. Somatosensory evoked potential measures of nerve conduction in spinal cord patients. In: New Techniques in Spinal Cord Monitoring, T. Ducker and B. Randal (Eds.), Plenum Press, 1987.

McAlaster, R., Thatcher, R., Krause, P.J. and Geisler, F. Diagnostic value of evoked potentials in evaluating conversion syndrome in neurotrauma patients. In: New Techniques in Spinal Cord Monitoring, T. Ducker and B. Randal (Eds.), Plenum Press, 1987.

Thatcher, R.W. Brain stimulation of comatose patients: A chaos and non-linear dynamics approach. In: E. Roy John et al (Eds.) Machinery of the Mind, Vol. II, Birkhowser Pub. Co., Boston, Mass., 1991.

Fishbein, D. and Thatcher, R.W. Electrophysiological correlates of maladaptive behavior. In: D. Dyson (Ed.), Neuropsychology and the Law, Plenum Press: New York, 1991.

Fishbein, D. and Thatcher, R.W. (1991). Legal Applications of Electrophysiological Assessments. In: Neuropsychology and the Law. Eds. Dywan, J., Kaplan, R.D. and

Pirozzolo, F.J. , Springer -Verlag Series in Neuropsychology, N.Y. (pg. 135-164).

Thatcher, R.W. , Toro, C., Pflieger, M.E. and Hallett, M. Multimodal registration of EEG, PET and MRI: Analyses of neural network switching, Society of Magnetic Resonance in Medicine: Functional MRI of the Brain, Berkeley, CA, 1993.

Thatcher, R.W. Cyclic Cortical Re-Organization: Origins of Human Cognitive Development. In: G. Dawson and K. Fischer (Eds.), Human Behavior and the Developing Brain. Guilford Press: New York, 1994.

Wang, B., Toro, C., Zeffiro, T., Thatcher, R. and Hallett, M. Integrating electrophysiological data with brain images: I- Sources of event related potentials, PET and MRI. In: R. Thatcher, M. Hallett, T. Zeffiro, E. John and M. Huerta (Eds.), Functional Neuroimaging: Technical Foundations, Academic Press: New York, 1994.

Thatcher, R., Wang, B., Toro, C. and Hallett, M. Human Neural Network Dynamics Using Multimodal Registration of EEG, PET and MRI. In: R. Thatcher, M. Hallett, T. Zeffiro, E. John and M. Huerta (Eds.), Functional Neuroimaging: Technical Foundations, Academic Press: New York, 1994.

Thatcher, R.W. Functional analyses of human cyclic cortical reorganization. In: R. Thatcher, M. Hallett, T. Zeffiro, E. John and M. Huerta (Eds.), Functional Neuroimaging: I- Technical Foundations, Academic Press: New York , 1994.

Toro, C., Wang, B., Zeffiro, T., Thatcher, R.W. and Hallett, M. Cortical activation accompanying self-paced finger movements: Integration of equivalent dipole sources with MR and PET images. In: R. Thatcher, M. Hallett, T. Zeffiro, E. John and M. Huerta (Eds.), Functional Neuroimaging: I- Technical Foundations, Academic Press: New York, 1994.

Thatcher, R.W., Neuroimaging of cyclic cortical reorganization during human development, In: Thatcher, R.W., Lyon, G.R., Rumsey, J. and Krasnegor, N. Editors. Developmental Neuroimaging: Mapping the Development of Brain and Behavior, Academic Press, Florida, 1996.

Thatcher, R.W. Multimodal assessments of developing neural networks: Integrating PET, MRI and EEG, In: Thatcher, R.W., Lyon, G.R., Rumsey, J. and Krasnegor, N. Editors. Developmental Neuroimaging: Mapping the Development of Brain and Behavior, Academic Press, Florida, 1996.

Thatcher, R.W. Human frontal lobe development: A theory of cyclic cortical reorganization. In: Krasnegor, N., Lyon, R. and Goldman-Rakic, P. Editors. Development of the Prefrontal Cortex: Evolution, Neurobiology, and Behavior, Brooks Press, Boston, 1997.

Thatcher, R.W. A predator-prey model of human cerebral development. In: K. Newell and P. Molenaar Editors, Dynamical Systems in Development, L. Erlbaum Assoc, New

Jersey, 1998.

Thatcher, R.W. EEG database guided neurotherapy. In: J.R. Evans and A. Abarbanel Editors, Introduction to Quantitative EEG and Neurofeedback, Academic Press, San Diego, 1999.

Thatcher, R.W. Cycles and gradients in development of the cortex. In: Fischer, Bernstein & Immordinao-Yang, Mind, Brain and Education in Reading Disorders, Cambridge University Press, Cambridge Mass., 2004.

Thatcher, R.W. Electroencephalography and mild traumatic brain injury. In: Foundations of Sport-Related Brain Injuries. Semyon Slobounov (Ed.), 2006.

Boutros, N., Thatcher, R.W. and Galderisi, S. Electrodiagnostic Techniques in Neuropsychiatry, in: Neuropsychiatry and Behavioral Neuroscience: The American Psychiatric Textbook, S. Yudofsky and R. Hales (eds.), Amer. Pscyh. Publishing, Inc., London, 2008.

Thatcher, R.W. and Lubar, J.F. History of the scientific standards of QEEG normative databases. In: Introduction to QEEG and Neurofeedback: Advanced Theory and Applications, T. Budzinsky, H. Budzinsky, J. Evans and A. Abarbanel (eds), Academic Press, San Diego, CA, 2008.

Thatcher, R.W. EEG Evaluation of Traumatic Brain Injury and EEG Biofeedback Treatment. In: Introduction to QEEG and Neurofeedback: Advanced Theory and Applications, T. Budzinsky, H. Budzinsky, J. Evans and A. Abarbanel (eds), Academic Press, San Diego, CA, 2008.

Collura, T.F, Thatcher, R.W., Smith, M.L., Lambos, W.A. and Stark, C.R. EEG biofeedback training using live Z-scores and a normative database. In: Introduction to QEEG and Neurofeedback: Advanced Theory and Applications, T. Budzinsky, H. Budzinsky, J. Evans and A. Abarbanel (eds), Academic Press, San Diego, CA, 2008.

Thatcher, R.W. Higher-Order Network Reworking – New Findings. In: M. Ferrari, L. Vuletic (eds.), *The Developmental Relations between Mind, Brain and Education*, Springer, 2010.

Thatcher, R.W. Quantitative EEG and EEG Biofeedback/Neurofeedback. In Swartz, et al. "Biofeedback", (in press 2014).

Thatcher, R.W., North, D., and Biver, C. (2014). Technical foundations of Z score neurofeedback. In: Z Score Neurofeedback: Clinical Applications R. W. Thatcher and J. F. Lubar, Ph.D. (Editors), Academic Press, San Diego, CA

Thatcher, R.W., North, D., and Biver, C. (2014). Network Connectivity and LORETA Z score neurofeedback. In: *Z Score Neurofeedback: Clinical Applications* R. W. Thatcher and J. F. Lubar, Ph.D. (Editors), Academic Press, San Diego, CA

Thatcher, R.W., North, D., and Biver, C. (2014). BrainSurfer 3-Dimensional Z Score Brain-Computer-Interface. In: *Z Score Neurofeedback: Clinical Applications* R. W. Thatcher and J. F. Lubar, Ph.D. (Editors), Academic Press, San Diego, CA

Foster, D., and Thatcher, R.W. (2014). LORETA Z Score Neurofeedback in the treatment of Veterans with PTSD and TBI. In: *Z Score Neurofeedback: Clinical Applications* R. W. Thatcher and J. F. Lubar, Ph.D. (Editors), Academic Press, San Diego, CA

C. JOURNAL ARTICLES:

Thatcher, R.W. and Kimble, D.P. Effect of amygdaloid lesions on retention of an avoidance response in overtrained and non-overtrained rats. Psychon. Sci., 6(1), :9-10, 1966.

Thatcher, R.W. and Cadell, T.E. A demonstration of time dependent processes associated with recall. Proc. 77th Annual Conv. APA, 1969.

Thatcher, R.W. and Purpura, D.P. Maturation status of inhibitory and excitatory synaptic activities of thalamic neurons in neonatal kittens. Brain Research, 44, :661-665, 1972.

Thatcher, R.W. and Purpura, D.P. Postnatal development of thalamic synaptic events underlying evoked recruiting responses and electrocortical activation. Brain Research, 60, :21-24, 1973.

Thatcher, R.W. Evoked potential correlates of delayed letter matching. Behav. Biol., 19: 1-23, 1977.

John, E.R. Karmel, B., Corning, W. Easton, P., Brown, D., Ahn, H., John, M., Harmony, T., Prichep, L., Toro, A., Gerson, I., Bartlett, F., Thatcher, R., Kaye, H., Valdes, P., Schwartz, E. Neurometrics: Numerical taxonomy identifies different profiles of brain functions within groups of behaviorally similar people. Science, 196, :1393-1410, 1977.

Thatcher, R.W. Neurolinguistics: Theoretical and evolutionary perspectives. Brain and Language, 11, :235-260, 1980.

Thatcher, R.W., Lester, M.L., McAlaster, R., and Horst, R. Effects of Low Levels of Cadmium and Lead on Cognitive Functioning in Children, Archives of Environmental Health, 37: 159-166, 1982.

Lester, M.L., Thatcher, R.W. and Monroe-Lord, L. Refined Carbohydrate Intake, Hair Cadmium Levels and Cognitive Functioning in Children. Journal of Nutrition and Behavior, 1: 3-13, 1982.

Vance, H.B., Lester, M.L. and Thatcher, R.W. Interscorer reliability of MPDT-R. Psychology in Schools, 20: 13-17, 1983.

Thatcher, R.W. and Lester, M.L. Anatomically-related variations in trace metal concentrations in hair. Journal Clinical Chemistry, 29(9): 1691, 1983.

Thatcher, R.W., Lester, M.L., McAlaster, R., Horst, R., and Ignasias, S.W. Intelligence and Lead Toxins in Rural Children, Journal of Learning Disabilities, 16: 355-359, 1983.

Thatcher, R.W., McAlaster, R. and Lester, M.L. Evoked Potentials Related to Hair Cadmium and Lead. Annals of the New York Academy of Sciences, Vol. 425: 23 - 31, 1984.

Thatcher, R.W. and Fishbein, D.H. Computerized EEG, nutrition and behavior. Journal of Applied Nutrition, 36: 81-102", 1984.

Thatcher, R.W., Lester, M.L., McAlaster, R. and Cantor, D.S. Comparisons among Nutrition, EEG and Trace Elements in Predicting Reading Ability in Children. Annals of the New York Academy of Sciences, Vol. 433: 87 - 96, 1985.

Thatcher, R.W., and Lester, M.L. Nutrition, Environmental Toxins and Computerized EEG: A Mini-Max Approach to Learning Disabilities. Journal of Learning Disabilities, 18: 287 - 297, 1985.

Cantor, D.S., Thatcher, R. W. and Ozand, P. Choline Supplementation in Downs Syndrome: A Case Study Psychological Reports, 58: 207 - 217, 1986.

Thatcher, R.W., Krause, P and Hrybyk, M. Corticocortical Association Fibers and EEG Coherence: A Two Compartmental Model. Electroencephalog. Clinical Neurophysiol., 64: 123 - 143, 1986.

Lester, M., Horst, R., and Thatcher, R.W. Protective effects of calcium and zinc against lead and cadmium toxicity in children. Nutrition and Behavior, 3: 145 - 161, 1986.

Cantor DS, Thatcher RW, Hrybyk M, Kaye H. Computerized EEG analyses of autistic children. J. Autism Dev. Disord., 16(2):169-87, 1986.

Fishbein, D. and Thatcher, R.W. New Diagnostic Methods in Criminology: Assessing Organic Sources of Behavioral Disorders. Research on Crime and Delinquency, 23 (3): 240 - 267, 1986.

Cantor, D.S., Thatcher, R.W. and Kaye, H. Computerized EEG Analyses of Autistic Children. Int. J. Autism, 114: 21-36, 1987.

Thatcher, R.W., Walker, R.A. and Guidice, S. Human cerebral hemispheres develop at different rates and ages. Science, 236: 1110-1113, 1987.

Thatcher, R.W., Walker, R.A., Gerson, I. and Geisler, F. EEG discriminant analyses of

mild head trauma. EEG and Clin. Neurophysiol., 73: 93-106, 1989.

Wolff, T. and Thatcher, R.W., Cortical reorganization in deaf children. J. of Clinical and Experimental Neuropsychology, 12: 209-221, 1990

Fishbein, D., Thatcher, R.W. and Cantor, D.S. Ingestion of carbohydrates varying in complexity produce differential brain responses. Clinical EEG, 43: 21-36, 1990.

Thatcher, R.W., Cantor, D.S., McAlaster, R., Geisler, F. and Krause, P. Comprehensive predictions of outcome in closed head injury: The development of prognostic equations. Annals New York Academy of Sciences, 620: 82-104, 1991.

Thatcher, R.W. Maturation of the human frontal lobes: Physiological evidence for staging. Developmental Neuropsychology, 7(3): 370-394, 1991.

Johnstone, J. and Thatcher, R.W. Quantitative EEG analysis and rehabilitation issues in mild traumatic brain injury. J. Ins. Med., 19: 32-48, 1992.

Thatcher, R.W. Cyclic cortical reorganization during early childhood. Brain and Cognition, 20: 24-50, 1992.

Thatcher, R.W. Are rhythms of human cerebral development "traveling waves"? Behavior and Brain Sciences, 14(4): 575, 1992.

Thatcher, R.W. New Advances in Neuroimaging - Associate Editor's Note. Journal of Neuroimaging, 4(2): 121, 1994.

Toro, C., Deuschl, G., Thatcher, R.W., Sato, S., Kufts, C. and Hallett, M. Event related desynchronization with voluntary movements in humans: Subdural and scalp recordings and their relation to movement-related cortical potentials. EEG and Clin. Neurophysiol., 93(5):380-389, 1994.

Thatcher, R.W. Psychopathology of Early Frontal Lobe Damage: Dependence on Cycles of Postnatal Development. Developmental Pathology, 6: 565-596, 1994.

Thatcher, R.W. Tomographic EEG/MEG. Journal of Neuroimaging, 5, 35-45, 1995.

Clarke, L.P., Velthuisen, R.P., Camacho, M.A., Heine, J.J., Vaidyanathan, M., Hall, L.O., Thatcher, R.W. and Silbiger, M.L. Review of MRI segmentation: Methods and applications. J. Magnetic Res. Imaging 13(3): 343-368, 1995.

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. Neural coherence and the content of consciousness. Consciousness and cognition, 6: 42-49, 1997.

Green, J.B., Thatcher, R.W., Bialy, Y. and Sora, E. (1996). Movement related cortical potentials (MRCP's) without movement. *NeuroImage* 06/1996; 3(3). DOI:10.1016/S1053-8119(96)80210-2

Green, J.B., Bialy, Y., Sora, E. and Thatcher, R.W. An electroencephalographic study of imagined movement. *Arch. Phys. Med. & Rehab.*, 78: 578-581, 1997.

Green, J.B., Thatcher, R.W. Sora, E., Bialy, Y., and Ricamato, A. An electroencephalographic study of cerebral reorganization after spinal cord injury. *Neurology*, 28: A414 (Supplement), 1997.

Green, J.B., Sora, E., Bialy, Y., Ricamato, A. and Thatcher, R.W. Cortical sensorimotor reorganization after spinal cord injury: An electroencephalographic study. *Neurology* , 50:1115-1121, 1998.

Thatcher, R.W. EEG normative databases and EEG biofeedback. *Journal of Neurotherapy*, 2(4): 8-39, 1998.

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.

Daniel, J.C., Olesniewicz, M., Reeves, D.L., Tam, D., Bleiberg, J., Thatcher, R.W. and Salazar, A.M. Repeated measures of cognitive processing efficiency in adolescent athletes: Implications for monitoring recovery from concussion. *Neuropsychiatry, Neuropsychol and Behav. Neurol.*, 12(3): 167-169, 1999.

Thatcher, R.W., Moore, N., John, E.R., Duffy, F., Hughes, J. and Krieger, M. QEEG and traumatic brain injury: Rebuttal of the American Academy of Neurology 1997 Report by the EEG and Clinical Neuroscience Society. *Clinical EEG* 30(3): 94-98, 1999.

Green, J.B., Sora, E., Bialy, Y., Ricamato, A. and Thatcher, R.W. Cortical motor reorganization after paraplegia: an EEG study. *Neurology*, 11;53(4):736-43, 1999.

Hoffman, D.A., Lubar, J.F., Thatcher, R.W., Serman, B.M., Rosenfeld, P.J., Striefel, S., Trudeau, D., and Stockdale, S. Limitation of the American Academy of Neurology and American Clinical Neurophysiology Society Paper on QEEG. *J of Neuropsychia. and Clin. Neurosciences*; 11(3) :401-407, 1999.

Hanlon, H. W., Thatcher, R. W. & Cline, M. J. (1999). Gender differences in the development of EEG coherence in normal children. *Developmental Neuropsychology*, 16 (3), 479-506.

Thatcher, R.W. QEEG and traumatic brain injury: Present and future. Brain Injury, 12: 13-21, 1999.

Thatcher, R.W. EEG Operant Conditioning (Biofeedback) and Traumatic Brain Injury. Clinical EEG, 31(1): 38-44, 2000.

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.

Gomez, J. and Thatcher, R.W. Frequency domain equivalence between potentials and currents using LORETA. Int. J. of Neuroscience, 107: 161-171, 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, 112: 1729-1745, 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, 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., 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. 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.
- McCormick, L.M., Yamada, T., Yeh, M., Brumm, M.C. and Thatcher, R.W. Antipsychotic Effect of Electroconvulsive Therapy is Related to Normalization of Subgenual Cingulate Theta Activity in Psychotic Depression. *J. of Psychiatric Res.*, 43(5): 553-560, 2009.
- Thatcher, R.W., Remembrances of Erwin Roy John, *Journal of Neurotherapy*, 13: 1-3, 2009.
- Thatcher, R.W. A review of "Rhythms of the Brain" by G. Buzsaki. *Journal of Neurotherapy*, 13: 5-6, 2009.
- 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.
- Narushima K., McCormick, L.M., Yamada, T., Thatcher, R.W. and Robinson, R.G. Subgenual cingulate theta activity predicts treatment response of repetitive transcranial magnetic stimulation in participants with vascular depression. *J. Neuropsychiatry and Clinical Neuroscience*, 22(1):75-84, 2010.
- Thatcher, R.W. Reliability and validity of quantitative electroencephalography (qEEG). *J. of Neurotherapy*, 14:122-152, 2010.
- Thatcher, R.W. 2010. LORETA Z score biofeedback. *NeuroConnections Newsletter*, Part 2, 15-17.
- Amen, D.G., Newberg, A., Thatcher, R.W., Jin, Y., Wu, J., Keator, D., Willeumier, K. (2011). Impact of Playing Professional American Football on Long Term Brain Function. *J Neuropsychiatry Clin. Neurosci* 23(1): 98-106.
- Thatcher, R.W. 2012. Coherence, phase difference, phase shift and phase lock in EEG/ERP analyses. *Developmental Neuropsychology*, 37(6):476-96. doi: 10.1080/87565641.2011.619241.
- Thatcher, R.W., North, D.M., and Biver, C.J. 2011. Diffusion Tensor Imaging 'Modules' Correlated with LORETA Electrical NeuroImaging 'Modules'. *Human Brain Mapping* 33(5):1062-1075
- Collura, T.F. and Thatcher, R.W. (2011). Comment on Study of QEEG-Guided Neurofeedback for Migraine Headaches and Randomized Control Designs. Letter to the Editor, *Clin. EEG and*

Neuroscience. 42(2):VIII-IX

Thatcher, R.W. (2011). Neuropsychiatry and Quantitative Electroencephalography in the 21st Century. *Neuropsychiatry*, October, 1(5): 495-514 (doi: 10.2217/npv.11)

Thatcher, R.W. (2011). Neuroleadership. *NeuroConnections Newsletter*, part 4, 12-14.

Thatcher, R.W. (2011). LORETA Z score biofeedback and traumatic brain injury. *NeuroConnections Newsletter*, part 3, 9-12.

Thatcher, R.W. (2012). Latest Developments in Live Z-score Training: Symptom Check List, Phase Reset and LORETA Z Score Biofeedback. (2012). *J. of Neurotherapy*, 17(1): 69-87.

Balthazard, P.A., Waldman, D.A., Thatcher, R.W. and Hannah, S.T. (2012). Differentiating transformational and non-transformational leaders on the basis of neurological imaging. *Leadership Quarterly*, 23(2) : 244-258.

Thatcher, R.W., North, D., and Biver, C. (2012) Diffusion Spectral Imaging Modules Correlate with EEG LORETA Neuroimaging Modules. *Human Brain Mapping* 33:1062–1075.

Hannah, S.T., Pierre, P.A. Waldman, D.A. Jennings, P. L., Thatcher, R. W. (2013). The psychological and neurological bases of leader self-complexity and effects on adaptive decision-making. *Journal of Applied Psychology*, Vol. 98, No. 3, 393–411

Hannah, S.T., Balthazard, P.A., Waldman, D.A., Jennings, P.L. and Thatcher, R.W. (2013). The Psychological and Neurological Bases of Leader Self-Complexity and Effects on Adaptive Decision-Making. *Journal of Applied Psychology*, doi: 10.1037/a0032257

Gao, Y., Burns, S.S., Lauzon, C.B., Fong, A.E., James, T.A., Lubar, J.F., Thatcher, R.W., Twillie, D.A., Wirt, M.D., Zola, M.A., Logan, B.W., Anderson, A.W. and Landman, B.A. (2013). Integration of XNAT/PACS, DICOM, and Research Software for Automated Multi-modal Image Analysis. *Proceedings of SPIE*, doi: 10.1117/12.2007621

Thatcher, R.W. (2014). Advances in assessment and treatment of ADHD using network analyses. *Biofeedback*, 42(2) DOI: 10.5298/1081-5937-42.2.07

Cannon RL, Pigott HE, Surmeli T, Simkin DR, Thatcher RW, Van den Bergh W, Gluck G, Lubar JF, Davis R, Foster DS, Douglas J, Malcolm AT, Bars D, Little K, Center W, Berman M, Russell H, Hammer B, Koberda JL. (2014). The problem of patient heterogeneity and lack of proper training in a study of EEG neurofeedback in children. *J Clin Psychiatry*. 2014 Mar;75(3):289-90. doi: 10.4088/JCP.13lr08850

Simkin DR, Thatcher RW, Lubar J. (2014). Quantitative EEG and Neurofeedback in Children and Adolescents: Anxiety Disorders, Depressive Disorders, Comorbid Addiction and Attention-deficit/Hyperactivity Disorder, and Brain Injury. *Child Adolesc Psychiatr Clin N Am*. 2014 Jul;23(3):427-464. doi: 10.1016/j.chc.2014.03.001

Moss, D., Cannon, R., Thatcher, R.W., Koberda, J.L. and Gunkelman, J. (2014). Special Issue: Advances in the Use of QEEG and Neurofeedback for ADHD 42(2):37-38.
DOI:10.5298/1081-5937-42.2.09

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

Thatcher, R.W., Lubar, J. F. and Koberda, J.L. (2019). Z-Score EEG Biofeedback: Past, Present and Future. *Biofeedback*, 47(4): 89-103, DOI: 10.5298/1081-5937-47.4.04

Thatcher R.W., Biver C.J., Soler E.P., Lubar J., Koberda J.L. (2020). New Advances in Electrical Neuroimaging, Brain Networks and Neurofeedback Protocols. *J Neurol Neurobiol* 6(3): dx.doi.org/10.16966/2379-7150.168

XVI- ABSTRACTS:

Thatcher, R.W. Neuroanatomical correlates of time reconstruction in the rat. (abstr.) 1st Annual Neuroscience Convention, Washington, D.C., 1971.

Thatcher, R.W. and Purpura, D.P. Intracellular studies of synchronizing synaptic events in immature thalamic neurons. (abstr.) Amer. Physiol. Soc., 1972.

John, E.R., Easton, P. and Thatcher, R.W. Automatic evaluation of electrocortical activity in the newborn child. Symposium on Developmental Psychobiology and Psychiatry, Soc. of Biol. Psychiatry, 29th Annual Meeting (abstr.), Boston, Mass., 1974.

Thatcher, R.W. Evoked potential correlates of human short-term memory. (abstr.) Fourth Annual Neurosciences Convention, 1974.

Thatcher, R.W. A quantitative electrophysiological analysis of human memory, (abstr.), Symposium on Mechanisms of Memory, Eastern Psychological Assoc., Philadelphia, PA, 1974.

Thatcher, R.W. The application of electrophysiological test batteries to evaluate brain function. (abstr.). Symposium on: Basic Issues in Learning Disabled and Neurologically Handicapped Children, 52nd Annual Conf. for Exceptional Children, N.Y., 1974.

Thatcher, R.W. Evoked potential correlates of semantic information processing. (abstr.) Fifth Annual Neuroscience Convention, N.Y., 1975.

Thatcher, R.W. Riemannian geometry and the neurological representation of time. (abstr.)

Presented at Conference on Nonlinearity and the Biological Sciences, Columbia University, 1977.

Thatcher, R.W. Computer analyses of the late components of Evoked Responses. (abstr.) Amer. Electroenceph. Society 31st Annual Meeting, Miami, Florida, 1977.

Thatcher, R.W. and Maisel, E.B. Evoked potential correlates of logic: Negation and equivalence. (abstr.) Seventh Annual Neuroscience Convention, Anaheim, CA, 1977.

Maisel, E.B. and Thatcher, R.W. Evoked potential correlates of delayed matching in adults and children. (abstr.) Seventh Annual Neuroscience Convention, Anaheim, CA, 1977.

Thatcher, R.W., Lester, M.L., Ignasias, S.W. and McAlaster, R. Trace Element Assessment of Learning Disabled Children (abstract). Proceedings of the Ninth Annual Meeting of the Orton Society, October, 1980.

Thatcher, R.W., Lester, M.L., Ignasias, S.W. and McAlaster, R. Relations between Lead and Cadmium Toxins and Intelligence in Rural Children (abstract). Proceedings of the USDA Cooperative Research Symposium, Atlanta, Georgia, November, 1980.

Thatcher, R.W., Lester, M.L., Ignasias, S.W. and McAlaster, R. Electrophysiological Assessment of Brain Development and Nutrition in Rural Children (abstract). Proceedings of the USDA Cooperative Research Symposium, Atlanta, Georgia, November, 1980.

Thatcher, R.W., Lester, M.L., and McAlaster, R. Electrophysiological and Trace Element Assessment of Learning Disabled Children (Abstract). Proceedings of The Ninth Annual Meeting of The International Neuropsychology Society. Atlanta, Georgia, Feb. 15-22, 1981.

Thatcher, R.W., Lester, M.L., and McAlaster, R. Electrophysiological Analysis of Interhemispheric Coordination in Learning Disabled Children. Proceedings of Symposium on Cognitive Processing in the Right Hemisphere, Institute for Research in Behavioral Neuroscience, New York University School of Medicine, New York, November, 1980.

Harland, B.F., Thatcher, R.W. and Lester, M.L. Hair Mineral Concentrations and Learning Disabilities (abstract). Proceedings of the Twelfth Annual Meeting of the Trace Element Society, Melbourne, Australia, July, 1981.

Thatcher, R.W., Lester, M.L., McAlaster, R., and Horst, R. EEG Correlates of Intelligence in Children (abstract). Proceedings of the Society for Neuroscience Annual Meeting. Los Angeles, California, November, 1981.

Lester, M.L., Thatcher, R.W., Monroe-Lord, L. and McAlaster, R. Trace Mineral and Dietary Correlates of Childrens' Mental Performance (abstract). Proceedings of the International Conference of the Association for Children and Adults with Learning Disabilities, Chicago, March, 1982.

Cantor, D.S., Thatcher, R.W., McAlaster, R., Lester, M.L. and Horst, R.L. Topographic Distribution of EEG Hemispheric Coherence Related to Cognitive Functioning in Children. Abstract submitted to: Society for Research in Child Development, (December, 1981).

Thatcher, R.W., McAlaster, R., Horst, R.L., and Lester, M.L. Evoked Potential Correlates of Cognitive Functioning in Children. (Abstract). Symposium on Event Related Potentials in Children - Basic Concepts and Clinical Applications, Essen. Germany, June 11-13, 1982.

Horst, R.L., Thatcher, R.W., Lester, M.L., McAlaster, R. Differential Effects of Age on Sensory Evoked Potentials in Children. (Abst.) Symposium on Event Related Potentials in Children - Basic Concepts and Clinical Applications, Essen. Germany, June 11-13, 1982.

Ducker, T.B., Thatcher, R. W., Cantor, D. L., Meyer, W. and McAlaster, R. Comprehensive Assessment of Coma in Neurotrauma Patients. 32nd Annual International Congress of Neurological Surgeons, Toronto, Canada, October, 1982.

Cantor, D.S., McAlaster, R., Meyer, W.I., Thatcher, R., and Ducker, T.B. Electrophysiological prognostic indices for recovery from head injury. American Association of Neurological Surgeons, Washington, D.C., 1983.

Thatcher, R.W., McAlaster, R. and Lester, M.L. Hair cadmium and lead and evoked potential measures in children. USDA Fourth Biennial Cooperative Research Symposium, Orlando, Fl., Oct. 4, 1982 (Abstract).

Lester, M.L., Thatcher, R.W. and McAlaster, R. Hair mineral status and cognitive functioning in rural children. USDA Fourth Biennial Cooperative Research Symposium, Orlando, Fl., Oct. 4, 1982 (Abstract).

Krause, P., Walker, R., Lester, M.L. and Thatcher, R.W. Relations between two dietary recall instruments and hair mineral and metal concentrations (abstract). Twelfth Annual MBS Symposium, Wash. D.C., April, 1983.

Purnell, K., Krause, P., Lester, M. and Thatcher, R.W. Interreliability and validity of 24hr recall vs long term food frequency surveys for nutritional assessment of children (abstract). Twelfth Annual MBS Symposium, Wash. D.C., April, 1983.

Fishbein, D. and Thatcher, R.W. An Appraisal of the Nutrition-Behavior Relationship (abstract). Proceedings of the 22nd Annual American Correctional Association, August 1983.

Thatcher, R.W., Lester, M.L., McAlaster, R. and Cantor, D.S. Electrophysiological Correlates of Intelligence in Children Proceedings of the International Neuropsychological Society, Lisbon, Portugal, June 14, 1983.

Krause, P.J., Lester, M.L. and Thatcher, R.W. Hair element norms for normal and gifted children (abstract). Presented to the Eighth Annual Mid-Atlantic MBS Conference, Petersburg Virginia, November, 1983.

Hunter, S.M., Lester, M.L. and Thatcher, R.W. Biological, nutritional and ecological factors affecting children's growth (abstract). Eighth Annual Mid-Atlantic MBS Conference, Petersburg Virginia, November, 1983.

Thatcher, R.W., Cantor, D.S., McAlaster, R., Geisler, F., Meyer, W. and M. Salcman. Comparisons between EEG, CT-Scan and Glasgow Coma Scale Predictors of Recovery of Function in Neurotrauma Patients. Annual Meeting of American Association for Neurological Surgeons, San Francisco, April, 1984.

Krause, P.J., Lester, M.L., and Thatcher, R.W. Hair element norms for children. NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Cassidy, T.S., Cantor, D.S., Lester, M.L., and Thatcher, R.W. Predictive ability of ABSEP's in recovery from traumatic head injury. NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Hunter S.M., Lester, M.L., and Thatcher, R.W. Predictive validity and factor structure of the Minnesota Perceptual Diagnostic Test (MPDT-R). NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Cantor, D.S. and Thatcher, R.W. Computerized EEG analyses of autistic children (Abstr). American Psychological Association Conference, Toronto, Canada, August, 1984.

Cantor, D.S. and Thatcher, R.W. Effects of low levels of lead and cadmium on EEG and children (Abstr). International Society of Developmental Psychobiology, Baltimore, MD, October, 1984

Cantor, D.S. and Thatcher, R.W. Relations between EEG and hair trace elements: zinc, calcium, cadmium, lead and aluminum. USDA Seventh Biennial Cooperative Research Symposium, 1985 (Abstract).

Cantor, D.S. and Thatcher, R.W. Effects of dietary choline supplementation on behavior, EEG and block constituents. USDA Seventh Biennial Cooperative Research Symposium, 1985 (Abstract).

Lester, M.L. and Thatcher, R.W. Protective effects of zinc and calcium against heavy metal impairment of cognitive development. USDA Seventh Biennial Cooperative Research Symposium, 1985 (Abstract).

Lester, M.L., Giudice, S. and Thatcher, R.W. The math education crisis in rural America, USDA Seventh Biennial Cooperative Research Symposium, 1985 (Abstract).

Cantor, D.S. and Thatcher, R.W. EEG correlates of lead and cadmium toxicity in children. Easter American Psychological Association Meetings, (Abstract), Wash. D.C., March, 1985

Thatcher, R.W. and Walker, R.A. EEG coherence and intelligence in children. 11th

International Congress of Electroencephalography and Clinical Neurophysiology, 1985.

Thatcher, R.W., Cantor, D.S., Krause, P., McAlaster, R. and Geisler, F. Practical prognostic indicators for neurotrauma patients. American Association of Neurological Surgeons, Chicago, Ill., 1985.

Wolff, T., Cantor, D.S. and Thatcher, R.W. Electrophysiological discrimination of different etiologies of deafness. Eastern Psychological Association, Wash. D.C., November, 1985.

Wolff, T., Cantor, D.S., Thatcher, R.W., Gardner, J. and Kammerer, B. Neurophysiological differences between deaf and hearing children. Journal of Clin. & Exp. Neuropsych., 8: 129, 1986.

Cantor, D.S. and Thatcher, R.W. Neurophysiological Correlates of Hair Trace Elements in Children. Archives of Clinical Neuropsychology, 1, (1) 40 - 41, 1986.

Thatcher, R.W. Relations between trace elements, food intake and brain functions. Symposium on Trace Elements and Reproduction. Society for Trace Elements and Health. University of Amsterdam, Amsterdam, September, 1986.

McAlaster, R., Thatcher, R., Krause, P.J. and Geisler, F. Diagnostic value of evoked potentials in evaluating conversion syndrome in neurotrauma patients. Proceedings of International Spinal Cord Monitoring Conf., Baltimore, Maryland, September, 1986.

McAlaster, R., Thatcher, R., Krause, P.J. and Geisler, F. Somatosensory evoked potential measures of nerve conduction in spinal cord patients. Proceedings of International Spinal Cord Monitoring Conf., Baltimore, Maryland, September, 1986.

Thatcher, R., Walker, R. and S. Giudice. Ontogenetic development of the brain as measured by EEG coherence in children. In: Proceedings of the South Eastern Research Conference on Child Development, Baltimore, Maryland, May, 1987.

Thatcher, R., Walker, R. and S. Giudice. Ontogenetic development of the brain as measured by Neurometrics. In: Symposium on Neurometric Quantitative EEG in Clinical Psychiatry, American Psychiatric Association, May, 1987 (accepted).

Thatcher, R.W. An Electrophysiological Window into the Ontogenetic Development of the Human Brain. In: Conference Proceedings of Window on the Brain: Technological Frontiers in Neuropsychology, Mount Sinai Medical Center, New York, New York, October, 1987

Thatcher, R.W. Maturation of the human frontal lobes: Physiological evidence for staging. International Neuropsychology Society Annual Meeting, Orlando, Florida, February 16, 1990.

Thatcher, R.W. EEG discriminant analyses of mild head injury. International Society for

Brain Electromagnetism, Toronto, Canada, July 27, 1991.

Thatcher, R.W. Multimodal registration of dipole histories using EEG coherence, PET and MRI. **Nat. Inst. of Health Research Symposium**, May, 1992.

Thatcher, R.W. Nonlinear dynamic model of human cerebral development. **Soc. for Research in Child Development**, New Orleans, March, 1993.

Thatcher, R.W. Advances in multimodal registration using EEG, MRI and PET. Workshop on: **Functional Magnetic Resonance Imaging**, NIH, 1993.

Thatcher, R.W., Toro, C., Hallett, M. Human neural network switching during voluntary finger movements. **International Society of Clinical Electrophysiology**, Vancouver, BC, 1993.

Toro, C., Thatcher, R.W. and Hallett, M. Dynamics of rolandic ECoG frequency changes to self-paced movements using the ERD technique. Program for the Annual Meeting and Courses of the American Electroencephalographic Society, New Orleans, LA, 1993: 113-114.

Thatcher, R.W. Dynamics of cortical connectivity: Cyclic reorganization during development. Symposium on Dynamic Modeling of Developmental Processes, **Jean Piaget Society** Chicago, June 2, 1994.

Thatcher, R.W. Cyclic cortical reorganization during postnatal human development. Symposium on Brain Maturation and Cognitive Development, **International Society for the Study of Behavioral Development, XIIIth Biennial Meeting**, Amsterdam, The Netherlands, June 28 - July 2, 1994.

Thatcher, R.W. Cyclic reorganization of prefrontal cortex during human postnatal development. **National Institutes of Health Conference on The Prefrontal Cortex: Evolution, Neurobiology and Behavioral Development**. September, 19-20, 1994.

Thatcher, R., Pflieger, M., Toro, C. and Hallett, M. Human Neural Network Dynamics Using Multimodal Registration of EEG, PET and MRI. **First International Conference on Functional Mapping of the Human Brain**, Paris, France, June 26-20, 1995.

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.

Green, J.B., Thatcher, R.W., Bialy, Y. and E. Sora. Movement related cortical potentials (MRCPPs) without movement. **47th Annual Meeting of the American Academy of Neurology**, San Francisco, CA, May 1994.

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.

Green, J.B., Bialy, Y., Sora, E., Ricamoto, A. and Thacher, R.W. The spatial distribution of the cortical motor potentials and generators change after spinal cord 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. 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. 4th 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. 4th International Conference on Functional Mapping of the Human Brain, Montreal, Quebec, June 7 – 12, 1998.

Thatcher, R. W., New data on quantitative EEG and Quantitative MRI findings in traumatic brain injury: Implications for neurotherapy. Society of Neuronal Regulation Annual Meeting, Austin, Texas, September 16-21, 1998.

Thatcher, R. W., Neural dynamics of traumatic brain injury. Sixth Annual Future Health Congress, Palm Springs, California, February 5 – 11, 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. 5th International Conference on Functional Mapping of the Human Brain, Dusseldorf, Germany, June 7 – 12, 1999.

Thatcher, R.W. Frontal Lobe Consequences of Traumatic Brain Injury. Florida Psychological Association, 1999 Summer Convention, Palm Beach, Florida, July 8-11, 1999.

Thatcher, R.W. Biophysical Linkage Between MRI, EEG and Cognition in Traumatic Brain Injury. Florida Psychological Association, 1999 Summer Convention, Palm Beach, Florida, July 8-11, 1999.

Thatcher, R.W., Gomez, J., Biver, C. and Salazar, A. Capacitive effects and the EEG. 10th 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. (2000) "An EEG Least Action Model of Biofeedback" 8th Annual ISNR conference, St. Paul, MN, September.

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. and Collura, T. Z Score Biofeedback and New Technology. International Society of Neuronal Regulation Annual Meeting, Atlanta, GA, September 16-21, 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.

Cannon, R.L., Thatcher, R.W., Baldwin, D.R. and Lubar, J.F. EEG LORETA and the Default Mode of the Brain (2009). Human Behavior-Computational Modeling and

Interoperability (HB-CMI) conference at Oak Ridge National Laboratory. Published in the HB-CMI 2009 Conference Proceedings (IEEE).

Cannon, R.L., Thatcher, R.W., Baldwin, D.R. and Lubar, J.F. EEG LORETA and the Default Mode of the Brain, 6th Annual World Congress for Brain Mapping and Image Guided Therapy. Harvard Medical School. Functional Integration of the electroencephalograph in the default mode of brain function. NeuroImage, 2009.

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.

Keeser, D., S. Karch, V. Kirsch, J.R. Davis, A. Länger, A. Chrobok, F. Loy, T. Surmeli, H. Engelbregt, B. Minton, R.W. Thatcher, O. Pogarell EEG and functional connectivity in the sensor and source space of patients with major depression. Human Brain Mapping conference, Munich, Germany 2013.

Thatcher, R.W., (2013). Phase Reset between Brodmann areas of the default mode network. Society for Neurofeedback and Research, Annual conference, Dallas, Texas, September 2013.

Thatcher, R.W. (2014). Key Note speaker “Mechanisms of neuron selection and synchronization and why Psychiatry cannot afford to be neurophobic”, ANT Neurometing, January 29-February 1, 2014, Beaune, Burgundy, France.

Thatcher, R.W. (2014). A LORETA brain-computer-interface for treatment of psychiatric disorders. ANT Neurometing, January 29-February 1, 2014, Beaune, Burgundy, France.

Thatcher, R.W., (2014). Functional connectivity, diffusion tensor imaging (DTI) and LORETA coherence, phase and co-modulation. Society for Neurofeedback and Research, Annual conference, San Diego, California, October 17, 2014.

Thatcher, R.W., (2014). On the relationship between EEG phase reset in the time domain and EEG power in the frequency domain. Society for Neurofeedback and Research, Annual conference, San Diego, California, October 18, 2014.

Thatcher, R.W. (2014). Neuropsychiatry and Quantitative Electroencephalography (qEEG) in the 21st Century: Why Psychiatry Cannot Afford to be Neurophobic. American Academy of Child and Adolescent Psychiatry, San Diego, CA.

Thatcher, R.W. (2014). Mechanisms of Neuron Selection and Synchronization and why Psychiatry Cannot Afford to be Neurophobic. Applied Neuroscience Society of Australasia (ANSA), Adelaide, Australia, August, 2014.

Thatcher, R.W. (2014). Neuropsychiatry and Quantitative Electroencephalography (qEEG) in the 21st Century: Why Psychiatry Cannot Afford to be Neurophobic. American Academy of Child and Adolescent Psychiatry, San Diego, CA.

Thatcher, R.W. (2016). **Neuropsychiatry and Quantitative Electroencephalography (qEEG) in the 21st Century: Why Psychiatry Cannot Afford to be Neurophobic.** Flemish Psychiatric Association, Ghent, Belgium, March 4, 2016.

Thatcher, R.W. (2016). **Linking Patient's Symptoms to Patient's Brain.** Applied Psychophysiology and Biofeedback (AAPB) workshop. Seattle, WA, March 9, 2016

Thatcher, R.W. (2017). **Advanced Concepts on EEG and QEEG Assessment and Human Performance.** International Symposium on Clinical Neuroscience. Orlando, FL, February 3-5, 2017.

Thatcher, R.W. (2017). **Intelligence and EEG Information Flow: Efficiency and Homeostatic Plasticity: qEEG Biomarkers of Peak Performance and Neurofeedback.** Applied Psychophysiology and Biofeedback (AAPB). Chicago, Ill. March 15 2017.

Thatcher, R.W. (2017). **Foundations and Development of qEEG and LORETA Neurofeedback: Linking Symptoms to qEEG Biomarkers and Neurofeedback.** American Psychological Association, Washington DC – August 5, 2017.

XVII. INVITED PRESENTATIONS AND SEMINARS

Krause, P., Walker, R., Lester, M.L. and Thatcher, R.W. **Relations between two dietary recall instruments and hair mineral and metal concentrations.** Poster presentation at the Twelfth Annual MBS Symposium, Wash. D.C., April, 1983 (abstract).

Purnell, K., Krause, P., Lester, M. and Thatcher, R.W. **Interreliability and validity of 24hr recall vs long term food frequency surveys for nutritional assessment of children** Poster presentation at the Twelfth Annual MBS Symposium, Wash. D.C., April, 1983 (abstract).

Hunter, S.M., Lester, M.L., and Thatcher, R.W. **Genetic, nutritional and ecological factors affecting children's growth.** Eighth Mid-Atlantic Regional MBRS Symposium, Virginia State University, Va., November, 1983 (Paper presentation and abstract).

Krause, P.J., Lester, M.L., and Thatcher, R.W. **Hair element norms for children of normal intelligence.** Eighth Mid-Atlantic Regional MBRS Symposium, Virginia State University, Va., November, 1983 (Paper presentation and abstract).

Thatcher, R.W., Cantor, D.S., McAlaster, R., Geisler, F., Meyer, W. and Salzman M. **Comparisons between EEG, CT-Scan and Glasgow Coma Scale Predictors of Recovery of Function in Neurotrauma Patients.** Proceedings of the American Association for Neurological Surgeons, San Francisco, April, 1984.

Krause, P.J., Lester, M.L., and Thatcher, R.W. **Hair element norms for children.** NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Cassidy, T.S., Cantor, D.S., Lester, M.L., and Thatcher, R.W. Predictive ability of ABSEP's in recovery from traumatic head injury. NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Hunter S.M., Lester, M.L., and Thatcher, R.W. Predictive validity and factor structure of the Minnesota Perceptual Diagnostic Test (MPDT-R). NIH/MBS National Research Symposium, Washington, D.C., April, 1984.

Fishbein, D., Thatcher, R.W., Lester, M.L. and Cantor D.S. Nutrition, trace elements and EEG in predicting behavior. Annual Convention of the American Society of Criminology, Denver, Colorado, November, 1983.

Thatcher, R.W. EEG Coherence: A Physiological Model, Presented at the Frontiers in Research Seminar Series, University of Maryland Eastern Shore, October 31, 1984.

Thatcher, R.W. Nutrition Environmental Toxins, and the use of Computerized EEG Analysis for Learning Disabled Children, Children, Keynote address of the ACLD Conference on Learning Disabilities, Phoenix, AZ, Oct. 12, 1984.

Thatcher, R.W. Predictive Diagnosis of Head Trauma Patients. Shock Trauma Grand Rounds, University of Maryland School of Medicine, Dec. 3, 1984.

Thatcher, R.W. Dietary Protective Agents Against Environmental Toxins in Children and Adolescents, Psychiatry Grand Rounds, University of Maryland School of Medicine, Dec. 4, 1984.

Thatcher, R.W. Mathematics and Brain Mechanism of Aesthetics. Invited Lecturer: Facultad de Psicologia, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Nov. 12, 1984.

Thatcher, R.W. The use of Factor Analysis to Describe Evoked Potentials in Children, Invited Lecturer: Facultad de Psicologia, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Nov. 13, 1984.

Thatcher, R.W. EEG Coherence and Intelligence in Children, Invited Lecturer: Facultad de Psicologia, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Nov. 14, 1984.

Thatcher, R.W. Nutrition, Environmental Toxins and Computerized EEG of Learning Disabled Children, Invited Lecturer: Facultad de Psicologia, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Nov. 15, 1984.

Thatcher, R.W. Predicting recovery of function in neurotrauma patients. International Neuropsychology Society Meeting, Denver, Colorado, February 1986.

Thatcher, R.W. Nutrition and Environmental Toxins: A Mini-Max Approach To Learning Disabilities. 39th Annual Association For Children With Learning Disabilities

Conference. New York, New York, March, 1986.

Thatcher, R.W. Relations between trace elements, food intake and brain functions. Symposium on Trace Elements and Reproduction. Society for Trace Elements and Health. University of Amsterdam, Amsterdam, September, 1986.

Thatcher, R.W. Diagnostic value of evoked potentials in evaluating conversion syndrome in neurotrauma patients. Presented at the International Spinal Cord Monitoring Conf., Baltimore, Maryland, September, 1986.

Thatcher, R.W. Somatosensory evoked potential measures of nerve conduction in spinal cord patients. Presented at the International Spinal Cord Monitoring Conf., Baltimore, Maryland, September, 1986.

Thatcher, R.W. Aesthetics, Mathematics and Brain Function, Colloquium speaker, Department of Mathematics, Salisbury State College, October, 1986.

Thatcher, R.W., Walker, R.A. and Guidice, S. Ontogenetic development of the brain as measured by EEG coherence in children. In: Proceedings of the South Eastern Research Conference on Child Development, Baltimore, Maryland, May, 1987.

Thatcher, R.W. An Electrophysiological Window into the Ontogenetic Development of the Human Brain. In: Conference Proceedings of Window on the Brain: Technological Frontiers in Neuropsychology, Mount Sinai Medical Center, New York, New York, October, 1987

Thatcher, R.W. EEG measures of cerebral development, Key Note Speaker, Institute for Training and Research in Auditory Conceptualization, Kansas City, November 21-22, 1988.

Thatcher, R.W. A phase-space model of human cerebral development. Harvard School of Graduate Education, Cambridge, Mass., February 22, 1989.

Thatcher, R.W. Non-linear dynamics of human cerebral development. First International Workshop on Machinery of the Mind, Havana, Cuba, February 28 - March 3, 1989.

Thatcher, R.W. Brain stimulation of comatose patients: Chaos and Non-linear dynamics of consciousness. First International Workshop on Machinery of the Mind, Havana, Cuba, February 28 - March 3, 1989.

Thatcher, R.W. Frontal lobe maturation: EEG coherence and phase measures. Symposium on the Role of Frontal Lobe Maturation in Cognitive and Social Development, Institute of Applied Human Development, Brock University, St. Catherines, Ontario, Canada, May 12, 1989.

Thatcher, R.W. Two compartmental model of human EEG coherence. Presentation at NIH Neurodynamics laboratory, February 21, 1990.

Thatcher, R.W. Maturation of the human frontal lobes: Physiological evidence for staging. International Neuropsychology Society Annual Meeting, Orlando, Florida, February 16, 1990.

Thatcher, R.W. Electrophysiological analyses of brain development. Presentation at the U.S.D.A. Human Nutrition Institute, San Francisco, Calif., June 14, 1990.

Thatcher, R.W. EEG discriminant analyses of mild head injury. International Society for Brain Electromagnetism, Toronto, Canada, July 27, 1991.

Thatcher, R.W. Mathematical analyses of EEG coherence. Human Motor Control Section, National Institutes of Health, September, 1991.

Thatcher, R.W. Cyclic cortical reorganization: Origins of human development. Presented at merge meeting, Human Motor Control Section, National Institutes of Health, March, 1992.

Thatcher, R.W. Multimodal registration of EEG, PET and MRI. Presented at the Interagency Committee for the Human Brain Project, National Institutes of Mental Health, June, 1992.

Thatcher, R.W. Multimodal registration of dipole histories using EEG coherence, PET and MRI. Presented at conference entitled Advances in Functional Neuroimaging, NIMH, NLM and NICHD sponsors, September, 1992.

Thatcher, R.W. Neural network switching during voluntary finger movement, Presented at NINDS Council meeting, December, 1992.

Thatcher, R.W. Advances in Multimodal registration of techniques. Presented at Neuroscan Workshop, McClain Va., January, 1993.

Thatcher, R.W. Neurophysiological foundations of the human EEG. Presented at workshop, Lexicor Medical Technologies, Atlanta, Ga., February, 1993.

Thatcher, R.W. Cyclic Cortical Reorganization during human development. Presentation at Center for Advanced Studies in Behavioral Sciences, Stanford, Calif, February, 1993.

Thatcher, R.W. Cyclic Cortical Morphogenesis: A nonlinear dynamical model of human development. Presented at Society for Research in Child Development, New Orleans, La., March, 1993.

Thatcher, R.W. Comprehensive predictions of outcome in head injured patients. Presented at workshop by Department of Defense Program on Rehabilitation of Head Injuries, Walter Reed Hospital, March, 1993.

Thatcher, R.W. , Toro, C., Pflieger, M.E. and Hallett, M. Multimodal registration of EEG,

PET and MRI: Analyses of neural network switching, Proceedings of Society of Magnetic Resonance in Medicine: Functional MRI of the Brain, Arlington, VA, June 17-19, 1993.

Thatcher, R.W. The Multimodality Measurement of Brain Activity: An Overview of Critical Conceptual and Technical issues Related to the Application of Functional MRI, PET, SPECT and EEG. The Frontiers in Neuroimaging Workshop, National Institutes of Child Development, Bethesda, MD, July 14-16, 1993.

Thatcher, R.W. Developmental Neuroimaging and Cyclic Cortical Development. Invited lecture at the Brain & Behavioral Group of Harvard University, Cambridge, Mass., March 15, 1994.

Thatcher, R.W. Tomographic EEG/MEG. An invited lecture at the 46th Annual Meeting of the American Academy of Neurology, Washington, D.C., May 2, 1994.

Thatcher, R.W. and Camacho, M. The Neurotrauma Digital Imaging Project, Invited presentation at the Center for Engineering and Medical Image Analysis (CEMIA), University of South Florida, Tampa, FL., May 16, 1994.

Thatcher, R.W. Human neural network switching using co-registration of EEG, PET and MRI. Presented at Workshop On Multimodal Registration, Neuroscan and the University of Chicago, Chicago, Ill, June 24-25, 1994.

Thatcher, R.W. Cyclic reorganization of prefrontal cortex during human postnatal development. Presented at workshop on The Prefrontal Cortex: Evolution, Neurobiology and Behavioral Development, National Institutes of Child Health and Development, Bethesda, Md, September 19-20, 1994.

Thatcher, R.W. Human neural network switching during motor movements. Presented at the University of South Florida College of Medicine, Department of Physiology and Biophysics Seminar, Oct. 10, 1994.

Thatcher, R.W. A nonlinear dynamical model of human cerebral development. Presented at Conference on Dynamical Systems in Development, The Pennsylvania State University, October 20-21, 1994.

Thatcher, R.W. Human Neural Network Dynamics Using Multimodal Registration of EEG, PET and MRI. Neurology Grand Rounds Presentation, University of South Florida College of Medicine, February 9, 1995.

Thatcher, R.W. Human Neural Network Dynamics Using Multimodal Registration of EEG, PET and MRI. Department of Rehabilitation Medicine Grand Rounds Presentation, Hines VA Medical Center and Chicago Loyola University, February 17, 1995.

Thatcher, R.W. Applications of EEG Normative Data Bases and Discriminant Functions in Biofeedback. Twenty-Sixth Annual Meeting of the Association for Applied

Psychophysiology and Biofeedback, Cincinnati, Ohio, March 12, 1995.

Thatcher, R.W. Human neural network switching using co-registration of EEG, PET and MRI. Presented at Workshop On Advancements in Electrophysiology, Neuro Scan, ACCSA, Mexico City, Mexico, March, 1995.

Thatcher, R.W. Cyclic reorganization of prefrontal cortex during human postnatal development. National Institutes of Health Conference on The Prefrontal Cortex: Evolution, Neurobiology and Behavioral Development. September, 19-20, 1994.

Thatcher, R., Pflieger, M., Toro, C. and Hallett, M. Human Neural Network Dynamics Using Multimodal Registration of EEG, PET and MRI. First International Conference on Functional Mapping of the Human Brain, Paris, France, June 26-20, 1995.

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. Human neural network switching using co-registration of EEG, PET and MRI. Presented at Workshop On Advancements in Electrophysiology, Neuro Scan, University of Tokyo, Tokyo, Japan, May 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. Quantitative MRI Analyses in Alzheimer's patients and traumatic brain injured patients. University of South Florida College of Medicine Neurology Grand Round Conference, April 29, 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. Zero Phase Locking, Volume Conduction and Measures of Neural Network Switching in Human Subjects. Presented at Workshop On Advancements in Electrophysiology, Neuro Scan, Munich, German, September 12, 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. Molecular Neurobiology of Child Development. University of South Florida College of Medicine Psychiatry Grand Round Conference, March 13, 1998.

Thatcher, R.W. Combined Computerized MRI and Computerized EEG Analyses of Traumatic Brain Injury. Key Note Speaker: Association for Applied Psychophysiology and Biofeedback, April 1 to 5, 1998, Orlando, Florida.

Thatcher, R.W., Biophysical Linkage Between MRI and EEG in Closed Head Injury. Presented at Workshop On Advancements in Multimodal Neuroimaging, Neuro Scan, Nat. Inst. of Health, Bethesda, Md, April 17 to 19, 1998.

Thatcher, R.W., Multimodal Registration: Dynamics of Human Neural Networks. Key Note Speaker: The Sixth Annual Meeting of the American Psychiatric Electrophysiology Association, May 30 to 31, 1998, Toronto, Canada.

Thatcher, R.W., Applications of Multimodal Integration of EEG, fMRI, PET, SPEC and MRI. Key Note Speaker: The Fourth International Conference on Functional Mapping of the Human Brain. June 7-12, 1998, Montreal, Quebec, Canada.

Thatcher, R.W. Neural Dynamics of Traumatic Brain Injury. Key Note Speaker, Sixth National Future Health Workshop. February 9, 1999, Palm Springs, California.

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. 5th International Conference on Functional Mapping of the Human Brain, Dusseldorf, Germany, June 7 – 12, 1999.

Thatcher, R.W. Frontal Lobe Consequences of Traumatic Brain Injury. Florida Psychological Association, 1999 Summer Convention, Palm Beach, Florida, July 8-11, 1999.

Thatcher, R.W. Biophysical Linkage Between MRI, EEG and Cognition in Traumatic Brain Injury. Florida Psychological Association, 1999 Summer Convention, Palm Beach, Florida, July 8-11, 1999.

Thatcher, R.W. Key Note Speaker - Clinical Applications of EEG Coherence, 10th World Congress of the International Society for Brain Electromagnetic Topography, Oct. 10-13th, 1999, Adelaide South Australia.

Thatcher, R.W. Key Note Speaker – A Cyclic Cortical Reorganization Theory of Brain Development, 4th Annual Meeting of the Australian Society for Neuronal Regulation, Cairns, Australia June 2000.

Thatcher, R.W. Neurophysiological Foundations of the Human EEG. Presentation: Association for Applied Psychophysiology and Biofeedback, July 26th, 2000, Denver Colorado.

Thatcher, R.W. Key Note Speaker – EEG Severity Index of Traumatic Brain Injury. Society for Neuronal Regulation, Minneapolis, MN, September 23, 2000.

Thatcher, R.W. – 3-Dimensional EEG Biofeedback using LORETA., Society for Neuronal Regulation, Minneapolis, MN, September 23, 2000.

Thatcher, R.W. (2000) "An EEG Least Action Model of Biofeedback" 8th Annual ISNR conference, St. Paul, MN, September.

Thatcher, R.W. EEG Severity Index of Traumatic Brain Injury, VA Medical Center Research Day, Bay Pines, FL, April 17, 2001.

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, VA Medical Center Research Seminar Series, Bay Pines, Florida, August 23, 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., J. and North, D. LORETA Analyses of Alzheimer's Disease: Hippocampal Gyrus analyses. EEG and Clinical Neuroscience Society, Irvine, Calif., August, 2004.

Thatcher, R.W., North, D., Biver, C. Cortical connectivity and low resolution electromagnetic tomography, VA Medical Center Research Seminar Series, Bay Pines, Florida, August 8, 2005.

Thatcher, R.W. Thoughts on Consciousness. AAPB, Annual Conference, Monterrey Calif, Feb. 12, 2006.

Thatcher, R.W. 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. 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. M., Neubrandner, J., Biver, C. J., Cutler, S., and DeFina, P. Autism and EEG Phase Reset: A Unified Theory of Deficient GABA Mediated Inhibition in Thalamo-Cortical Connections. International Society for Neurofeedback and Research, Annual Conference, Indianapolis, IN, September 2009.

Thatcher, R.W., Biver, C.J. and North, D.W. (2009). 19 channel Z score EEG Biofeedback. International Society for Neurofeedback and Research, Annual Conference, International Society for Neurofeedback and Research, Annual Conference, Indianapolis, IN, September 2009.

Thatcher, R.W. (2009). Cycles of brain maturation and human cognitive development. Institute of Developmental Physiology of the Russian Academy of Education, Russian Academy of Sciences, Moscow, Russia, June 21-28, 2009.

Cannon, R.L, Thatcher, R.W., Baldwin, D.R. and Lubar, J.F. (2009). EEG LORETA and the Default Mode of the Brain (2009). Human Behavior-Computational Modeling and Interoperability (HB-CMI) conference at Oak Ridge National Laboratory. Oak Ridge, Tennessee June 2009.

Cannon, R.L., Thatcher, R.W., Baldwin, D.R. and Lubar, J.F. (2011). EEG LORETA and the Default Mode of the Brain, 6th Annual World Congress for Brain Mapping and Image Guided Therapy. Harvard Medical School. Functional Integration of the electroencephalograph in the default mode of brain function.

Thatcher, R.W. (2013). Workshop on Functional Neuroimaging and the history of neuroscience. Psychiatric Institute, Ghent, Belgium, July, 2013.

Thatcher, R.W., (2013). Phase Reset between Brodmann areas of the default mode network. Society for Neurofeedback and Research, Annual conference, Dallas, Texas, September 2013.

Thatcher, R.W. (2014). Key Note speaker “Mechanisms of neuron selection and synchronization and why Psychiatry cannot afford to be Neurophobic”, ANT Neuromeeting, January 29-February 1, 2014, Beaune, Burgundy, France.

Thatcher, R.W. (2014). A LORETA brain-computer-interface for treatment of psychiatric disorders. ANT Neuromeeting, January 29-February 1, 2014, Beaune, Burgundy, France.

Thatcher, R.W. (2014). Clinical Applications of the EEG: A Practical and hands on approach: From Clinical History to EEG Acquisition to Editing to Analysis to LORETA to Discriminant Functions to Brain Behavior mapping to Clinic Report Writing and Neurotherapy Recommendations. Hosted by: Prof. Dr. Oliver Pogareli and Daniel Keeser, Ph.D., LMU University Munich, Clinic for Psychiatry and Psychotherapy, Munich, Germany July 18-20, 2014.

Thatcher, R.W. (2014). EEG Neurofeedback: New Technologies for Treatment of Psychiatric and Neurological Disorders. Key Note Speaker: Xuanwu Hospital, Beijing Geriatric Clinical & Research Center. Beijing, China, August, 2014.

Thatcher, R.W., (2014). Functional connectivity, diffusion tensor imaging (DTI) and LORETA coherence, phase and co-modulation. Society for Neurofeedback and Research, Annual conference, San Diego, California, October 17, 2014.

Thatcher, R.W., (2014). On the relationship between EEG phase reset in the time domain and EEG power in the frequency domain. Society for Neurofeedback and Research, Annual conference, San Diego, California, October 18, 2014.

Thatcher, R.W. (2014). Mechanisms of Neuron Selection and Synchronization and why Psychiatry Cannot Afford to be Neurophobic. Applied Neuroscience Society of Australasia (ANSA), Adelaide, Australia, August, 2014.

Thatcher, R.W. (2014). Neuropsychiatry and Quantitative Electroencephalography (qEEG) in the 21st Century: Why Psychiatry Cannot Afford to be Neurophobic. American Academy of Child and Adolescent Psychiatry, San Diego, CA.

Thatcher, R.W., (2015). On the relationship between EEG phase reset in the time domain and EEG power in the frequency domain. Society for Neurofeedback and Research, Annual Conference. Denver, Colorado October 12th-14th, 2016.

Thatcher, R.W., (2016). INTELLIGENCE AND INFORMATION FLOW: EFFICIENCY AND PLASTICITY. Society for Neurofeedback and Research, Annual Conference. Denver, Colorado October 12th-14th, 2016.

- Thatcher, R.W., (2016). On the relationship between EEG phase reset in the time domain and EEG power in the frequency domain. Society for Neurofeedback and Research, Annual Conference. Denver, Colorado October 12th-14th, 2015.**
- Thatcher, R.W. (2016). Neuropsychiatry and Quantitative Electroencephalography (qEEG) in the 21st Century: Why Psychiatry Cannot Afford to be Neurophobic. Flemish Psychiatric Association, Ghent, Belgium, March 4, 2016.**
- Thatcher, R.W. (2016). EEG Neuroimaging and Linking Patient's Symptoms to Brain Networks. Applied Psychophysiology and Biofeedback (AAPB) workshop. Seattle, WA, March 9, 2016.**
- Thatcher, R.W. (2017). Advanced Concepts on EEG and QEEG Assessment and Human Performance. International Symposium on Clinical Neuroscience. Orlando, FL, February 3-5, 2017.**
- Thatcher, R.W. (2017). INTELLIGENCE AND EEG MEASURES OF INFORMATION FLOW: EFFICIENCY AND HOMEOSTATIC NEUROPLASTICITY. Invited Speaker - Society for Neurofeedback and Research, Annual Conference. Foxwoods Resort & Casino, Masshantucket, CT. September 18-24, 2017.**
- Thatcher, R.W. (2018). Half-Day Workshop on Advanced QEEG and Neurofeedback Concepts: Cross-Frequency Coupling, NeuroNavigator and Cerebellar Neurofeedback. ISNR 26th Pre-Conference Workshops & Annual Conference Schedule. October 16, Renaissance Phoenix Glendale Hotel.**
- Thatcher, R.W. (2018). Linking Symptoms to Dysregulated Brain Networks. Society for Neurofeedback and Research, Annual Conference. ISNR 26th Pre-Conference Workshops & Annual Conference. October 16, Renaissance Phoenix Glendale Hotel.**
- Thatcher, R.W. (2017). Intelligence and EEG Information Flow: Efficiency and Homeostatic Plasticity. Applied Psychophysiology and Biofeedback (AAPB). Chicago, Ill. March 15, 2017.**
- Thatcher, R.W. (2018). Three Day Workshop on Linking Symptoms to Dysregulation of Networks in the Brain Applied Psychophysiology and Biofeedback (AAPB), April 10, 2018 Orlando, Fl.**
- Thatcher, R.W. (2019). Half-Day Workshop on New Advancements in Electrical Neuroimaging: Introduction and Basics. Association for Applied Psychophysiology & Biofeedback (AAPB), 50th Scientific Meeting, March 16th, 2019 in Denver, Colorado.**
- Thatcher, R.W. (2019). 90 Minute Presentation: New Advances in Electrical NeuroImaging: Linking Symptoms to the Patient's Brain. Workshop Applied Psychophysiology and Biofeedback (AAPB), March 14, 2019 Denver, Colorado.**
- Thatcher, R.W. (2019). The Feasibility and Validity of Cerebellar EEG Biofeedback. Society for Neurofeedback and Research. ISNR 27th Annual Conference. September 19, 2019 Denver Marriott Tech Center.**

Thatcher, R.W. (2020). Neuro-Navigation of Functional and Effective Connectivity in Epilepsy. Society for Brain Mapping and Therapeutics (SBMT) MEG/EEG Conference, Los Angeles, CA. March 20-22.

Thatcher, R.W. (2020). Real-Time Electrical Neuroimaging of the Cerebellum, Red Nucleus and Sub-Thalamus: Future Applications in Parkinsonism and Ataxia. Society for Brain Mapping and Therapeutics (SBMT) MEG/EEG Conference, Los Angeles, CA. March 20-22.

Thatcher, R.W. (2020). Electrical Neuroimaging and Diffusion Tensor Imaging of Functional and Effective Connectivity. Society for Brain Mapping and Therapeutics (SBMT) MEG/EEG Conference, Los Angeles, CA. March 20-22.

Thatcher, R.W. (2020). Real-Time swLORETA Cerebellar EEG Neurofeedback of Parkinson Patients. Society for Brain Mapping and Therapeutics (SBMT) MEG/EEG Conference, Los Angeles, CA. March 20-22.