

# CURRICULUM VITAE

November 2011

**NAME** Albert John (Jack) Johnstone, Ph.D.  
**EMAIL** jack@q-metrx.com  
**EDUCATION** Antioch College, B.A., Biology/Psychology  
Yellow Springs, Ohio  
University of California, Ph.D., Psychology  
San Francisco, CA.

## CURRENT EMPLOYMENT

**President and CEO**  
Q-Metrx, Inc. and Valley Sleep Center  
1612 West Olive Avenue  
Suite 301  
Burbank, CA 91506  
(818) 563-5409

**Consultant**  
Parexel/California Clinical Trials  
1509 Wilson Terrace  
Glendale, CA 91206  
(818) 254-1600

## RESEARCH INTERESTS

Brain electrical activity, cerebral specialization, neuromodulation, clinical neuropsychology, sleep disorders, cognitive development.

## ACADEMIC AFFILIATION

Associate Researcher, Department of Psychology, University of California, Los Angeles

## PRIOR RESEARCH AND PROFESSIONAL EXPERIENCE

**President and CEO**  
Neurodata, Inc. 1988-1999  
236 West Mountain Street  
Suite 101  
Pasadena, CA 91103  
Responsible for all aspects of medical business focused on software and systems development and quantitative EEG testing and reporting service.

**Director**

Neurolabs, 1985-1987  
Pasadena, California

Directed operation of clinical neurodiagnostic laboratory including quantitative EEG analysis.

**Administrative Director**

New Hope Neurodiagnostic Laboratory, 1984-1985

Supervision of general clinical neurodiagnostic laboratory (EEG, evoked potential, EMG).

**Director of Research**

New Hope Pain Center 1982-1985  
Pasadena, California

Benjamin L. Crue, M.D., Director  
Research on chronic pain.

**Neuropsychological Research**

Research Associate,  
Langley Porter Psychiatric Institute,  
University of California at San Francisco, 1975-1982.

David Galin, M.D., Supervisor

Participation in design, execution, and publication of neuropsychological experiments.  
Special emphasis on EEG and event related potentials in developmental dyslexia.

**Board of Directors****Q-Metrx, Inc.**

1999 - present.

**California Neuropsychology Services**

1982 - present.

**Neurodata, Inc.**

1988 - 1999

**Consulting Editor**

Neuroscience Letters  
Electroencephalography and Clinical Neurophysiology  
Psychophysiology  
Science  
Brain and Language  
Journal of Clinical Psychiatry

**Scientific Consulting**

Pfizer, Inc.  
235 East 42nd Street  
New York, New York 10017  
(212) 733-2323  
2007 – 2008

## **Expert Witness**

Consultant in Medical-Legal Cases (Defense and Plaintiff)  
1993 - present.

## **Scientific and Professional Society Affiliations**

American Psychological Association, 1983-1985, 2008-present

American Society of Electroneurodiagnostic Technologists, 2006-present.

American Academy of Sleep Medicine, 2002 -present

International Society for Neurofeedback and Research, 2002-present  
Chair, Committee on QEEG and Medical Legal Issues, 2002

## **Principal Investigator**

GORT Study: Great On REM Transitions SleepSmart Scoring Correlation  
Sponsor: Axon Labs, Inc., Newton, MA  
2007- present

Awake Pediatric EEG Recordings with Aspect BIS® Monitoring System  
Sponsor: Aspect Medical Systems, Inc., Norwood, MA  
2005-2007

A Comparison of Sleep Staging Using Traditional and Novel Sleep Montages  
Sponsor: Aspect Medical Systems, Inc., Norwood, MA  
2003-2004

## **Publications**

### **Book Chapter**

Johnstone, J. and Lunt, J. Use of Quantitative EEG to Predict Therapeutic Outcome in Neuropsychiatric Disorders. In: R. Coben & J.R. Evans (Eds). Neurofeedback and Neuromodulation Techniques and Applications. New York: Academic Press, to be published 2011. pp. 3-23.

### **Journal Articles**

1. Shambroom, J., Fabergas, S.E., Johnstone, J. Validation of an Automated Wireless System to Monitor Sleep in Health Adults. *Journal of Sleep Research*, 2011, Article first published online: 21 AUG 2011 DOI: 10.1111/j.1365-2869.2011.00944.x
2. Johnstone, J. A Three-Stage Neuropsychological Model of Neurofeedback: Historical Perspectives, *Biofeedback*, 2008, 36 (4), 142-147.

3. Johnstone, J., Gunkelman, J., and Lunt, J. Clinical Database Development: Characterization of EEG Phenotypes, Clinical Electroencephalography and Neuroscience, 2005 36 (2), 99-107.
4. Johnstone, J. and Gunkelman, J. Use of databases in QEEG evaluation. Journal of Neurotherapy, 2003, 7(3/4).
5. Johnstone, J. Bispectral Analysis of the EEG: A Brief Technical Note. Journal of Neurotherapy, 2002. 6(3).
6. Johnstone, J. Effects of Antidepressant medication of the EEG. Journal of Neurotherapy, 2002 5, 93-97.
7. Johnstone, J. Quantitative EEG and treatment response in neuropsychological disorders. Biofeedback Society of California Newsletter, Summer, 2000.
8. Lu, X. -C. M., Britton, P., Clapp, L., Johnstone, J. and Tortella, F.C. EEG analysis of focal ischemic injury in the rat. Abstract, Society for Neuroscience Annual Meeting, San Diego, CA, 1995.
9. Galin, D., Raz, J., Fein, G., Johnstone, J., Herron, J., and Yingling, C. EEG spectra in dyslexic and normal readers during oral and silent reading. Electroencephalography and Clinical Neurophysiology, 1992, 82, 87-101.
10. Johnstone, J. and Thatcher, R.W. Quantitative EEG Analysis and Rehabilitation Issues in Mild Traumatic Brain Injury. Journal of Insurance Medicine, 1991, 23, 228-232.
11. Johnstone, J. and Giannini, A.J. Applications of quantitative EEG/EP in psychiatry. Psychiatric Annals, 1990, 20, 405-412.
12. Galin, D., Herron, J., Johnstone, J., Fein, G. and Yingling, C.D., EEG alpha asymmetry in dyslexics during speaking and block design tasks. Brain and Language, 1988, 35, 241-253.
13. Galin, D., Fein, G., Yingling, C., Raz, J., and Johnstone, J. EEG spectra during oral and silent reading in dyslexics. Journal of Clinical and Experimental Neuropsychology, 1986, 9, 50.
14. Johnstone, J. Computed EEG topography as a diagnostic aid in neuropsychological assessment (Abstract). Archives of Clinical Neuropsychology, 1987.
15. Davenport, L., Yingling C.D., Fein, G., Galin, D., and Johnstone, J. Narrative speech deficits in dyslexics. Journal of Clinical and Experimental Neuropsychology, 1986, 8, 347-361.
16. Fein, G., Galin, D., Yingling, C.D., Johnstone, J., Davenport, L., and Herron, J. EEG spectra in dyslexic and control boys during resting conditions. Electroencephalography and Clinical Neurophysiology, 1986, 63, 87-97.
17. Fein, G., Galin, D., Yingling, C.D., Johnstone, J., and Nelson, M.S. EEG spectra in 9-13 year old boys are stable over 1 to 3 years. Electroencephalography and Clinical Neurophysiology, 1984, 58, 517-518.

18. Papanicolaou, A.C. and Johnstone, J. Probe evoked potentials: Theory, method, and applications. International Journal of Neuroscience, 1984, 24, 107-131.
19. Johnstone, J. Evoked potentials and pain: Clinical diagnostic and research applications. Current Concepts in Pain, 1984, 2, 3-11.
20. Johnstone, J., Galin, D., Fein, G., Yingling, C., Herron, J., and Marcus, M. Regional brain activity in dyslexia and control children during reading tasks: Visual probe event-related potentials. Brain and Language 1984, 21, 233-254.
21. Fein, G., Galin, D., Yingling, C.D., Johnstone, J., and Herron, J. EEG in dyslexia. IN: C. Susskind (Ed.) Interdisciplinary Studies, 1983, Report 83-1, College of Engineering, University of California, Berkeley, 86-93.
22. Johnstone, J., Agnew, D., Cogger, R., Crue, B., and Longworth, B. An improved evoked potential test for invasive monitoring of spinal cord function. Bulletin of Clinical Neurosciences, 1983, 49, 150-153.
23. Fein, G., Galin, D., Johnstone, J., Yingling, C.D., Marcus, M., and Kiersch, M.E. EEG power spectra in normal and dyslexic children. I. Reliability during passive conditions. Electroencephalography and Clinical Neurophysiology, 1983, 55, 399-405.
24. Galin, D., Ornstein, R., Herron, J., and Johnstone, J. Sex and handedness differences in EEG measures of hemispheric specialization. Brain and Language, 1982, 16, 19-55.
25. Ornstein, R., Johnstone, J., Herron, J., and Swencionis, C. Differential right hemisphere engagement in visuospatial tasks. Neuropsychologia, 1980, 18, 49-64.
26. Ornstein, R., Herron, J., Johnstone, J., and Swencionis, C. Differential right hemisphere involvement in two reading tasks. Psychophysiology, 1979 16, 398-401.
27. Galin, D., Johnstone, J., Nakell, L., and Herron, J. Development of the capacity for tactile information transfer between hemispheres in normal children. Science, 1979, 204, 1330-1332.
28. Herron, J., Galin, D., Johnstone, J., and Ornstein R. Development specialization, writing posture, and motor control of writing in left-handers. Science, 1979, 205, 1285-1289.
29. Johnstone, J., Galin, D., and Herron, J. Choice of handedness measures in studies of hemispheric specialization. International Journal of Neuroscience, 1979, 9, 71-80.
30. Galin, D., Johnstone, J., and Herron, J. Effects of task difficulty on EEG measures of cerebral engagement. Neuropsychologia, 1978, 16, 461-472.

### **Manuscripts submitted for Publication**

1. Nations, K.R. Dogterom, P., Bursi, R., Schipper, J. Greenwald, S. Zraket, D., Gertsik, L., Johnstone, J., Lee J.A., Pande, Y., Ruigt, G., Ereshefsky, L. Safety, tolerability, pharmacokinetics, and pharmacodynamics of Org 26576, an AMPA receptor positive allosteric modulator, in patients diagnosed with major depressive disorder: an exploratory, randomized, double-blind, placebo-controlled trial, submitted 2011.

## **Presentations at Scientific Meetings, Workshops, and Invited Addresses**

1. Workshop, "The Utility of Integrating QEEG/EEG with Behavioral Information in Selecting Neurofeedback Protocols", with Joy Lunt, R.N., International Society for Neurofeedback and Research, Denver, CO, September 29, 2010.
2. Stens Corporation, "Advanced Neurofeedback/EEG", A Two-Day Workshop on EEG fundamentals and applications in neurofeedback. Anaheim, CA., June 30-July 1, 2010
3. "EEG Summer Camp", a series of ten weekly one hour webinars on basics of EEG technology with extensive examples of clinical EEG recordings, June - September 2010
4. Biofeedback Society of California, Irvine, CA "Neurofeedback Protocol Development". Workshop with Joy Lunt, R.N. November 6, 2009.
5. Biofeedback Society of California, Irvine, CA "QEEG Subtypes". Panel Discussion with Michael Linden, Ph.D. and Joy Lunt, R.N. November 7, 2009.
6. Invited Address, International Society for Neurofeedback and Research, Indianapolis, IN. "Brain Electrical Activity in Children with Early Histories of Abuse, Trauma, and Neglect", September 5, 2009
7. Stens Corporation, "Advanced Neurofeedback/EEG", A Two-Day Workshop on EEG fundamentals and applications in neurofeedback. Anaheim, CA., June 29-30, 2009
8. Associated Professional Sleep Societies, "Evaluation of a Portable Monitor for Staging Sleep" Poster Presentation, John R. Shambroom, Jack Johnstone, Stephan E. Fabregas Annual Meeting, Seattle, WA, June 2009.
9. Associated Professional Sleep Societies, "Performance of a Wireless Dry Sensor System in Automatically Monitoring Sleep and Wakefulness." Poster Presentation, Stephan E. Fabregas, Jack Johnstone, John R. Shambroom Annual Meeting, Seattle, WA, June 2009.
10. EEG Spectrum International, "qEEG", A Two-Day Workshop on fundamentals and applications. Glendale, CA., December 11-12, 2008..
11. Invited Address, Neuroscience and Imaging Research Program, Queens Medical Center, Honolulu, HI, "Applications of Quantitative EEG Technology in Guiding Therapeutic Intervention in Neurobehavioral Disorders", October 10, 2008.
12. European Sleep Research Society, "Assessment of a Wireless Dry Headband Technology for Automatic Sleep Scoring", Kenneth P. Wright, Jack Johnstone, Stephan E. Fabregas, John R. Shambroom, Annual Meeting, Glasgow, Scotland, September 2008.
13. Invited Address, International Society for Neurofeedback and Research, San Antonio, TX. "EEG Bispectral Analysis: Applications in Monitoring Conscious Awareness, Medication Management and Tracking of Effectiveness of Treatment in Dementia", August 31, 2008
14. Workshop, "Show Me the Data: A Review of EEG waveforms", International Society for Neurofeedback and Research, San Antonio, TX., August 30, 2008.

15. Associated Professional Sleep Societies, "Evaluation of a Portable Dry Sensor Based Automatic Sleep Monitoring System" Poster Presentation. Kenneth P. Wright, Jack Johnstone, Stephan E. Fabregas, John R. Shambroom, Annual Meeting, Baltimore, MD, June 2008.
16. EEG Spectrum International, "qEEG", A Two-Day Workshop on fundamentals and applications. Glendale, CA., December 15-16, 2007.
17. EEG Spectrum International, "qEEG", A Two-Day Workshop on fundamentals and applications. Alexandria, VA., November 1-2, 2007.
18. Workshop, "Combining Behavioral, Neuropsychological, and qEEG Assessment in Designing Neurofeedback Intervention and Documenting Treatment Outcome". International Society for Neurofeedback and Research, San Diego, CA., September 5, 2007..
19. Oral Presentation "NF Sum Training for Patterns with Shifting Laterality" with Joy Lunt, R.N., International Society for Neurofeedback and Research, San Diego, CA., September 6, 2007..
20. Teleseminar, Association for Applied Psychophysiology and Biofeedback, "QEEG and Medication", Colorado Springs, CO., July 20, 2007
21. Invited Address, EEG Spectrum International, Clinical Interchange Conference, Glendale, CA. "qEEG", with Joy Lunt, RN, BCIA, April 28, 2007.
22. Invited Address, EEG Spectrum International, Clinical Interchange Conference, Glendale, CA. "Coherence- How To" with Roger DeBeus, Ph.D., April 28, 2007.
23. NeuroDevelopment Center, Providence RI. "Quantitative EEG and Neurofeedback: Assessment, Intervention, Outcome" March 17-18, 2007, Waltham, MA
24. Biofeedback Society of California, San Francisco, CA "Basic Functional Neuroimaging". Moderator and Presenter. Panel Discussion with Joseph Wu, M.D., and Paul Hamilton, Ph.D. November 5, 2006.
25. Keynote Address, Biofeedback Society of California, San Francisco, CA. "qEEG and Psychoactive Medication", November 4, 2006.
26. EEG Spectrum International, Clinical Interchange Conference, Canoga Park, CA. "qEEG Case Review", May 21, 2006.
27. Invited Address, International Society for Neuronal Regulation, Denver, CO. "qEEG Patterns: Subgroups, Profiles, Phenotypes", September 11, 2005.
28. EEG Spectrum International, Clinical Interchange Conference, Canoga Park, CA. "ERPs: Timing is Everything", May 13, 2005.
29. EEG Spectrum International, Clinical Interchange Conference, Canoga Park, CA. "Quantitative EEG and Neurofeedback", with Joy Lunt, RN, BCIA, May 12, 2005.
30. EEG Recording and Artifacting, Q-Metrx, Inc, and NovaTech EEG, Burbank, CA with Leslie Sherlin, April 30-May 1, 2005.
31. University of California, Los Angeles, CA. Symposium sponsored by Brain Research Institute, Dept. of Neurology, Psychiatry, Psychology on Quantitative EEG, Neurofeedback, and Cognition, Neuropsychiatric Institute, UCLA. , Organizer and Presenter, "QEEG Profile as Phenotype", April 29, 2005.

32. Invited Address, International Society for Neuronal Regulation, Ft Lauderdale, FL. "Integrative Clinical Neuroscience", August 29, 2004.
33. Invited Address, Association for Applied Psychophysiology and Biofeedback, "QEEG, Neurofeedback, and Forensics", Colorado Springs, CO., April 2, 2004
34. Biofeedback Society of California, "Basics of EEG and QEEG", University of California, Irvine, CA., June 7, 2003.
35. University of California, Los Angeles, CA., Dept. of Psychology Colloquium, Dr. Eran Zaidel, "Basics of EEG and QEEG", Los Angeles, CA. May 27, 2003.
36. "Applied QEEG", A One Day Course, Presented October 22, 2002, Woodland Hills, CA.,
37. Sponsored by EEG Spectrum International, Encino, CA.
38. Society for Neuronal Regulation, Scottsdale, AZ. "Update on Bispectral analysis of EEG", September 15, 2002.
39. Society for Neuronal Regulation, Scottsdale, AZ. "QEEG Standards and Admissibility in Court". Moderator. Panel Discussion: September 13, 2002.
40. "EEG, QEEG Brainmapping and Neurofeedback: Basics, Case Reviews, New Technologies", A Two Day Course Presented with Joy Lunt, R.N., July 27-28, 2002, Chicago, IL., Q-Metrx, Inc.
41. 8th International Conference on Alzheimer's Disease and Related Disorders. "The EEG Bispectral Index (BIS) Correlates with Severity of Dementia in Patients with Alzheimer's Disease or Vascular Dementia". Leuchter A, Cook I, Greenwald S, Morgan M, Hanson K, Siegman B, Johnstone J., July 20-25, 2002, Stockholm, Sweden.
42. 8th International Conference on Alzheimer's Disease and Related Disorders. "EEG Bispectrum Shows Characteristic Changes with Increasing Impairment in Alzheimer's Disease or Vascular Dementia", Cook I, Leuchter A, Greenwald S, Morgan M, Hanson K, Siegman B, Johnstone, J., July 20-25, 2002, Stockholm, Sweden.
43. "Waveforms, Artifacts, EEG Recordings & Case Reviews", A Two Day Course Presented with Jay Gunkelman, April 13-14, 2002, Encino, CA., Q-Metrx, Inc.
44. Claude Bernard Club, Keynote Address, "Use of QEEG to Predict Response to Medications: A Brief Review", Las Vegas, NV. March 23, 2002
45. "EEG and Quantitative EEG", A Two Day Course, Presented January 13-14, 2002, Atlanta, GA., Sponsored by EEG Spectrum International, Encino, CA.
46. Biofeedback Society of California, 27<sup>th</sup> Annual Conference, Invited Address, "Utility of QEEG", San Diego, CA., November 3, 2001.
47. Society for Neuronal Regulation, Monterey, CA. "Bispectral analysis of EEG", October 28, 2001.
48. Society for Neuronal Regulation, Monterey, CA. "Use of QEEG is Predicting Response to Medication", October 27, 2001.

49. EEG Spectrum Clinical Interchange Conference, Oxnard, CA. Panel Discussion on QEEG, October 21, 2001.
50. University of Houston, Dept. of Philosophy Seminar, "Prediction of Medication Response Using QEEG", Houston, TX., April 26, 2000.
51. QEEG and Neurotherapy Symposium, The Spectrum, Houston, TX, "Introduction to EEG and QEEG", Sponsored by the ReedLarkey Group, April 25, 2000.
52. Biofeedback Society of California, 25<sup>th</sup> Annual Conference, Invited Address, "Prediction of Medication Response Using QEEG", Valencia, CA., November 13, 1999.
53. EEG Spectrum Clinical Interchange Conference, Lake Arrowhead, CA. - Invited Address, "QEEG Reporting" October 31, 1999.
54. University of California at Los Angeles, Neurobehavior Seminar, Los Angeles, CA., "New Developments in Quantitative EEG Technology" February 22, 1999.
55. EEG, Quantitative EEG, and Evoked Potentials: Background, Technology, Applications, A Two Day Course, Presented January 16-17, 1999, Los Angeles, CA., Sponsored by EEG Spectrum, Encino, CA.
56. EEG Spectrum Clinical Interchange Conference, Highland Springs, CA. - Invited Address, "Raw EEG, What does it mean? When to Refer?" October 24, 1998.
57. Huntington Medical Research Institute, Pasadena, Ca. - Invited Address, "Current Developments in EEG". September 14, 1995.
58. American Society for Neural Monitoring, Annual Meeting, San Francisco, CA., "Quantitative EEG and Topographic Mapping". May 18, 1995
59. University of California, Los Angeles, CA., Dept. of Psychology Colloquium, Dr. Eran Zaidel, "EEG Coherence and Neural Connectivity", Los Angeles, CA. April 26, 1995.
60. Los Angeles Society for Neurological Sciences Meeting - Invited Address, "Current Status of Quantitative EEG", Los Angeles, CA., April 19, 1995.
61. University of North Texas, "Research with Quantitative EEG". Dept. of Psychology Colloquium, Dr. Jeffrey Clarke, Denton, TX, November, 1994.
62. Southern California Neuropsychiatric Institute, Symposium on Progress in Understanding Post Concussion Syndrome. "Neurophysiological Concomitants in Post-Concussion: Computerized EEG". Dallas, TX, November, 1991.
63. American Congress of Rehabilitation Medicine, 68th Annual Session, Washington, D.C. "Clinical Experience with Quantitative EEG in Mild Head Injury." (with Robert W. Thatcher, Ph.D.) October, 1991.
64. The Kansas Institute, Overland Park, Kansas. "Quantitative EEG in Mild Traumatic Brain Injury" (with J. Allen Reilly, M.D.) October, 1991.
65. University of North Texas, Denton, TX. "Mild Traumatic Brain Injury, Learning, and Quantitative EEG". Center for Research on Learning and Cognition September, 1991.
66. University of California, San Francisco, Dept. of Psychiatry Colloquium, "Applications of Quantitative EEG/EP in Clinical Psychiatry". September, 1989.

67. Biofeedback Society of California, Inc., "Quantitative EEG and Topographic Mapping" January, 1989.
68. Medical Staff Lecture, "Quantitative EEG Analysis and Applications in Clinical Practice", Methodist Hospital of Southern California, September, 1988.
69. University of California at Los Angeles, Neurobehavior Seminar, Los Angeles, C.A., "Computed EEG Topography: Method and Clinical Application" November, 1986.
70. National Academy of Neuropsychology, 6th Annual Meeting, Las Vegas, N.V., "Computed EEG Topography as a Diagnostic Aid in Neuropsychological Assessment", October, 1986.
71. University of Southern California, Department of Psychology, "New Developments in Clinical EEG", May, 1985.
72. Arthritis and Back Pain Center, Santa Monica, C.A., "Clinical Evoked Potentials", April, 1985.
73. University of Southern California, School of Medicine, Department of Neurology, Los Angeles, C.A., "Computerized Electrophysiological Brain Mapping", January, 1985.
74. International Neuropsychological Society, 12th Annual Meeting, Houston, TX., "The Probe Evoked Potential Paradigm: Rationale and Applications in Neuropsychology", February, 1984.
75. Rehabilitation Nurses Society, Los Angeles, CA., "The State of the Art in Neurodiagnostics", September, 1983.
76. International Neuropsychological Society, 11th Annual Meeting, Mexico City, Mexico, "Preparation to Respond Contributes to EEG Alpha Asymmetry", February, 1983
77. Schizophrenia Research Group, V.A. Medical Center, Palo Alto, Ca., "The Neuropsychology of Left Handedness", January, 1982.
78. Learning Disabilities Colloquium, De Anza College, "The UCSF Dyslexia Project", November, 1979.
79. Brain-Behavior Research Group, Sonoma State Hospital, Eldridge, Ca., "Hemisphere Specialization, Past and Future Research", April, 1979.
80. International Neuropsychology Society, 7th annual Meeting, New York, New York, "Differential Right Hemisphere Involvement in Two Reading tasks", February, 1979.
81. Association for Children with Learning Disabilities, International Meeting, San Francisco, Ca., "Hemisphere Specialization", February, 1979.
82. University of California Extensive, Davis, CA., "Handedness, Brain organization, and Cognitive Style", July 1978.
83. Mount Zion Hospital and Medical Center, San Francisco, CA. Department of Psychiatry Colloquium, "Development and Cerebral Specialization", April 1978.