

Curriculum Vita

Contact information

Name

Professor Semyon M. Slobounov

Birthdate and Birthplace

10 March 1952
Baku, Azerbaidjan (USA Citizen)

Address:

624 Rosslyn Road, Boalsburg, PA 16827
e-mail: sms18@psu.edu
slobounovsm@mail.nih.gov
<http://www.personal.psu.edu/sms18>
www.concussion.psu.edu

Educational Background

Ph.D. - University of Illinois at Urbana-Champaign, Department of Kinesiology, March, 1994, Thesis: *Dynamic strategies of human postural control*. Advisor: Prof. **Karl. M. Newell**.

Ph.D. - Clinical Psychology, University of Leningrad, USSR, Department of Psychology, September 1978. Thesis: *Cognitive, electrophysiological and executive components interaction in acquisition of movement skill*. Advisors: Prof(s). **Alexander Luria & Olga A. Chernikova**

Bachelor Science (Diploma with honor) - Azerbaidjan State Institute , Department of Sport & Exercise Science, Medicine & Athletic Training, 1969-1973.

Additional Training/Education

Certified functional MRI researcher – NIH Certification Program, February 2003, 2010.

Certified MRI researcher – Brain Imaging Center, Penn State University, March 2009.

Certified “Securing Remote Computers” – NIH Certificate, January 2010.

Certified Diving Coach - U.S. Diving National Safety Certification Program. May 1992-current.

Graduated from: Intensive English Institute of the Division of English as an International Language at the University of Illinois. May 1991.

Certified Clinical Sport Psychologist – Diploma, Central State Institute of Physical Culture, Department of Sport Psychology, Moscow, May 1986.

Certified Sport Masseur – Diploma, Central State Institute of Physical Culture, Department of Sport Medicine, Moscow, October 1985.

Senior Scientist - Diploma, *Theory and practice of physical education and sport training*, Ministry of Higher Education of the USSR, Moscow, May, 1983.

Certified Karate Instructor – Diploma, International Association of Karate-do-Shitoru, Japan, 1978.

Current Positions

Professor of Kinesiology with College of Health and Human Development, Penn State University

Professor of Neurosurgery with Hershey College of Medicine, Penn State University

Professor of Orthopaedics & Medical Rehabilitation with Hershey Medical College

Director of Penn State Center for Sports Concussion Research and Service

Adjunct Investigator, NIH, National Institute Neurological Disorders and Stroke (NINDS)

Professional Experience

Professor of Kinesiology, July 1, 2007. Responsibilities include teaching undergraduate and graduate courses in the areas of neural bases of motor behavior, psychology of movement, psychology of injury, and psychophysiology. Additional responsibilities include conducting basic science and clinical research.

Professor of Neurosurgery, June 1, 2012. Responsibilities include the development of comprehensive clinical research protocol for assessment of traumatic brain injuries. Additional responsibilities include the development of training curriculum for students pursuing their goals in concussion management.

Adjunct Investigator. Human Motor Control section, NIH, NINDS. Appointment with Dr. M. Hallett. Intramural program of research (funded by NIH) investigating the neural aspects of freezing gait and spatial memory in Parkinson patients using brain imaging (fMRI/MRS,DTI) technologies, January 2010- 2011. Sabbatical leave from PSU.

Adjunct Investigator. Department of Medical Rehabilitation, NIH. Appointment with Dr. D Damiano. Intramural program of research (funded by NIH) investigating neural bases of cognitive and balance/gait deficits in warfighters suffering from blast-related traumatic brain injuries. Primary responsibility includes conducting brain imaging (fMRI/MRS/TDI) portion of this research. January 2010- 2011. Sabbatical leave from PSU.

Associate Professor. July 2000 – July 2007. Primary responsibilities include teaching undergraduate and graduate courses in the areas of neural bases of motor behavior,

psychology of movement, psychology of injury, and psychophysiology. Additional responsibilities include conducting research in the areas of neural bases of cognition and human movements, rehabilitation medicine and sport psychology.

Adjunct Investigator. Human Motor Control section, NIH, NINDS. Appointment with Dr. M. Hallett. Intramural program of research (funded by NIH) investigating the neural aspects of postural control in aging using EEG/fMRI technologies, January 2003-January 2004, Sabbatical leave from PSU.

Assistant Professor. Department of Kinesiology, Penn State University, May 1994-June 2000.

Research Associate. Department of Exercise and Sport Science, Penn State University, August 1993 – May 1994. Appointment with Dr. K. M. Newell. Program of research (funded by NIH) investigating the movement disorders in the developmentally disabled population. Primary responsibilities involved kinematic and kinetic analysis of movements. An additional responsibility involved teaching: Kines 420 “Socio-psychological dimension of physical activity”.

Research Assistant. Department of Kinesiology. University of Illinois, June 1991-August 1993. Appointment with Dr. K. M. Newell. Program of research (funded by NIH) investigating the movement disorders in the developmentally disabled population. Primary responsibilities involved kinematic analysis of movements.

Teaching Assistant. Department of Kinesiology. University of Illinois. August 1991-May 1993. Responsibilities involved physical activity classes (PEAP program) and Kines 356 “Electromyographic Kinesiology”.

Director and Head of Sport Psychology Department of Moscow (USSR) Scientific Research Institute of Physical Culture. August 1986-December 1990. Primary responsibilities included developing and providing psychological service and rehabilitation program for the all USSR National Olympic Teams. Additional responsibilities -providing expertise and development of National Health Psychology program for Soviet citizenry. Particularly, developing mental health management programs for people involved in different professional activities.

The USSR National **Head Olympic Diving Coach.** September 1982-August 1986. Primary responsibilities included: developing and supervising the general strategy of the USSR Olympic Divers preparation for the World Championship and Olympic Games; divers selection for the USSR National Diving Team; dry-land preparation, conditioning, testing and training of the USSR Olympic Divers.

Physical Therapist & Clinical Sport Psychologist for the USSR National Olympic Diving Team. September 1980-August 1982. Responsibilities involved physical therapy, massage and psychotherapy.

Senior scientist at Biomechanics Laboratory, Scientific Research Institute of Physical Culture, Moscow. Sponsored by the USSR Olympic Committee. September 1977-August 1986. Responsibilities involved behavioral and psychophysiological data acquisition and analysis.

Honors/Special Distinctions

Fellow American Academy of Kinesiology, elected 2008.

2004 National Conference “Concussion in Athletics: Ongoing controversies”- **Chair**

2012 International Conference “ Concussion in sports: From Brain To Behavior” - **Chair**

Member of NIH/DOD joint task force on blast-related TBI, elected 2009

Member of NIDRR, Traumatic Brain Injury Model Systems Centers study, Department of Education, study section, elected 2012

NIH MESH Study Section, 2007

NIH Musculoskeletal Rehabilitation Science (MRS) Study Section, 2004-2005.

NIH Geriatric & Rehabilitation Medicine Study Section, 2004.

Senior Fellowship NIH, National Institute of Neurological Disorders and Stroke, 2003-2004.

Managing Council Officer for International Society of Sport Psychology (ISSP). Elected by representatives of 150 Nations around the world, August 1989 – July 1993.

Personal Coach of 4 times **Olympic Champion** Dmitry Sautin, 1996-2004.

Personal Coach of **Olympic Champion** Vera Illiva, Springboard Diving, Australia, 2000.

Personal Coach of **Penn State Champion**, Anton Slobounov, Springboard Diving, 2002.

The USSR Sport Psychology Federation. Vice-President. May 1987 - December 1990.

Olympic Solidarity Diving Coach – Honorary Certificate, International Olympic Committee, 1983.

Bronze Medal Honorary Award from the USSR Ministry of Education, 1983.

Honor Graduate from Azerbaidjan State Institute, 1973.

Professional Affiliations

Fellow of American Academy of Kinesiology, 2008- present.

American Academy of Neurology, 2012

American Society of Clinical Neurophysiology, 2012

International Society for Psychophysiological Research., 1995 - present.

North American Society for Sport Psychology and Physical Activity (NASPSPA), 1994 - present.

International Society of Sport Psychology (ISSP) 1975 - present

Scientific Director of the USSR Diving Federation. September 1983 -August 1986.

External Grants and Contracts

Active

Slobounov, S. (P.I), Sebastianelli, W. (Co-I). Differential Recovery from MTBI in pediatric versus collegiate athletes. NFL Medical Charity, 2012-2014 (\$100,000.00)

Yeates, K. (P.I), **Slobounov, S. (Co-I).** Predicting outcomes of Pediatric Mild Traumatic Brain Injury". NIH, NINDS, \$2,000,000.00

Slobounov, S (P.I). Neuroimaging pilot research of pediatric and adults concussive blows. Matching funds (Hershey Neuroscience Institute, Social Science Research Institute, PSU), 2012-2014 (\$75,000.00)

Pending

Slobounov, S. (PI). 2015-2017. NIH, R21. " Differential response to exercise versus cognitive challenges: Implication for return-to-acadeics after concussion". \$281,000.00

Slobounov, S. (P.I); 2014-2017., NIDRR, Advanced Virtual Reality Technologies for a Cost Effective Assessment of Concussion without Loss of Diagnostic Accuracy" \$600,000.00

Slobounov, S., (CO-P.I), 2013- 2015, R21. NIH, NINDS: " Differential effect of sub-concussive blows in subjects with and without prior history of MTBI", \$ 400,000,00, second submission with high priroty score.

Slobounov S. (Co-P.I), 2013-2014, PSU Innovation Grant: "Measuring the Multifunctional Properties of Axonal Fiber Bundles in the Brain". \$100,000.00

Slobounov, S. (Co-P.I). 2013-2014, NFL_GE_UA: "Inconrporating brain imaging and blood biomarkers for classification concussed athletes", \$350,000.00

Slobounov, S. (Co-P.I). 2014-2015. NFL/GE_UA: "Connectome neurotrauma mechanics: a Framework for Monitoring TBI", \$300,000.00

Completed

Slobounov, S., (P.I.), Hallett, M., (NIH), Newell, K., Sebastianelli, W., Tutwiler, R., Arnold, S., Salvaterra, G., Arnett, P. Identification of athletes at risk for traumatic brain injuries. 1R01NS056227-01A2, NIH, NINDS, 2008-2013 (\$2,709,357).

Slobounov, S. Administrative Supplementary NIH grant (\$ 500,000): 1R01NS056227-01A2

Hallett, M. (P.I) Slobounov, S. (Co-I), Ferucci, L., & Stanhope, S. Cortical control of postural stability in the elderly. NIH, NINDS Intramural grant, Protocol # 03-N-165; 2003-2005.

Hallett, M.(P.I), Slobounov, S., (Co-I), Ferrucci, L., Wu, T. Perception of postural instability: event-related fMRI study. NIH, NINDS, NIA, HMS Intramural grant, Protocol # 03-N-183; 2003-2005.

Richards, D., Slobounov, S. (Co-I.). Empirically validated return-to-play guidelines for sport-related concussion. The Physicians Services Incorporated Foundation, Toronto, Ontario, 2004-2006 (\$155,000). Mr. James Thompson, Ph.D candidate is fully supported by this funding.

Slobounov, S. (P.I.). Computer graphics as an educational tool for understanding the fundamental diving skills. U.S. Diving Foundation, 1998, (\$15,000).

Slobounov, S. (P.I.). Computer graphics for coaches' education program. U.S. Diving Foundation, 1997, (\$15,000).

Slobounov, S. (P.I.). Computer graphics visualization for diving performance improvement. U.S. Diving Foundation, 1996, (\$14,850).

Slobounov, S. (P.I.). Computer graphics for balance improvement in diving. U.S. Diving Foundation, 1995, (\$15,000).

Slobounov, S. (P.I.). Kinematometer - a computerized device for psychomotor assessments. Shufried Computer Software Inc., Austria, 1989-1990, (\$20,000). [Contract for development of hardware/software and normalized data set].

Slobounov, S. (P.I.). Computer-based analysis of athletes' sensori-motor functions. Shufried Computer Software, Inc., Austria, 1980-1990, (\$275,000). [Contract included a set of PCs, hardware/software, salary support and travel expenses provided by Shufried Computer Software, Inc.]

Internal Grants

Slobounov, S. Application of Virtual Reality and Advanced MRI Tools in a Clinical Assessment of Concussion. SSRI, Penn State Neuroscience Institute (2012-2013), \$ 68,000.00

Slobounov, S. Virtual Reality in a Clinical Setting. Penn State VOP, College of Health and Human Development. \$80,000.00

Completed

Slobounov, S. (PI). "Virtual Reality Applications for Assessment of Brain Injuries" DOD, Air Force Medical Chatity, (2009-2010), \$100, 000.00.

Slobounov, S.(P.I.), Sebastianelli, W., Newell, K., Arnold, S., Arnett, P., Tutwiler, R., Danov, R. Pediatric traumatic brain injury. SSRI, Penn State, 2006-2008, (\$22,820).

Slobounov, S. (P.I.). Baseline balance assessment of PSU student-athletes. Penn State Athletic Medicine Research Funds, 2005-2006, (\$12,000).

Slobounov, S., (P.I.), Sebastianelli, W., Otto, G., Ray, W., Newell, K., Hallett, M. Virtual Reality Development for Basic Science and Clinical Research. SSRI, PSU, 2006-2007, (\$25,000). [Co-funded by the Department of Kinesiology (\$25,000), Penn State Athletic Medicine Research Funds (\$7,000)]. Total funds \$75,650,00

Sebastianelli, W., Slobounov, S. (Co- P.I.), Newell, K., Ray, W, Tutwiler, R., Slobounov, E. Advanced technology for assessment of concussion in athletes. Dean's Feasibility Grant, Hershey Medical Center, 2002, (\$37,250). [Co-funded by CHHD (\$7,100), the Department of Kinesiology (\$2,600), and Mr. Wolf's endowment (\$250,000)]. Responsible for grant proposal preparation and implementation.

Slobounov, S. (P.I.), Sebastianelli, W. Alterations of brain functions associated with perceptual-motor tasks in athletes suffering from concussion: EEG study. Hershey Medical Center, 2003-2004, (\$14,974).

Gilmore, R., Slobounov, S. (Co-P.I.). Perception-action coupling in infancy. CYFC, 2001-2002, (\$12,000). [Co-sponsored by Academic Services and Emerging Technologies donating VR ImmersaDesk (\$120,000)]. Responsible for experimental design, data collection and data analysis.

Sebastianelli, W., Tutwiler, R., Slobounov, S. (Co-I.). Poroelastic response of virtual organ assemblages: theory, implementation and performance clarification. Dean's Feasibility Grant, Hershey Medical Center, 2000, (\$ 25,000). [Co-funded by the Department of Kinesiology (\$10,000)]. Responsible for preparation and implementation of this grant.

Sebastianelli, W., Tutwiler, R, Slobounova, E, Slobounov, S. (Co-I.) Elastic and viscoelastic modeling for a virtual reality haptic feedback tissue cutting simulator related to arthroscopic surgery. Dean's Feasibility Grant, Hershey Medical Center, 1997, (\$25,000). Responsible for development of the system testing protocols.

Slobounov, S. (P.I.). EEG and posture in elderly. Seed grant, Gerontology Center, PSU, 1997, (\$13,500).

Slobounov, S. (P.I.), Tutwiler, R. Brain-computer interface development. 1997-1999 [Co-funded by PSU Central Administration (\$8,000), Department of Kinesiology (\$7,000), Hershey Medical Center (\$5,000) CHHD (\$5,000), CAC (donated SGI workstation O2, \$25,000; Silicon Graphics Presenter 1280, (\$12,000) and Dukane INDY Projector, (\$10,000)], total grant \$ 72,000,00

Slobounov, S. (P.I.), Ray, W. EEG and anticipatory postural movement in aged and young adults. Seed Grant, CHHD. 1995, (\$15,000).

Not-Funded Grants

Slobounov, S., (P.I.), Newell, K., Arnold, S., Tutwiler, R. Sebastianelli, W. Fall-related traumatic brain injury in the elderly. RO3, NIH, Second submission, 2006-2008, (\$145,000).

Slobounov, S. (P.I.), Sebastiaenelli, W., Otto, G. Application of virtual reality in a clinical setting. Johnson & Johnson Consumer and Personal Products Worldwide and PSU, CHHD, 2006-2007, (\$55,000), seed grant proposal, 2006.

Newell, K., Slobounov, S. (Co-I.), Varadan, V. Tremor and dyskinesia assessment in Parkinson's disease. Part of assessing risk and improving outcomes in Parkinsonism - COE for research on Neurodegenerative Diseases and Tobacco use & Cessation (James R. Connor P.I.) to Pennsylvania State Health Department, 2005 -2009, (\$4,999,987). Responsible for EEG research implementation of this grant.

Newell, K., Slobounov, S. (Co-I.), Mayer-Kress, G. The dynamics of practice and the time scales of change in motor learning. NSF, 2006-2010 (\$807,785). Responsible for conducting EEG experiments within the scope of this grant.

Slobounov, S., (P.I.), Newell, K., Sebastianelli, W. Functional sequelae of mild traumatic brain injury. RO1, NIH, 2005-2010, (\$1,805,050).

Ray, W., Ritter, F., Slobounov, S. (Co-P.I.), Tutwiler, R. Cooperative alliances in technology: Advanced Architecture. Raytheon Company, 2001-2010, (\$2,281,969). Responsible for proposed experimental designs.

Slobounov, S. (P.I.), Newell, K., Ray, W. Cortical control of dual-task performances. NSF, 2003, (\$400,587).

Slobounov, S., (P.I.), Sebastianelli, W., Hallett, M., Elsinger, P. Bridging behavioral and brain imaging and virtual reality technologies to access concussion in athletics. James S. McDonnell Foundation, 2003-2006 Century Initiative Research Awards, (\$450,000).

Slobounov, S. (P.I.), Sebastianelli, W., Newell, K., Hallett, M., Elsinger, P. Advanced technology for assessing the outcomes of MTBI. U.S. Department of Health and Human Services (HHS); Centers for Disease Control and Prevention (CDC), 2003-2005, (\$494,976).

Slobounov, S. (P.I.), Sebastianelli, W., Challis, J., Miller, S.J. New technology for restoration of human mobility. NIH, NICHD Small Grants Program, 1999-2001, (\$137,130).

Slobounov, S.(P.I.), Tutwiler, R. Neurophysiological & behavioral mechanisms of falling in the elderly. American Federation for Aging Research (AFAR), 1998-1999, (\$40,000).

Slobounov, S. (P.I.). Postural stability in elderly. NIH, NIA, 1994-1995, (\$27,193).

Publications

Refereed Journal Articles (1994 to present)

Teel, E., Ray, W., Geronimo, A, **Slobounov S.** (2014). Residual alterations of brain electrical activity in clinically asymptomatic concussed individuals: and EEG study. *Clinical Neurophysiology*, PMID: 24140103.

Papa, L., Ramia, M., Edwards, D., Johnson, B., **Slobounov, S.** (2014). Systematic review of clinical studies examining biomarkers of brain injury in athletes following sports-related concussion. *Journal of Neurotrauma*, PMID: doi:10.1089/neu.2014.3655.

Garimella, H., Yuan, H., Johnson, B., **Slobounov, S.**, Kraft, R. (2014). Anisotropic constitutive model of human brain with intravoxel heterogeneity of fiber orientation using diffusion spectrum imaging (DSI). Proceedings of the International Mechanical Engineering Congress and Explosion. ASME IMECE, 2014. November 14-20, 2014, Montreal Canada.

Johnson, B, Neuberger, T., Gay, M., Hallett, M. **Slobounov, S.** (2014). Effect of sub-concussive head trauma on the Default Mode Network of the Brain. *Journal of Neurotrauma*, Epub ahead of print: PMID: 25010992.

Slobounov, S., Bazarian, J., Bigler, E., Cantu, R., et al. (2014). Sports-related concussion: ongoing debate. *British Journal of Sport Medicine*, 48(2), 75-6.

Kirby, M., **Slobounov, S.**, Newell, K. (in press). Aging the and recovery of postural stability from taking a step. *Gait and Posture*. GAIPOS-D-14-0016R1

Slobounov, S. (2014). Metabolic alteration of primary motor cortex may be compromised in clinically asymptomatic concussed athletes. Editorial. *Clinical Neurophysiology*, PMID: 24461796

Teel, L., **Slobounov, S.** (2014). Validation of Virtual Reality Balance Module in Clinical Concussion Assessment and Management. *Clinical Journal of Sport Medicine*, PMID:24905539

Slobounov, S., Teel, L., Newell, K. (2013). Modulation of cortical activity in response to visually induced postural perturbation: combined VR and EEG study. *Neuroscience Letters*, 547, 6-9.

Slobounov, S., Sebastianelli W, Hallett M (2012). Residual brain dysfunction observed one year post-mild traumatic brain injury, Combined EEG and balance study. *Clinical Neurophysiology*, 123(9), 1755-61.

Slobounov, S., Gay, M, Johnson, B., Zhang, K. (2012). Controversies in concussion research and clinical practice: Review. *Brain Imaging and Behavior*, 6(2), 224-43.

Johnson, B., Slobounov, S. et al. (2012). The Use of Magnetic Resonance Spectroscopy (¹H-MRS) in the Sub-Acute Evaluation of Athletes Recovering from Single and Multiple MTBI. *Journal of NeuroTrauma*, 29(13), 2297-304.

Johnson B, Gay M, Horovitz SG, Hallett M, Zhang K, Sebastianelli W, **Slobounov S** (2012). Metabolic alterations in corpus callosum may compromise brain functional connectivity in MTBI patients: An (¹H)-MRS study. *Neuroscience Letters*, 10(509), 5-8.

Zhang K, Johnson B, Gay M, Horovitz SG, Hallett M, Sebastianelli W, **Slobounov S** (2012). Default Mode Network in Concussed Individuals in Response to the YMCA Physical Stress Test. *Journal of Neurotrauma* 29, 756-765.

Slobounov, S., Sebastianelli, W., Newell, K. IEEE. (2011). Incorporating virtual reality graphics with brain imaging for assessment of sport-related concussions. Conference Proceedings IEEE Engineering and *Medical Biology*, 1383-6.

Barwick, F., Arnett, P., **Slobounov, S.** (2012). EEG correlates of fatigue during administering of a neuropsychological test battery. *Clinical Neurophysiology*, 123(2), 278-84.

Johnson, B., Zhang, K., Gay, M., Horovitz, S., Hallett, M., Sebastianelli, W., **Slobounov, S.** (2011). Alteration of brain default network in subacute phase of injury in concussed individuals: Resting state fMRI study. *NeuroImage*, 59, 511-518.

Gloyer, K., Aukerman, D., Sebastianelli, W., **Slobounov, S.** (May 2011). Application of Virtual Reality for Assessment of Concussion in Sports. American Medical Society for Sports Medicine, AMSSM, 20th Annual Meeting, Salt Lake City, UT.

Slobounov, S., Johnson, B., Zhang, K., Hallett, M., Horovitz, S., Sebastianelli, W., Gay, M. (2011). Alteration of brain functional network at rest and in response to YMCA physical stress test in concussed athletes: rsfMRI study. *NeuroImage*, 55(4), 1716-27.

Cao, C., **Slobounov, S.** (2011). Application of a novel measure of EEG nonstationarity as Shannon entropy of the peak frequency shifting for detecting residual abnormalities in concussed individuals. *Clinical Neurophysiology*.

Slobounov, S., Zhang, K., Penell, D., Ray, W., Sebastianelli, W. (2010). Functional abnormalities in asymptomatic concussed individuals: fMRI study. *Experimental Brain Research*, 202(2), 341.

Jaiswal, N., Ray, W., **Slobounov, S.** (2011). Encoding required more cerebral resources than retrieval: combined EEG and Virtual Reality study. *Brain Research*, 1347:80-9.

Gate, K., Molenaar, P., Hillary, F., **Slobounov, S.** (2010). Extended unified SEM approach for modeling event-related fMRI data. *Neuroimage*, 54(2), 1151-8.

Zhang, K., Johnson, B., Penell, D., Ray, W., Sebastianelli, W., **Slobounov, S.** (2010). Are functional deficits in concussed individuals parallel structural alterations in white matter: Combined fMRI and DTI study. *Experimental Brain Research*, 4(1), 57-70

Slobounov, S. (2010, MS # 00458). Event-Related Potentials: Slow Potentials. *Encyclopedia of Movement Disorders*, Oxford: Academic Press.

Newell, K. & **Slobounov, S.** (2010). Variation. *Encyclopedia of Movement Disorders*. Oxford: Academic Press.

Slobounov, S., Cao, C., & Sebastianelli, W. (2009). Differential effect of first versus second concussive episodes on wavelet information quality of EEG. *Clinical Neurophysiology*, 120, 862-867.

Slobounov, S., Cao, C., Jaiswal, N., Newell, K. (2009). Predictor of postural instability revealed by VTC and EEG. *Experimental Brain Research*, 191(1), 1-16.

Cao, C., & **Slobounov, S.** (published on-line, July 17, 2009). Alteration of cortical functional connectivity as a result of traumatic brain injury revealed by graph theory, ICA and s LORETA analyses of EEG signals. *IEEE, Transactions on Neural Systems and Rehabilitation Engineering*

Slobounov, S., Newell, K. (2009). Balance and Posture: Human. *Encyclopedia of Neuroscience*, volume 2, pp.31-35. Oxford: Academic Press.

Haibach, P. S., **Slobounov, S. M.**, & Newell, K. M. (2009). Egomotion and vection in young and elderly adults. *Gerontology*, 55 (6), 637-643.

Cao, C, Tutwiler, R., **Slobounov, S.** (2008). Automatic classification of athletes with residual functional deficits following concussion by means of EEG signal using support vector machine. *IEEE Transactions on Neural systems and rehabilitation engineering*, 16 (4), 327-335.

Slobounov, S.M., Hallett, M., Cao,C., Newell, K. (2008). Modulation of cortical activity as a result of voluntary postural sway direction: An EEG study. *Neuroscience Letters*, 442, 309-313.

Slobounov, S. M., Cao, C., Sebastianelli, W., Slobounov, E., Newell, K. (2008). Residual deficits from concussion as revealed by virtual time-to-contract measures of postural stability. *Clinical Neurophysiology*, 119, 281-289

Haibach, P., **Slobounov, S.**, Newell, K. (2008). The potential application of a virtual moving environment for assessing falls in the elderly adults. *Gait and Posture*, 27(2), 303-308.

Slobounov, S., Cao, C., Ray, W., Chiang, H. (2007). Modulation of Cortical Activity as a Result of Task-Specific Practice. *Neuroscience Letters*, 421, 126-131.

Haibach, P. S., **Slobounov, S. M.**, Slobounova, E. S., Newell, K. M.(2007). Virtual time-to-contact of stability boundaries as a function of support surface compliance. *Experimental Brain Research*, 177(4), 471-482.

Haibach, P. S., Slobounov, S. M., Slobounov, E. S., Newell, K. M. (2007). Aging and time-to-postural stability following a visual perturbation. *Aging Clinical and Experimental Research*, 19(6), 238-243.

Slobounov, S., Sebastianelli, W., Cao, C., Slobounov, E, Newell, K. (2007). Differential rate of recovery in athletes after first versus and second concussion episodes. *Neurosurgery*, 61(2), 238-244..

Slobounov, S., Haibach, P., Newell, K. (2006). Aging-related temporal constraints to stability and instability in postural control. *European Review of Aging and Physical Activity*, 3, 55-62.

Slobounov, S., Sebastianelli, W., Tutwiler, R., Slobounov, E. (2006). Alteration of postural responses to visual field motion in mild traumatic brain injury. *Neurosurgery*, 59(1), 134-139.

Slobounov, S., Wu, T., Hallett, M. (2006). Neural basis subserving the detection of postural instability: An fMRI study. *Motor Control*, 10(1), 69-89.

- Slobounov, S., Hallett, M., Wu, T., Shibasaki, H., Newell, K. (2006). Neural underpinning of postural responses to visual field motion. *Biological Psychology*, 72, 188-197.
- Slobounov, S., Newell, K., Slobounov, E. (2006). Application of virtual reality graphics in assessment of concussion. *CyberPsychology & Behavior*, 9(2), 188-191.
- Slobounov, S., Hallett, M., Stanhope, S., Shibasaki, H. (2005). Role of cerebral cortex in human postural control: EEG study. *Clinical Neurophysiology*, 116(2), 315-323.
- Thompson, J., Sebastianelli, W., Slobounov, S. (2005). EEG and postural correlates of mild traumatic brain injury in athletes. *Neuroscience Letters*, 377, 158-163.
- Slobounov, S., Sebastianelli, W., Moss, R. (2005). Alteration of posture-related cortical potentials in mild traumatic brain injury. *Neuroscience Letters*, 383, 251-255.
- Slobounov, S., Hallett, M., Newell, K. (2004). Perceived effort in force production as reflected in motor-related cortical potentials. *Clinical Neurophysiology*, 115(10), 2391-2402.
- Chiang, H., **Slobounov, S.**, Ray, W. (2004). Practice-related modulation of force enslaving and cortical activity as revealed by EEG. *Clinical Neurophysiology*, 115(5), 1033-1043.
- Slobounov, S., Sebastianelli, W., Simon, R. (2002). Neurophysiological and behavioral concomitants of mild brain injury in collegiate athletes. *Clinical Neurophysiology*, 113, 185-193.
- Slobounov, S., Johnston, J., Chiang, H., Ray, W. (2002). Movement-related EEG potentials are force or end-effector dependent: Evidence from a multifinger experiment. *Clinical Neurophysiology*, 113, 1125-1135.
- Slobounov, S., Johnston, J., Chiang, H., Ray, W. (2002). The role of sub-maximal force production in the enslaving phenomenon. *Brain Research*, 954, 212-219.
- Slobounov, S., Johnston, J., Chiang, H., Ray, W. (2002). Motor-related cortical potentials accompanying enslaving effect in single versus combination of fingers force production tasks. *Clinical Neurophysiology*, 113, 1444-1453.
- Slobounov, S., Chiang, H., Johnston, J., Ray, W. (2002). Modulated cortical control of individuated fingers in experienced musicians: An EEG study. *Clinical Neurophysiology*, 113, 2013-2024.
- Ray, W., **Slobounov, S.** (2002). Modulation and experience of external stimuli: Toward a science of experience and interoception. *Acta Biologica Hungarica*, 53(4), 551-558.
- Rearick, M.P., Johnston, J.A., **Slobounov, S. M.** (2001). Feedback-dependent modulation of isometric force control: An EEG study in visuo-motor integration. *Cognitive Brain Research*, 12, 117-130.

Johnston, J., Rearick, M., **Slobounov, S.** (2001). Movement-related cortical potentials associated with progressive muscle fatigue in a grasping task. *Clinical Neurophysiology*, 112, 68-77.

Slobounov, S., Rearick, M., Simon, R., Johnston, J. A. (2000). Movement-related potentials are task or end-effector specific: Evidence from a multifinger experiment. *Experimental Brain Research*, 135(1), 106-116.

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Books

Slobounov, S. & Sebastianelli, W. (2014). **Concussion in Athletics: from Brain to Behavior**. Springer.

Slobounov, S. (2008). **Injury in Athletics: Causes and Consequences**. Springer

Slobounov, S., Sebastianelli, W. (Editors). ***Foundations of Sport-Related Brain Injuries***. Springer, 2006.

Slobounov, S. M., Ryzonkin, Y. I. ***Physical Exercise for All and its Psychological Benefits***. Moscow: FIS., 1989.

Slobounov, S. M., Ryzonkin, Y. I. ***Stress Prevention by Means of Physical Exercise***. Moscow: FIS., 1989.

Slobounov, S. M. ***Psychological Effects of Physical Exercises***. Moscow: FIS., 1989.

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Book Chapters

Johnson, B., **Slobounov, S.** (2014). Functional Neuroimaging of Persistent or Progressive Traumatic encephalopathy (Ch # 24). In Textbook of Concussion & Traumatic Encephalopathy, Jeff Viktoroff (ed). Cambridge University Press.

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Refereed Journal Articles (prior to 1994; in Russian)

Slobounov, S. M. (1990). Cortical mechanisms of human voluntary movement: Event-related brain potentials associated with imagery and actual athletic movements. *Vestnic of Moscow University*, 12, 23-37.

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Manuscripts in preparation

Zhang, K., Slobounov, S. et al. (2014). Default mode network may not be compromised by a concussive blow. *NeuroTrauma*.

Slobounov, S., Zhang, K (2014). Neural substrates of abnormal eye movement in concussed individuals: fMRI study. *Brain, Neurology*.

Slobounov, S. (2014). Is rest the only treatment of concussed athletes: Combined EEG/fMRI study. *NeuroImage, Clinical*.

Slobounov, S. (2014). Medical history of concussion influence the effect of sub-concussive blows in athletics. Combined Virtual Reality and MRS/DTI/fMRI study. *Journal of NeuroSurgery*

Journal Articles/Proceedings Papers

Slobounov, S. (2006). Book Review: Introduction to event-related potential techniques. *Cognitive Neuroscience*. S. Luck. MIT Press. *The Quarterly Review Of Biology*, 81(2), 201-202.

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Slobounov, S. M., Devishvily, V. M. (1980). EEG Readiness potentials and accuracy of fingers movements. In: *Proceedings of Moscow University* (Ed.) A.R.Luria, (pp.45-60).

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Slobounov, S. M. Kuznetsov, V.V.(1979). Biomechanical analysis of elementary movement actions. In: *Proceedings of All-Union Conference of Biomechanics*, Riga, v.3,105-107.

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Devishvily, V. M., Slobounov, S. M. (1978). Psychological refractory period and diagnostic of motor skill. In: *Material of XI All-Union Congress of Sport Psychology* (pp.34-56), Moscow: FIC.

Slobounov, S. M., Devishvily, V. M. (1977). Sensori-motor interaction and skill acquisition. In: *Proceedings of V All-Union Congress of Psychologists* (pp. 15-25). Moscow: Nauka.

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Slobounov, S. (2013). Final Report to NIH, RO1 "Identification of Athletes at Risk for mTBI".

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Slobounov, S., Sebastianelli, W. (2005). VR Technology for Assessment of Return-to-Play after Concussion. *Report to Hershey Medical Center.*

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Slobounov, S., Slobounov, E., O'Brien, R. (1997). Computer Graphics for Coaches' Education Program. *Final Report, Grant # 97-7-2. United States Diving Foundation.*

Slobounov, S., Slobounov, E., O'Brien, R. (1996). Computer Graphics Visualization for Diving Performance Improvement. *Final Report, Grant # 96-3. United States Diving Foundation.*

Slobounov, S., Slobounov, E., Otto, G., Masters, R., O'Brien, R. (1995). Computer Graphics for Balance Improvement in Springboard Diving. *Final Report, Grant # 95-21. United States Diving Foundation.*

Other representative publications

Slobounov, S. M., Lebedev, V. S., Ershova, O. P. (1989). Representative psychological and psychophysiological estimates of motor skill effectiveness in diving sport. In V.F Sopov (Ed.) *Psychopedagogical Aspects of Sport*, (pp.57-63). Alma-Ata.

Slobounov, S. M. (1986). *Stress Prevention Program for the USSR Olympic Divers.* Moscow: Goscomsport.

Slobounov, S. M. (1986). EEG biofeedback techniques and athletic training. In: *Psychological Preparation of Top Level Athletes.* Moscow: Goscomsport.

Slobounov, S. M., Ershova, O. P.(1986). Unification of psycho-motor testing procedures in sport domain. In: *Psychological Preparation of Athletes.*(pp.12-20). Charkow: FIS.

Slobounov S. M. (1985). Psychological rehabilitation for injured athletes. *Methodical Letter*. Moscow: Sportcommittee of the USSR.

Slobounov, S. M. (1985). Interactive effect of EEG and EMG biofeedback, electrostimulation and mental practice in psychological recovery of injured athletes. *Methodical Letter*. Moscow: Sportcommittee of the USSR.

Slobounov, S. M. , Larushkin, A.E., Krutov, V. I. (1984). *Long-term, Goal-oriented Program of the USSR Divers Preparation for the 1988 Olympic Games*. Moscow: Sportcommittee of the USSR.

Slobounov, S. M., Larushkin, A. E. (1981). *Long-term, Goal-oriented Program of the USSR divers preparation for the 1984 Olympic Games*. Moscow: Sportcommittee of the USSR

Slobounov, S. M., Ratov, I. P. (1981). Psycho-biomechanical study of sensory-motor coordination. In Ratov (Ed.): *Problems of Sport Biomechanics*, (pp.12-22). Moscow: VNIIFK.

Slobounov, S. M., Pokrovski, A. K. (1980). Improvement of intermuscular coordination by means of biofeedback. In: *Standards and Measurements in Sport Science*, (pp.158-160). Moscow: FIS.

Slobounov, S. M. (1980). Biofeedback and acquisition of motor skill. In: *Standards and Measurements in Sport Science*, (pp.170-175). Moscow: FIS.

Slobounov, S. M. (1980). Qualitative analysis of motor skill. In: *Standards and Measurements in Sport Science*, (pp.123-125). Moscow: FIS.

Slobounov, S. M.(1979). EEG biofeedback and movement disorders. In: *Problems of Engineering Psychology*, (vol.3, 17-45). Leningrad: LGU Publisher.

Slobounov, S. M. (1979). *Cognition-action coupling in acquisition of motor skill*. Leningrad: LGU Publisher.

Presentations

Invited Research Presentations

Slobounov, S. Application of Virtual Reality and Brain imaging testing for Assessment of Concussion. (March, 2013). ***American Academy of Neurology Annual Meeting***, San Diego, CA.

Slobounov, S. & Sebastianelli, W. (February, 2013). Feasibility of Brian Imaging and VR for Return-to-Play Evaluation After Concussion. ***American Society of Clinical Neurophysiology***, Miami, FL.

Slobounov, S. & Sebastianelli. (November 2012). Brain Imaging tools in assessment the effects of sub-concussive blows. Zurich, 4th International concussion consensus Conference (Abstracts in Press) .

Slobounov, S. (November 2012). Incorporation of Virtual Reality and Brain Imaging in a Clinical Assessment of Sports-Related Concussion. Italy, Rome Fondazione Santa Lucia.

Slobounov, S. (August 2010). Brain Imaging & Virtual Reality application for TBI assessment. ATACCC, DOD workshop. St.Petersburg, Florida.

Slobounov, S., Slobounov, E. Incorporation of Virtual Reality with Brain Imaging Technologies. Workshop presentation at International Society of Biomechanics: Penn State University, September, 2009.

Slobounov, S., Slobounov, E. Incorporation of Virtual Reality with Brain Imaging Technologies. Workshop presentation at International Conference: Virtual Rehabilitation. Haifa, Israel, June 29, 2009.

Slobounov, S., Sebastianelli, W., Ackerman, D., Bosha, P. Residual deficits in concussed athletes. 3rd International Conference "Concussion in Sport". Zurich, Switzerland, October 30th, 2008. (Abstract is in press).

Slobounov, S., Newell, K., Sebastianelli, W. (2008). Virtual reality graphics in a clinical assessment of concussion. North American Brain Injury Society (NABIS). October 2-4, 2008. New Orleans, Louisiana.

Abstract is published in The Journal of Head Trauma Rehabilitation, September-October, 2008, V. 23 (5), p.340.

Slobounov, S. (2007). Neural basis of balance control. Presented at International conference. *Neural Control of Movement*, May, Seville, Spain.

Slobounov, S., Slobounov, E. (2006, August). Graphic visualization and virtual environments applied to elite sportsmen: Experiences with advanced technologies. Presented at XXY Summer Courses of the University of Basque Country (UPV/EHU) XYII European Courses. August 30-31, 2006. San Sebastian, Spain.

Slobounov, S., Slobounov, E. (2006, March). Application of Virtual Reality technologies for performance enhancement in springboard diving. Presented at Symposium of Sport Sciences, affiliated with International Competition "*Spring Swallow*", Electrostate, Russia.

Slobounov, S. (2005, March). *Predicting athletes at risk for traumatic injuries*. Presented at International Symposium of Sport Sciences, affiliated with International Competition "*Spring Swallow*", Moscow, Russia.

Slobounov, S. (2002, March). *Advanced technology for assessment of mild brain injury in athletes*. Presented at North American College of Sport Medicine NWACSM Conference, Spokane, WA.

Slobounov, S. M. (1993, September). *Psychological causes of athletic injury: Rehabilitation by means of Behavioral Psychotherapy*. Presented at Sport Medicine Symposium, Clermont, Florida.

Slobounov, S.M. (1992, October). *Cognitive impairments as the result of early professional orientation in sport; Soviet experience in athletic training*. Presented at the Continuing Medical Education Course "Adolescent Sport Injuries: A Symposium for Physicians", Lexington, Kentucky.

Slobounov S. M. (1992, October). *Pre-revolutionary look at sport Medicine in Russia*. Presented at the continuing Medical Education Course "Adolescent Sport Injuries: A symposium for Physicians", Lexington, Kentucky.

Slobounov S. M. (1990, August). *Sport psychology in the Soviet Union and America: State of the Science and Profession in 1990*. Presented at the Citizen Initiative conference: U.S./USSR and the Seattle Organizing Committee for Sport Psychology at the Goodwill Games, Seattle.

Slobounov, S. M. (1990, February). *Stress management program in athletic training*. Presented at the International Society of Sport Psychology (ISSP) International Conference of Sport Psychology, Belo-Horizonte, Brazil.

Slobounov, S.M. (1989, August). *Computer psychodiagnostics in athletic training*. Presented at 5th International Congress of Sport Psychology, Singapore.

Slobounov, S. M. (1983, July). *Psychology of injured divers*. Presented at Olympic Solidarity Conference during FINA European Championship, Rome, Italy.

Slobounov, S. M. (1980, August). *Articulatory EMG, EEG and regulatory function of mental imagery*. Presented at International Olympic Congress, Tbilisi, Georgia.

Slobounov, S. M. (1975, September). *Mental imagery, electrostimulation and EEG/EMG-feedback in athletic training*. Presented at All-Union Conference of Sport Psychologists, Charkow, Ukraine.

Research Presentations at Professional Meetings

Slobounov, S. (2014). Concussion research at Penn State. CIC Concussion Summit, Philadelphia, PA, July 18-19, 2014.

Slobounov, S. (2013). Incorporation of VR and Imaging technologies in concussion research. John Hopking University, Medical School.

Slobounov, S. (2011). Concussion in Athletes: Brain Imaging Studies. International Society of Clinical Neurophysiology, Kobe, Japan.

Slobounov, S. (August 2010). Brain Imaging & Virtual Reality application for TBI assessment. ATACCC, DOD workshop. St.Petersburg, Florida.

Slobounov, S, Penell, D., Johnson, B. Zheng, K. (2009). Functional abnormalities in asymptomatic concussed individuals: fMRI study. Poster presentation at Conference : Clinical Neurology, Las Vegas, November.

Slobounov, SM. (2008, December). Concussion in Sport, New Development. Sport Medicine Clinic. Penn State University, University Park, PA. USA.

Slobounov, S. (2005, April). *Concussion in athletics: EEG and balance symptoms*. Conference: Concussion in Athletics: Ongoing Controversy. Penn State, University Park, PA, USA.

Slobounov, (2005, March). *Advanced technology in training of athletes*. International Seminar for Olympic Coaches. Madrid, Spain.

Slobounov, S., Slobounov, E. (2005, November). *Virtual reality application in assessment of concussion*. 4th International Workshop: "VR in Medical Rehabilitation". Catalina Island, CA, USA.

Chiang, H-H., Slobounov, S. M., Ray, W. (2005, June). *EEG correlates of individuated finger control as revealed by averaging techniques and continuous wavelet transforms*. North American Society of Sport Psychology and Physical Activity (NASPSPA) Conference, Clearwater, FL, USA.

Slobounov, S. (2004, December). *Prediction of secondary impact syndrome using EEG/balance dataset*. Brain Injury Association of New York State, NY, USA.

Thompson, J., Slobounov, S. (2004, June). *Concussion in Sport*. NASPSPA Conference, Vancouver, Canada.

Haibach, P., Slobounov, S., Slobounova, E., Newell, K. (2004, June). *VTC and postural stability*. NASPSPA Conference, Vancouver, Canada.

Slobounov, S., Hallett, M., Newell, K (2003, September). *Force-related effort as reflected in electroencephalography potentials*. 27th International Congress of Clinical Neurophysiology, San Francisco, CA, USA.

Slobounov, S., Johnston, J., Chiang, H., Ray, W. (2003, June). *Movement-related EEG potentials are force or end-effector dependent: evidence from a multifinger experiment*. NASPSPA Conference, Savannah, GA, USA.

Slobounov, S., Johnston, J., Chiang, H, Ray, W. (2003, June). *Modulated cortical control of individual fingers in experienced musicians: EEG study*. NASPSPA Conference, Savannah, GA, USA.

Gilmore, R., Dahlin, M., Vajaria, H., Slobounov, S., Chiang, H., Slobounov, E., Otto, G. (2002, March). *Development of perception-action coupling in early childhood*. Cognitive Neuroscience Society Annual Conference, Atlanta, GA, USA.

Slobounov, S.(2000, October). *Movement-related potentials as a function of movement amplitude and preloading conditions*. 40th International Meeting of the Society for Psychophysiological Research, San Diego, CA, USA.

Slobounov, S. (1999, October). *EEG correlates of index finger kinematics*. 39th International Meeting of the Society for Psychophysiological Research, Granada, Spain.

Slobounov, S. (1998, September). *EEG correlates of wrist kinematics as revealed by Morlet Wavelet*. 38th International Meeting of the Society for Psychophysiological Research, Denver, CO, USA.

Slobounov, S. M. (1997, April). *EEG and isometric force tasks*. 3d European Congress of Psychophysiology, Konstanz, Germany.

Slobounov, S. (1997, April). *Brain-computer interface based on non-orthogonal wavelet transform of EEG*. 3d European Congress of Psychophysiology, Konstanz, Germany.

Slobounov, S. (1997, October). *EEG patterns extracted by means of non-orthogonal wavelet transform*. 37th International Meeting of the Society for Psychophysiological Research, Cape Cod, MA, USA.

Simon, R., Slobounov, S. (1997, November). *An analysis of movement-related potentials and motor control in previously head-injured subjects*. Conference: "Sport Related Concussion and Nervous System Injuries". Orlando, FL, USA.

Slobounov, S. M. (1997, September). *Rate of force development and EEG movement related potentials*. NASPSPA Conference, September, Denver, CO, USA.

Tutwiler R., Slobounov, S. (1997, August). *Wavelet analysis for EEG signal classification*. Annual MATLAB Conference, Pittsburgh, PA, USA.

Slobounov, S., Ray, W. (1997, June). *EEG slow potentials with special reference to force production tasks*. 1997 NASPSPA Conference, Clearwater, FL, USA.

Slobounov, S. M. (1996, October). *EEG potentials in speed and accuracy finger movement tasks*. International Meeting of the Society for Psychophysiological Research, Vancouver, Canada.

Slobounov, S. M., Slobounov, E. S. (1995, June). *Computer graphics for rehabilitation of injured athletes*. NASPSPA Conference, Montoray, CA, USA.

Slobounov, S. M., Ray, W. (1995, May). *EEG and movement dynamics*. Presented at Neuroscience Day, Hershey Medical School, Hershey, PA, USA.

Slobounov, S. M., Newell, K. M. (1994, June). *Postural dynamic as a function of age*. NASPSPA Conference, Clearwater, FL, USA.

Slobounov, S. M., Newell, K. M. (1993, June). *Postural control as a function of skill level and task constraints*. NASPSPA Conference, Brainerd, MN, USA.

Research Seminars/Workshops Presented at Universities and Research Centers

Slobounov, S. (November 2013). Brain Imaging in Concussion. Wayne State University, Detroit, Medical College.

Slobounov, S.(January, 2012). Controversies in Sport Concussion Research. Wayne State University, Detroit, Medical College.

Slobounov, S. (June 2010). Concussion in Athletics: from Brain to Behavior. Neuroscience Grand Round, NINDS, NIH.

Slobounov, S (February, 2010). Brain imaging in concussion research. University of Oregon, EGI.

Slobounov, S. (2009, January). EEG decomposition techniques used for assessment of TBI. Institute for Neural Computation, San Diego, CA, USA.

Slobounov, S. (2003, October). *Neural mechanisms of individuated finger movements*. MERGE, NIH, NINDS, Bethesda, MD, USA.

Johnston, J., Slobounov, S. (2003, May). *Cortico-muscular coherence in motor tasks*. MERGE, NIH, NINDS, November, Bethesda, MD, USA

Slobounov, S. (2001, October). *EEG correlates of multifinger force production tasks*. Tubingen Neurology Center, NeuroScan International Workshop, Tubingen, Germany.

Slobounov, S. (2000, September). *Time-to-contact and postural stability in the elderly*. Presented at Max-Plank Institute for Aging Research, Berlin, Germany.

Slobounov, S. (2000, September). *EEG and movement dynamics: current trends and problems*. Tubingen University International Workshop on EEG, Tubingen, Germany.

Slobounov, S. (1999, November). *Brain computer interface: prospects and problems*. Invited presentation at University of Maryland.

Slobounov, S. (1996, October). *Postural stability index as revealed by virtual time-to-contact*. Invited presentation at University of Florida, Gainesville.

Slobounov, S. (1994, May). *Virtual time-to-contact and postural stability*. Invited presentation at University of North Carolina, Chapel Hill.

Slobounov, S. M. (1992, March). *Stress management program and psychological well-being*. Invited presentation for the Akron Institute of Sport Medicine, Akron, Ohio.

Slobounov, S. M. (1990, September). *Sport psychotherapy in the USSR*. Presented at the Seminar for Coaches and Athletes, Eastern Washington University, Spokane.

Shuhfried, G., Gutman E., Slobounov S. M. (1990, May). *Subcortical neuronal correlates of components P-300, readiness potentials and reaction time in human subjects*. Presented at International Seminar of Neuroscience, Austria, University of Vienna.

Other Invited Professional Presentations

Slobounov, S. (2008, December). Training of junior divers: Common coaches mistakes. US Diving Training Camp, Indianapolis, IN, USA.

Slobounov, S. (2007, May). Fitness training of Russian Divers. Presented at Techniscience seminar for USA Diving Coaches, Indianapolis, IN, USA

Slobounov, S. (2005, May). *Balance as a fundamental skill in diving*. Presented at Techniscience seminar for USA Diving Coaches, Fort Lauderdale, FL, USA

Slobounov, S. M. (1997, May). *Computer graphics as an educational tool for diving coaches*. Presented at Techniscience seminar for USA Diving Coaches, Fort Lauderdale, FL, USA.

Slobounov, S. M. (1995, September). *Computer graphics for balance improvement in diving*. Presented at the US Diving Coaches Conference. Houston, TX, USA.

Slobounov, S. M. & Ray, M. (1993, September). *Swimming techniques, stroke mechanics, training errors*. Presented at Sport Medicine Symposium, Clermont, FL, USA.

Slobounov, S. M. (1982, August). *Sport psychological service for Olympic Divers*. Presented at International Conference for diving coaches during FINA World Championship, Equador.

Service and Other Professional Activities

Editorial Board Service

Editorial Board of *Clinical Neurophysiology*, Appointed April 2007.

Technical Editor of *International Journal of Sport Science*. Appointed, September 2006 by Dr. Luis Miguel Ruiz Pérez, Director, Universidad Castilla la Mancha (ESP)

Editorial Board of *International Journal of Sport Psychology*. Appointed, August 1989 by Dr. John Salmela, Chief Editor, Canada.

Editorial Board of *Journal of Strength and Conditioning Research*. Appointed, 1997 by Dr. Bill Kraemer, Chief Editor, USA.

Ad-hoc Reviewer

Brain Imaging & Behavior
Brain, Neurology
Brain Stimulation
Journal of Gerontology, Medical Sciences
Experimental Brain Research
Psychophysiology
Psychophysiology: International Journal
Biological Psychology
Cognitive Brain Research

Clinical Neurophysiology
International Journal of Sport Psychology
Biology and Behavior
Motor Control
Perceptual and Motor Skills: Psychological Reports
Journal of Experimental Psychology: Human Perception and Performance
Journal of Exercise and Sport Psychology
Sport Psychologist
European Journal of Neuroscience
Journal of Neurophysiology
European Journal of Applied Physiology
Journal of Applied Biomechanics
The Quaterly Review of Biology
NeuroImage
Cerebral Cortex
Journal of Motor Behavior
Neuroscience Letters

Thesis Advisor and Postgraduate Sponsor

Johnson, Brain, Ph.D. March, 2013. Thesis: ***Differentialeffect of subconcussive head trauma in concussion.*** Graduation, Spring, 2013.

Gay, Michael, Ph.D. March, 2013. Thesis: ***Effect of performing the YMCA bike protocol on general brian function in athletes with and without mild traumatic brain injury.*** Graduation, Spring 2013.

Rosenthal Scott. MS.candidate – current. Topic: ***Brain imaging based treatment of concussed athletes.*** Graduation, Spring 2014.

Zheng, Kai. Ph.D. candidate – current. Topic: ***Neural bases of abnormal eye movement in acute concussion.*** Graduation, Spring 2014.

Gregory Miskinis, Ph.D. Candidate- Current: Topic: ***Virtual Reality side-line assessment of concussion in collegiate fooball.***

Elizabeth Tell, MS.(2013). Topic: ***EEG correlares of ImPact concussion testing protocol.*** Graduation, Spring, 2013.

Jaiswal, Niharika, MS. Thesis: ***Enconding is more challenging than retrieval of information during spatial navigation task: VR study.*** Graduation, Fall, 2009

Cheng, C. Ph.D. Thesis: ***Pattern recognition and classification of patients at risk for traumatic brain injury.*** Graduation, Summer, 2009.

Thompson. J. Ph.D. Thesis: ***Concussion in Athletics: ongoing problems in assessment and treatment.*** Graduation, Spring, 2007.

Singer, S. (IBIOS) Master Thesis: **Rate of recovery from traumatic brain injury along life-span**. Graduation, Summer 2006.

Thompson, J. (Spring, 2004). Master Thesis: **Concussion in athletics: EEG research of balance**.

Moss, R. (Spring, 2005). Master Thesis: **Fear of re-injury as a result of concussion in athletics**. Currently with NIKE, Research and Development Department.

Johnston, J. Ph.D. (Summer, 2003). Thesis: *Cortical activity associated with physiologic postural finger tremor*. Currently, post-doc position at Arizona State University. Current recipient of NIH post-doctoral grant 2004-2006.

Chiang, H. Ph.D. (Fall, 2003). Thesis: *The role of deliberate practice in force enslaving phenomenon: behavioral and electro-cortical analyses*. Currently Assistant Professor at Chinese Culture University in Taipei.

Rearick, M. Ph.D. (Spring, 2001). Thesis: *Feedback-dependent modulation of isometric force control: EEG study*. Upon graduation, accepted post-doc position at Arizona State University, 2001-2002, Funded by NIH.

Johnston, J. (Spring, 2000). Master Thesis: *Central mechanisms of progressive muscle fatigue in a grasping task*.

Simon, R. (Spring, 1996). Master Thesis: **Electro-cortical correlates of concussion among athletes**.

Fukada, K. (Fall, 1999). Master Thesis: *Neurophysiological and behavioral correlates of time pressure effects on performance in cognitive-motor tasks*. Upon graduation, accepted position of Clinical Sport Psychologist with the Japanese Olympic Committee.

Pool, S. (Spring, 1998). Master Thesis: *Restoring diminished knee mobility by means of computer graphics technologies*. Upon graduation, accepted position of Athletic Trainer with the University of North-Carolina.

Kwack, N. (Fall, 1998). Master Thesis: *EEG correlates of speed-accuracy motor tasks*. Currently Associate Professor, Korean Institute of Sport Sciences.

Golubeva, I. Ph.D. (1989). Scientific Institute of Sport Research, USSR. Thesis: *Use of mental visualization for enhancement of performance in gymnastics*.

Tarbeeveva, I. Ph.D. (1988). Scientific Institute of Sport Research, USSR. Thesis: *Mental training for Olympic swimmers*.

Kantor, E. Ph.D. (1988). Scientific Institute of Sport Research, USSR. Thesis: *Effect of professional sport on personality development*.

Gukasian, S. Ph.D. (1987). Scientific Institute of Sport Research, USSR. Thesis: *EMG modulations during imitation and real performance of motor skills*.

Neverov, A. Ph.D. (1985). Scientific Institute of Sport Research, USSR. Thesis: *Visuo-motor integration in boxing*.

Znamenskia, E. Ph.D. (1983). Scientific Institute of Sport Research, USSR. Thesis: *Stress-induced changes in EEG during imagery tasks*.

Pokrowski, A. M.S. (1981). Scientific Institute of Sport Research, USSR. Thesis: *Advanced feedback technology for athletic training*.

Service on Master thesis and Doctoral dissertation Committees

Master thesis: n = 15

Dissertation: n = 35

Committee Service

Service to the Penn State University

Penn State Center for Sport Concussion Research and Service- **Director**, 2012

Department of Kinesiology, Curriculum Committee, 2011-2012.

College Curriculum Committee, 2011-2012.

PSU fMRI steering committee member, 2007-present

Penn State Faculty Senator, 1998-2004

Chair of Information and Technology Committee, Penn State Faculty Senate –2000-2002

Member of FECAC Advisory Committee, 1999-2004

Service to Department of Kinesiology

Department representative at HHD Curriculum Committee, 2005-2006

Kinesiology Advisory Committee, 2006-2007

Students Scholarship Committee, 1994-1997

Undergraduate Curriculum Committee

Member: 1994-1996, 2001-2002, 2005-present

Chair: 2000-2001

Search Committee, Department Positions, Spring 1995

Search Committee, Department Position, Fall 1995

Search Committee Chair, Department Position, Spring, 1997, 1998, 1999

Outreach Service

Director and Chair, International Conference: "Concussion in Athletics: from Brain to Behavior", PSU, 2012

USA Olympic Diving Team Leader for International Meets in Russia, Spain, Germany, 2007-2012

USA Olympic Diving Team Leader for International Meets in China, 2007.

USA Diving Taland ID meeting, Indianapolis, 2007.

Director and Chair Conference: "Concussion in Athletics: Ongoing Controversy", PSU, 2005
www.outreach.psu.edu/cnf/concussion

USA Olympic Diving Team Leader for International Meets in Russia and Spain, 2005-2006

USA Olympic Diving National Training Camps, 2005

Co-Director PSU Concussion Workshop for Coaches. Center for Sports Medicine, 2004

USA Olympic Diving Team Leader for International Meets to Germany and Russia, 2004

USA Junior National Diving Training Camp Coach, 2003

Director PSU Workshop: "Application of VR for Concussion Research", Center for Academic Computing (CAC), University Park, 2002

Volunteer Diving Coach for State College Area, 1996-2003

Talent Identification Committee, USA Diving, 1995-2005

Scientific Consultant and Member of the USA Olympic Diving Traveling Team, 1995 - present