

## CURRICULUM VITAE

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#### EDUCATION

- D.Sc. (Ph.D.) in Biomechanics, Institute of Traumatology and Orthopedics, Latvia, 1990
- M.S. in Exercise and Sport Science, Central Institute of Physical Culture, USSR, 1982
- Ph.D. in Biological and Medical Cybernetics (Biomedical Engineering), Institute of Artificial Organs and Transplantation, Moscow, USSR, 1978
- M.S. in Electrical Engineering, Moscow Institute of Electronic Engineering, USSR 1969

#### PROFESSIONAL INFORMATION

- Professor, Director of the Knecht Movement Science Laboratory, Department of Physical Therapy. University of Illinois at Chicago, 2006 to present
- Professor, Department of Bioengineering. University of Illinois at Chicago, 2006 to present
- Associate Professor, Director of the Knecht Movement Science Laboratory, Department of Physical Therapy. University of Illinois at Chicago, 2000 to 2006
- Director of Graduate Studies, Department of Physical Therapy, University of Illinois at Chicago, 2006 to present
- Associate Professor, Department of Bioengineering. University of Illinois at Chicago, 2000 to 2006
- Faculty, Interdisciplinary PhD Program in Disability Studies. College of Applied Health Sciences, University of Illinois at Chicago, 2000-2009
- Preceptor, MD/PhD Training Program. University of Illinois at Chicago, 2003 – present
- Core faculty member, Interdisciplinary Training Program in Neuroscience. University of Illinois at Chicago, 2003 to present
- Senior Research Scientist/Director of the Motion Analysis Laboratory. Rehabilitation Foundation, Inc., Marianjoy Rehabilitation Hospital and Clinics, Wheaton, Illinois, 1997 -

2000

- Associate Professor, Professor, Department of Physical Medicine & Rehabilitation. Rush University Medical College, Chicago, Illinois, 1997 to present
- Senior Scientist (full professor rank). Department of Kinesiology. Pennsylvania State University, Pennsylvania, 1995 - 1997
- Assistant Professor, Department of Physical Medicine & Rehabilitation. Rush-Presbyterian St. Luke's Medical Center, Chicago, Illinois, 1992 - 1995
- Full Professor, Deputy Chairman, Department of Exercise and Sport Science, and Director of the Laboratory of Ergonomic (Occupational) Biomechanics. Moscow Institute of Electronic Engineering, Moscow, 1990-1992
- Associate Professor, Deputy Chairman on Research, Department of Exercise and Sport Science, and Director of the Laboratory of Ergonomic (Occupational) Biomechanics. Moscow Institute of Electronic Engineering, Moscow, 1982-1990
- Assistant Professor, Research Associate. Department of Exercise and Sport Science. Moscow Institute of Electronic Engineering, USSR, 1969-1982

### HONORS AND AWARDS

- Professor of the Year. University of Illinois at Chicago, AHS, 2014. The Award honors exceptional contributions to scholarship and teaching
- Graduate Mentoring Award. University of Illinois at Chicago, 2013. For outstanding commitment to, and development of graduate students mentoring
- The UIC Chancellor's Innovation Fund (CIF) 2013 Proof-of-Concept (POC) Award
- INSPIRE Award, University of Illinois at Chicago, 2012. The award recognizes individuals who have consistently and over long periods of time based their every action on UIC's Core Values, "Integrity, Nurture, Service, Pride, Intellect, Respect, and Excellence."
- UIC Chancellor's Graduate Research Fellowship Award (2011) to Sambit Mohapatra, PhD student (Mentor A. Aruin)
- UIC Provost and Deiss Award. (2011) to Neeta Kanekar, PhD student (Mentor A. Aruin)
- Educator of the Year, University of Illinois at Chicago, CAHS, 2009. For outstanding contributions to teaching students and inspiring and transforming their lives.
- WOW Award. University of Illinois at Chicago. For long-term, consistent, and outstanding professional service to the UIC community, 2009
- John Streff O.D. Vision Achievement Medal. Neuro-Optometric Rehabilitation Association International, 2005
- International Development Fund Award, John Nuveen Center for International Affairs, 2002
- Faculty Foreign Travel Award, UIC, 2002
- Silver Medal of the Russian Academy of Natural Sciences for the Achievements in

Medicine and Public Health, 2000

- NIH First Independent Research Award, 1998
- The Finest Inventor of the City of Moscow, USSR, 1987
- Gold Medal. All-USSR Competition in Research in Sports, 1982
- Gold Medal. USSR Department of Higher Education for the Direction of the Best Student Thesis Project in the Natural, Technical, and Social Fields, 1977
- Silver and Bronze Medals. National Exhibition for New Investigations of Human Movements, USSR, 1974, 1981

## PUBLICATIONS

! refers to publications with a student

\* refers to invited publications

1. Ma CC<sup>!</sup>, Lee YJ, Chen B<sup>!</sup>, **Aruin AS**. Immediate and short-term effects of wearing a single textured insole on symmetry of stance and gait in healthy adults. Gait Posture. 2016 9;49:190-195. PubMed PMID: 27448047.
2. Chen B<sup>!</sup>, Lee YJ, **Aruin AS**. Control of grip force and vertical posture while holding an object and being perturbed. Exp Brain Res. 2016 Jul 15. [Epub ahead of print] PubMed PMID: 2742129
3. **Aruin AS** (2016) Editorial. Enhancing Anticipatory Postural Adjustments: A Novel Approach to Balance Rehabilitation. J Nov Physiother 6:e144.doi:10.4172/2165-7025.1000e144
4. Shiratori T, Girolami GL, **Aruin AS**. Anticipatory postural adjustments associated with a loading perturbation in children with hemiplegic and diplegic cerebral palsy. Exp Brain Res. 2016 Oct;234(10):2967-78 PubMed PMID: 27324084.
5. Jagdhane S<sup>!</sup>, Kanekar N, **Aruin AS**. The Effect of a Four-Week Balance Training Program on Anticipatory Postural Adjustments in Older Adults: A Pilot Feasibility Study. Curr Aging Sci. 2016 Apr 13. [Epub ahead of print] PubMed PMID: 27071477 .
6. Trafimow J, Xaygnaraj J<sup>!</sup>, Trafimow D, **Aruin AS**. The importance of negative acceleration of the load in free-style lifting. Percept Mot Skills. 2015 Aug;121(1):163-9. doi: 10.2466/26.25.PMS.121c14x9. Epub 2015 Aug 24. PubMed PMID: 26302192.
7. Lee YJ, Chen B<sup>!</sup>, **Aruin AS**. Older adults utilize less efficient postural control when performing pushing task. J Electromyogr Kinesiol. 2015 Dec;25(6):966-72. doi: 10.1016/j.jelekin.2015.09.002. Epub 2015 Sep 9. PubMed PMID: 26403099;

8. Ganesan M, Kanekar N, **Aruin AS**. Direction-specific impairments of limits of stability in individuals with multiple sclerosis. Ann Phys Rehabil Med. 2015;58:145-50. PubMed PMID: 25960358.
9. Rao N, **Aruin AS**. Role of ankle foot orthoses in functional stability of individuals with stroke. Disabil Rehabil Assist Technol. 2015 Mar 31:1-4. [Epub ahead of print] PubMed PMID: 25826046.
10. **Aruin AS**, Kanekar N, Lee YJ<sup>1</sup>. Anticipatory and compensatory postural adjustments in individuals with multiple sclerosis in response to external perturbations. Neurosci Lett. 591:182-186. doi:10.1016/j.neulet.2015.02.050. PubMed PMID: 25711800
11. **Aruin AS**. Are Two Hands Sensing the Load Better Than One? Motor Control. 2015 Jan 14. [Epub ahead of print] PubMed PMID: 25588150.
12. **Aruin AS**. Kanekar N, Ganesan M<sup>1</sup>, Lee Y-J<sup>1</sup>, Enhancement of anticipatory postural adjustments in older adults as a result of a single-session of ball throwing exercise. Experimental Brain Research. 2015 233(2): 649-655 Nov 26. [Epub ahead of print] PMID: 25424864
13. Lee YJ<sup>1</sup>, **Aruin AS**. Effects of asymmetrical stance and movement on body rotation in pushing. J. Biomechanics. 2014 Nov 29. pii: S0021-9290(14)00620-4. doi: 10.1016/j.jbiomech.2014.11.032. [Epub ahead of print] PMID: 25498915
14. Ida H, Mohapatra S<sup>1</sup>, **Aruin AS**. How does foot elevation height during upright standing affect the activity of leg muscles on the supporting and lifting side? International Journal of Psychophysiology 2014, 94: 2 page 255
15. Kanekar N<sup>1</sup>, **Aruin AS**. Improvement of anticipatory postural adjustments for balance control: effect of a single training session. J Electromyogr Kinesiol. 2014 Nov 13. doi: 10.1016/j.jelekin.2014.11.002. [Epub ahead of print] PMID: 25434280
16. Ganesan M<sup>1</sup>, Lee YJ<sup>1</sup>, **Aruin A**. The Effect of Footrest on Standing Postural Control. Motor Control. 2014 Jul 15. [Epub ahead of print] PMID: 25029216.
17. Rao N, Wening J, Hasso D, Gnanaprasagam G, Perera P, Srigriraju P, **Aruin AS**. The effects of two different ankle-foot orthoses on gait of patients with acute hemiparetic cerebrovascular accident. Rehabil Res Pract. 2014;2014:301469. doi: 10.1155/2014/301469. Epub 2014 Sep 9. PMID: 25276433; PMCID: PMC4174983.

18. Kanekar N<sup>1</sup>, **Aruin AS**. Aging and balance control in response to external perturbations: role of anticipatory and compensatory postural mechanisms. Age (Dordr). 2014 Jun;36(3):9621 PMID: 24532389
19. Kanekar N<sup>1</sup>, **Aruin AS**. The effect of aging on anticipatory postural control. Exp Brain Res. 2014, 232:1127-1136. PMID: 24449006
20. Ganesan M<sup>1</sup>, Lee Y-J<sup>1</sup>, **Aruin AS**. The effect of lateral or medial wedges on control of postural sway in standing. Gait and Posture. 2014. 39(3):899-903. PMID: 24365327
21. Mohapatra S<sup>1</sup>, Kukkar KK<sup>1</sup>, **Aruin AS**. Support surface related changes in feedforward and feedback control of standing posture. J Electromyogr Kinesiol. 2014 Feb;24(1):144-52. PMID: 24268589.
22. Mehendale K<sup>1</sup>, **Aruin AS** Exercise Approaches to Ameliorate Fatigue in People with Multiple Sclerosis. J Nov Physiother 2013, 3: 179. doi:10.4172/2165- 7025.1000179
23. Kanekar N<sup>1</sup>, Lee YJ<sup>1</sup>, **Aruin AS**. Frequency analysis approach to study balance control in individuals with multiple sclerosis. J Neurosci Methods. 2014 30:222:91-6 doi: 10.1016/j.jneumeth.2013.10.020. Epub 2013 Nov 2. PMID: 24192227
24. Lee YJ<sup>1</sup>, **Aruin AS**. Isolated and combined effects of asymmetric stance and pushing movement on the anticipatory and compensatory postural control. Clin Neurophysiol. 2014;125:768-76. doi: 10.1016/j.clinph.2013.09.036. Epub 2013 Oct 23. PMID: 24161607
25. Chen B<sup>1</sup>, **Aruin AS**. Does the type of somatosensory information from the contralateral finger touch affect grip force control while lifting an object? Neuroscience Letters. 2013, 556:196-9. PMID: 24157853
26. **Aruin AS**, Kanekar N<sup>1</sup>. Effect of a textured insole on balance and gait symmetry. Exp Brain Res. 2013, 231(2):201-8. PMID: 23979014.
27. Kanekar N<sup>1</sup>, **Aruin AS**. The role of clinical and instrumented outcome measures in balance control of individuals with multiple sclerosis. Multiple Sclerosis International 2013:190162. doi: 10.1155/2013/190162. Epub 2013 May 25.
28. Trafimow J, **Aruin AS**. Obtaining Glenoid Positioning Data from Scapular Palpable Points In Vitro. Advances in Orthopedics, vol. 2013, Article ID 391260, 4 pages, 2013. doi:10.1155/2013/391260
29. **Aruin AS**. Inserts improve symmetry, velocity in stroke patients. Lower Extremity Review. June 2013, 11 pages

30. Lee YJ<sup>1</sup>, **Aruin AS**. Three components of postural control associated with pushing in symmetrical and asymmetrical stance. Exp Brain Res. 2013, 228:341-51. PMID: 2372782
31. Kanekar N<sup>1</sup>, Lee YJ<sup>1</sup>, **Aruin AS**. Effect of light finger touch in balance control of individuals with multiple sclerosis. Gait Posture. 2013 Mar 18. [Epub ahead of print] PMID: 24192227
32. Rao N, Zielke D, Keller S, Burns M, Sharma A, Krieger R, **Aruin AS**. Pregait balance rehabilitation in acute stroke patients. Int J Rehabil Res. 2013, 36:112-7. PMID: 3047373
33. Panwalkar N<sup>1</sup>, **Aruin AS**. Role of Ankle Foot Orthoses in the Outcome of Clinical Tests of Balance. Disability and Rehabilitation: Assistive Technology. 2013, 8:314-320. PMID:23078248
34. Mohapatra S<sup>1</sup>, **Aruin AS**. Static and dynamic visual cues in feed-forward postural control. Exp Brain Res. 2013 Jan;224(1):25-34. PMID: 23064846
35. **Aruin AS**, Rao N, Sharma A, Chaudhuri G. Compelled body weight shift approach in rehabilitation of individuals with chronic stroke. Top Stroke Rehabil. 2012, 19(6):556-563. PMID: 23192720
36. **\*Aruin AS**. Discomfort-Induced Approach in Physical Therapy and Rehabilitation. Journal Novel Physiotherapies. 2012. 3:131 doi: 10.4172/2165-7025.1000131
37. Nunes PM, de Oliveira DG, **Aruin AS**, Santos MJ. A Relationship between Hand Function and Grip Force Control in Individuals with Hand Osteoarthritis. Journal of Rehabilitation Research and Development. 2012. 49(6): 855-866
38. Mohapatra S<sup>1</sup>, Eviota AS, Ringquist KL, Muthukrishnan SR, and **Aruin AS**. Compelled Body Weight Shift Technique to Facilitate Rehabilitation of Individuals with Acute Stroke. ISRN Rehabilitation. Volume 2012 (2012), ID 328018, 7 pages. doi:10.5402/2012/328018 PMID: 25530888
39. Krishnan V<sup>1</sup>, Kanekar N<sup>1</sup>, **Aruin AS**. Feedforward postural control in individuals with multiple sclerosis during load release. Gait & Posture. 2012, 36:225-30
40. Mohapatra S<sup>1</sup>, Krishnan V<sup>1</sup>, **Aruin AS**. Postural control in response to an external perturbation: effect of altered proprioceptive information. Exp Brain Res. 2012, 217:197-208.
41. Krishnan V<sup>1</sup>, Kanekar N<sup>1</sup>, **Aruin AS**. Anticipatory postural adjustments in individuals with multiple sclerosis. Neuroscience Letters. 2012, 506:256-60. PMID: 22154279

42. Kanekar N<sup>1</sup>, Krishnan V<sup>1</sup>, **Aruin AS**. Enhancement of anticipatory postural control following a single training session. Gait & Posture. 2012, 36:S56.
43. Krishnan V<sup>1</sup>, Latash ML, **Aruin AS**. Early and Late Components of Feed-forward Postural Adjustments to Predictable Perturbations. Clinical Neurophysiology. 2012, 123 1016–1026
44. Girolami GL<sup>1</sup>, Shiratori T, **Aruin AS**. Anticipatory postural adjustments in children with hemiplegia and diplegia. Journal of Electromyography and Kinesiology. 2011, 21:988-97
45. de Oliveira DG, Nunes PM, **Aruin AS**, Santos MJ. Grip Force Control in Individuals with Hand Osteoarthritis. J Hand Therapy. 2011, 24:345-55.
46. Mohapatra S<sup>1</sup>, Krishnan V<sup>1</sup>, **Aruin AS**. The effect of decreased visual acuity on control of posture. Clinical Neurophysiology. 2012. 123:173-82. Epub 2011 Jul 22.
47. Krishnan V<sup>1</sup>, **Aruin AS**. Postural control in response to a perturbation: role of vision and additional support. Exp Brain Res 2011, 212, 47-63
48. Krishnan V<sup>1</sup>, **Aruin AS**, Latash ML. Two stages and three components of the postural preparation to action. Exp Brain Res. 2011 212(1):47-63. [Epub ahead of print] PubMed PMID: 21537967.
49. **Aruin A**, Rao N. Ankle -Foot Orthoses: proprioceptive outputs and balance implications. Journal of Prosthetics and Orthotics. 2010, 10, 34-37.
50. Rao N, **Aruin AS**. Auxiliary sensory cues improve automatic postural responses in individuals with diabetic neuropathy. Neurorehabilitation and Neurorepairs, 2011 Feb;25(2):110-7. Epub 2010 Sep 9.
51. Girolami GL<sup>1</sup>, Shiratori T, **Aruin AS**. Anticipatory postural adjustments in children with typical motor development. Experimental Brain Research, 2010, 205:153-65.
52. Rao N, Nashner L, **Aruin AS**. Perceived body position in standing individuals with recent stroke. Clin Neurophysiol. 2010 Nov;121(11):1934-8.PMID: 20472497
53. Santos MJ, Kanekar N<sup>1</sup>, **Aruin AS**. The Role of Anticipatory Postural Adjustments in Compensatory Control of Posture. 1. Electromyographic Analysis. Journal of Electromyography and Kinesiology. 2010, 20:388-97. **Most Cited Journal of Electromyography & Kinesiology Article since 2009**
54. Santos MJ, Kanekar N<sup>1</sup>, **Aruin AS**. The Role of Anticipatory Postural Adjustments in Compensatory Control of Posture. 2. Biomechanical Analysis. Journal of

Electromyography and Kinesiology. 2010, 20:398-405 **Most Cited Journal of Electromyography and Kinesiology Articles since 2009.**

55. Iyengar V<sup>1</sup>, Santos M<sup>1</sup>., Ko M., **Aruin A.** Grip force control in individuals with multiple sclerosis. Neurorehabilitation and Neurorepairs 2009, (8):855-861
56. Iyengar V<sup>1</sup>, Santos M<sup>1</sup>, Ko M., **Aruin A.** Effect of contralateral finger touch on grip force control in individuals with multiple sclerosis. Clinical Neurophysiology. 2009, 120(3): 626-631
57. Iyengar V<sup>1</sup>, Santos M<sup>1</sup>, **Aruin A.** Role of movement velocity on the magnitude of grip force while lifting an object with touch from the contralateral finger. Motor Control. 2009, 13: 1-14.
58. Li X<sup>1</sup>, **Aruin A.** The effect of short-term changes in body mass distribution on feed-forward postural control. J Electromyography and Kinesiology 2009, 19(5):931-941
59. Kanekar N<sup>1</sup>, Santos MJ<sup>1</sup>, **Aruin AS.** Anticipatory postural control following fatigue of postural and focal muscles. Clinical Neurophysiology. 2008, 119(10):2304-2313.
60. Santos M<sup>1</sup>, **Aruin A.** Timing of the vibration of arm muscles affects grip force control. Journal of Human Kinetics, 2008, 19, 25-38
61. Rao N, Chaudhuri G, Hasso D, D'Souza K, Wening J, Carlson C, **Aruin AS.** Gait assessment during the initial fitting of an ankle foot orthosis in individuals with stroke. Disabil Rehabil Assist Technol. 2008, 3(4):201-207
62. Li X<sup>1</sup>, **Aruin A.** Anticipatory postural adjustments in conditions of simulated reduced gravity. Gait & Posture, 2008, 28(4):538-544.
63. Zultowski I<sup>1</sup>, **Aruin A.** Carrying loads and postural sway in standing: the effect of load placement and magnitude. WORK, a Journal of Prevention, Assessment and Rehabilitation. 2008; 30: 359-368.
64. Santos M<sup>1</sup>, **Aruin A.** Effects of lateral perturbations and changing stance conditions on anticipatory postural adjustment. J Electromyography and Kinesiology 2009, 19(3):532-541.
65. Santos M<sup>1</sup>, **Aruin A.** Role of lateral muscles and body orientation in feedforward postural control. Experimental Brain Research, 2008;184(4):547-559
66. Iyengar V<sup>1</sup>, Santos M<sup>1</sup>, **Aruin A.** Does the location of the touch from the contralateral



- finger application affect grip force control while lifting an object? Neuroscience Letters, 2007, 425(3):151-155.
67. Shenoy S<sup>1</sup>, **Aruin A.** Effect of chair design on feedforward postural control in sitting. Motor Control, 2007 11(4): 309-321
68. Li X<sup>1</sup>, Zhou P, **Aruin A.** Teager-Kaiser Energy Operation of Surface EMG Improves Muscle Activity Onset Detection. Annals of Biomedical Engineering. 2007 35(9):1532-1538
69. Li X<sup>1</sup>, **Aruin A.** The effect of short-term changes in the body mass on anticipatory postural adjustments. Experimental Brain Research, 2007, 181(2):333-46.
70. Shiratori T, **Aruin A.** Modulation of anticipatory postural adjustments associated with unloading perturbation: effect of characteristics of a motor action. Experimental Brain Research. 2007, 178:206-15
71. Rao N, **Aruin A.** Automatic postural responses in individuals with peripheral neuropathy and Ankle Foot Orthoses. Diabetes Research and Clinical Practice. 74(1):48-56 (2006)
72. **Aruin A.** The effect of asymmetry of posture on anticipatory postural adjustments. Neuroscience Letters. 401(1-2):150-153 (2006)
73. **Aruin A.** Support-specific modulation of grip force in individuals with hemiparesis. Archives of Physical Medicine and Rehabilitation. 86:768-775 (2005)
74. \***Aruin A.** Biomechanics. In: Encyclopedia of Disability, Ed. G. Albrecht, Sage Publications, 2006.
75. Shiratori T<sup>1</sup>, **Aruin A.** Anticipatory postural adjustments associated with rotational perturbations while standing on fixed and free-rotating supports. Clinical Neurophysiology, 115:797-806 (2004)
76. **Aruin A**, Shiratori T<sup>1</sup>. The effect of the amplitude of motor action on anticipatory postural adjustments. Journal of Electromyography and Kinesiology, 14: 455-462 (2004)
77. **Aruin A**, Shiratori T<sup>1</sup>. Anticipatory postural adjustments while sitting: the effects of different leg supports. Experimental Brain Research, 151: 46-53 (2003)
78. **Aruin A.**, Hanke T. & Sharma A. Base of support feedback in gait rehabilitation. International Journal of Rehabilitation Research, 26:309-12 (2003)

79. **Aruin A.** The effect of changes in the body configuration on anticipatory postural adjustments. Motor Control, 7: 264-277 (2003)
80. **Aruin A.**, Mayka M<sup>1</sup>. & Shiratori T<sup>1</sup>. Could a motor action that has no direct relation to expected perturbation be associated with anticipatory postural adjustments? Neuroscience Letters, 341: 21-24 (2003)
81. \***Aruin A.** The organization of anticipatory postural adjustments. Journal of Automatic Control, 12: 31-37 (2002)
82. Slijper H<sup>1</sup>, Latash M., Rao N. & **Aruin A.** Task specific modulation of anticipatory postural adjustments in individuals with hemiparesis. Clinical Neurophysiology, 113: 642-655 (2002).
83. Rodriguez G<sup>1</sup>, **Aruin A.** The effect of shoe wedges and shoe lifts on symmetry of stance and weight bearing in hemiparetic individuals. Archives of Physical Medicine and Rehabilitation, 83: 478-483 (2002).
84. \***Aruin A.** The biomechanical foundations of a safe labor environment: Bernstein's vision in 1930. Motor Control, 6: 1-18 (2002).
85. **Aruin A.**, Shiratori T<sup>1</sup>. & Latash M. The role of action in postural preparation for loading and unloading in standing subjects. Experimental Brain Research, 138: 458-466 (2001).
86. **Aruin A.**, Ota T. & Latash M. Anticipatory postural adjustments associated with lateral and rotational perturbations during standing. Journal of Electromyography and Kinesiology, 11: 39-51 (2001).
87. **Aruin A.** Simple lower extremity two-joint synergy. Perceptual and Motor Skills, 92:563-568 (2001).
88. **Aruin A.**, Sharma A, Larkins R. & Chaudhuri G. Knee position feedback: its effect on management of pelvic instability in a stroke patient. Disability & Rehabilitation, 22:690-692 (2000).
89. Chaudhuri <sup>1</sup>, **Aruin A.** Dynamic postural control in individuals with hemiparesis: the effect of compelled weight shift. Archives of Physical Medicine and Rehabilitation, 81: 1498-1503 (2000).

90. \***Aruin A.S.** Sports after Amputation. The Encyclopedia of Sports Medicine: Biomechanics in Sport. Blackwell Science/International Olympic Committee Book, p.637-650 (2000).
91. **Aruin A.**, Hanke T, Chaudhuri G, Harvey R. & Rao N. Compelled weight bearing in patients with hemiparesis following stroke: the effect of a lift insert and goal-directed balance exercise. Journal of Rehabilitation Research and Development, Vol. 37:65-72  
PMID: 10847573
92. Rao N., **Aruin A.S.** The effect of ankle foot orthosis on balance impairment. Journal of Prosthetics and Orthotics, 11:15-19
93. Latash M.L., **Aruin A.S.** & V.M. Zatsiorsky. The basis of a simple synergy: reconstruction of joint equilibrium trajectories during unrestrained arm movements. Human Movement Science, 18: 3-30 (1999).
94. **Aruin A.S.**, Forrest WR<sup>1</sup> & Latash M.L. Anticipatory postural adjustment in conditions of postural instability. Electroencephalography and Clinical Neurophysiology, 109: 350-359 (1998).
95. **Aruin A.S.**, Nicholas J.J. & Latash M.L. Anticipatory postural adjustments during standing in below the knee amputees. Clinical Biomechanics, 12: 52-59 (1997).
96. **Aruin A.S.**, Almeida G.L. A coactivation strategy in anticipatory postural adjustment in persons with Down syndrome. Motor Control, 2: 178-191 (1997).
97. **Aruin A.S.** Adaptive changes in postural reactions after unilateral leg amputation. Behavioral and Brain Science. 19: 68-69 (1996).
98. **Aruin A.S.**, Latash M.L. Anticipatory postural adjustments during self-initiated perturbations of different magnitude triggered by standard motor action. Electroencephalography and Clinical Neurophysiology, 101: 497-503 (1996).
99. **Aruin A.S.**, Almeida G.L. & Latash M.L. Organization of a simple two-joint synergy in individuals with Down syndrome. American Journal of Mental Retardation 101:256-268 (1996).
100. **Aruin A.S.**, Neyman I., Nicholas J.J. & Latash M.L. Are there deficits in anticipatory postural adjustments in Parkinson's disease? NeuroReport, 7: 1794-1796 (1996).

101. **Aruin A.S.**, Latash M.L. The role of motor action in anticipatory postural adjustments studied with self-induced and externally triggered perturbations. Experimental Brain Research, 106: 291-300 (1995).
102. Latash M.L., **Aruin A.S.** & Shapiro MB<sup>1</sup>. The relation between posture and movement: a study of a simple synergy in a two-joint task. Human Movement Science, 14: 79-107 (1995).
103. Shapiro MB<sup>1</sup>, **Aruin A.S.** & Latash M.L. Velocity-dependent activation of postural muscles in a simple two-joint synergy. Human Movement Science, 14: 351-369 (1995).
104. **Aruin A.S.**, M. L. Latash. Directional specificity of postural muscles in feed-forward postural reactions during fast voluntary arm movements. Experimental Brain Research, 103: 323-332 (1995).
105. Latash M.L., **Aruin A.S.**, Neyman I, Nicholas J.J. & Shapiro M.B. Feed-forward postural adjustments in a simple two-joint synergy in patients with Parkinson's disease. Electroencephalography and Clinical Neurophysiology, 97: 77-89 (1995).
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108. Almelda G.L., **Aruin A.S.** & Latash M.L. Organization of a simple, two-joint synergy in individuals with Down syndrome. Brazilian International Journal of Adapted Physical Education Research, 1: 141-142 (1994).
109. **Aruin A.S.**, Almeida G.L. & Latash M.L. Anticipatory postural adjustments during predictable and self-inflicted perturbations in Down syndrome. Brazilian International Journal of Adapted Physical Education Research, 1: 146-147 (1994).
110. \***Aruin, A.S.** Biomechanical foundations of human environmental design. Teorija i Praktica Fizicheskoj Kulturi, 1: 20-23. (In Russian) (1993).
111. **Aruin, A.S.** Biomechanics of hard physical work. Modern Problems of Biomechanics, 7: 195-211 (1993).
112. Mirtov, J.N., **Aruin, A.S.** New Keyboard: A collection of single control movements. In:

- Ergonomics and Design of Robotics. pp.43-52, Moscow: Transactions of VNIITE, v.39 (1990).
113. **Aruin, A.S.** Computer-aided design of the work place. pp 1-17, Kiev: Znanie (in Russian) (1990).
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85. **Aruin A.S.**, Nicholas J.J., Latash M.L. Postural adjustments during standing in below-knee amputees. Rehabilitation R&D Progress Reports, Veterans Health Administration, 35: 29-30.
86. Latash M, **Aruin A.**, Zatsiorsky V. Joint equilibrium trajectories during multi-joint movements. Journal of Sport & Exercise Psychology, 20, Supplement: S42, NASPSPA Annual Conference Chicago, June 11-14, 1998.
87. Shiratori T, **Aruin A.**, & Latash M. Anticipatory phase of step initiation in Parkinson's disease. Symposium "Advances in Motor Rehabilitation," 18, Lisle, IL 1998.
88. Latash M, **Aruin A.**, Zatsiorsky V. Joint equilibrium trajectories during multi-joint movements. NASPSPA Conference, 35, St. Charles, IL (1998).

89. **Aruin A.S.** Anticipatory postural adjustments in health and disease. III International Congress of Motor Rehabilitation, Campinas, Brazil, October 5-8, 1998, Abstract published in: FISIOTERAPIA, 8 (1998).
90. Latash M.L., **Aruin A.S.**, Forrest W.R. Adaptive changes in anticipatory postural adjustments. Proceedings of an International Conference "Brain and Movement". p.115, St.Petersbrug- Moscow, July 5-10, 1997.
91. 120. Latash M.L., Domen K, **Aruin A.S.**, Zatsiorsky V.M. Equilibrium-point control of multi-joint movements. Proceedings of an International Conference "Brain and Movement". p.116, St. Petersbrug-Moscow, July 5-10, 1997.
92. Latash M.L., **Aruin A.S.**, Neyman I., Nicholas J.J. Feedforward postural control in Parkinson's disease. Abstracts of the 4-th International Congress of Movement Disorders, Movement Disorders, v. 11, Suppl. 1, p. 112. June 17-21, 1996; Vienna, Austria.
93. Latash M.L., **Aruin A.S.**: Anticipatory postural adjustments and equilibrium-point hypothesis of motor control. NASPSPA. Journal of Sport & Exercise Psychology, 18, 52 (1996).
94. **Aruin A.S.**, Latash M.L, Neyman I. & Nicholas J.J.: About the reason for lack of anticipatory postural adjustments in Parkinson's disease. Rush University Research Forum, 105, Chicago, IL (1996).
95. Latash M.L, **Aruin A.S.**: Reconstruction of joint equilibrium trajectories during unrestrained arm movements. Abstracts of the 26<sup>th</sup> Annual Meeting Society for Neuroscience, 1636 Miami, FL (1996).
96. **Aruin A.S.**, F. Davis, D. Stefoski & Nicholas J.J.: Walking patterns in multiple sclerosis. Rush University Research Forum, 99, Chicago, IL (1996).
97. Latash M.L, **Aruin A.S.**, Neyman I & J.J. Nicholas: Feed-forward postural control in Parkinson's disease. Abstracts of the 4<sup>th</sup> International Congress of Movement Disorders, 406, Vienna, Austria, (1996).
98. **Aruin A.S.**, Latash M.L.: The effects of postural stability on anticipatory postural adjustments. Proceedings of the 20<sup>th</sup> Annual Meeting of the American Society of Biomechanics, 169-170, Atlanta, GA (1996).
99. Latash M.L, **Aruin A.S.**: Reconstruction of joint equilibrium trajectories during unrestrained arm movements. Abstracts of the 26<sup>th</sup> Annual Meeting Society for

Neuroscience, 1636 Miami, FL (1996).

100. Животченко В.Д., Лисица И.Б., Потемкин Б.А., Скворчевский А.К., **Аруин А.С.** астотные составляющие сигналов силовой платформы: приложения к задачам поддержания равновесия // 3-я Всероссийская конференция по биомеханике. Тезисы докладов. – Нижний Новгород, 1996. – Т.1. – с.129-130.
101. **Aruin A.S.**, Latash M.L. Anticipatory postural control in conditions of postural instability. Proceedings of the International Conference “Bernstein’s Traditions in Motor Control,” 27. University Park, PA (1996).
102. **Aruin A.S.**, Latash M.L. & Nicholas J.J.: Postural adjustments in standing of below knee amputees associated with perturbations Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 99, Chicago, IL (1995).
103. Nicholas J.J., **Aruin A.S.** & Latash M.L.: Changes in moments of force of proximal leg muscles after below knee amputation. Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 100, Chicago, IL (1995).
104. **Aruin A.S.**, Latash M.L.: Unstable posture and anticipatory adjustment during loaddropping. Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 101, Chicago, IL (1995).
105. **Aruin A.S.**, Latash M.L.: The role of the prime muscle group in feed-forward postural adjustment during velocity independent perturbations. Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 102, Chicago, IL (1995).
106. **Aruin A.S.**, G. Almeida & Latash M.L.: Feed-forward postural reactions in Down syndrome in a two-joint motor task. Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 103, Chicago, IL (1995).
107. **Aruin A.S.**, G. Almeida & Latash M.L.: Do predictable and self-inflicted perturbations necessitate anticipatory postural adjustments in Down syndrome? Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 104, Chicago, IL (1995).
108. **Aruin A.S.**, Latash M.L., Nicholas J.J., F. Davis & D Stefoski: Portable device for examination of gait in multiple sclerosis patients. Abstracts of the 12<sup>th</sup> Annual Scientific Symposium of Rush University, 105, Chicago, IL (1995).
109. **Aruin A.S.**, Latash M.L.: Motor action and predictability of perturbation in anticipatory postural adjustments. 19<sup>th</sup> Annual Meeting of the American Society of Biomechanics, 59-60, Stanford, CA (1995).

110. Latash M.L., **Aruin A.S.**, Neiman I, & Nicholas J.J.: Feed-forward postural reactions in patients with Parkinson's disease in a two-joint tasks. Conference in Biomechanics dedicated to the memory of N. A. Bernstein Vol. 1, p. 209, Gorkii, Russia (1994).
111. Latash M.L., **Aruin A.S.**, Neyman I, Nicholas J.J., & Shapiro M.B.: Feed-forward postural control in Parkinson's disease. Abstracts of the 11<sup>th</sup> Annual Scientific Symposium of Rush University, 109, Chicago, IL (1994).
112. **Aruin, A.S.**, Nicholas J.J., Gottlieb G.L., Lee K.C., & Latash M.L.: Postural adjustments during dropping and catching weights. Abstracts of the 11<sup>th</sup> Annual Scientific Symposium of Rush University, 107, Chicago IL (1994).
113. **Aruin A.S.**, Latash M.L, Shapiro M.B.: Polyfunctionality of postural muscles in feed-forward postural reactions. Abstracts of the 11<sup>th</sup> Annual Scientific Symposium of Rush University, 108, Chicago, IL (1994).
114. Shapiro M.B., **Aruin A.S.**, & Latash M.L.: EMG patterns during fast movements in a joint of a two-joint limb segment. Abstracts of the 11<sup>th</sup> Annual Scientific Symposium of Rush University, 21, Chicago, IL (1994).
115. Latash M.L., **Aruin A.S.**, Shapiro M.B., Neyman I, Nicholas J.J.: Feed-forward postural control in multi-joint movements. Abstracts of the International Conference "Neural Prostheses: Motor System IY," p. 21. July 23-28 Columbus, OH (1994).
116. Shapiro M.B., **Aruin A.S.**, Latash M.L.: Muscle activation patterns during fast voluntary movements in a joint of a two-joint limb segment. Abstracts of the International Conference "Neural Prostheses: Motor System IY," p. 21. July 23-28. Columbus, OH (1994).
117. **Aruin A.S.**, Latash M.L.: Directional specificity of postural muscles during fast arm movements. Proceedings of the 18<sup>th</sup> Annual Meeting of the American Society of Biomechanics, 169-170, Columbus, OH (1994).
118. Shapiro M.B., **Aruin A.S.**, Latash M.L.: Postural synergies during fast movements in a joint of two-joint limb segment. Proceedings of the 18<sup>th</sup> Annual Meeting of the American Society of Biomechanics, 212. Columbus, OH (1994).
119. **Aruin A.S.**, Latash M.L., Neyman I. & Nicholas J.J.: Postural adjustment during wrist and elbow movements in patients with Parkinson's disease. Abstracts of the 24<sup>th</sup> Annual Meeting Society for Neuroscience, 1779, Miami, FL (1994).

120. Almeida G.L., **Aruin A.S.** & Latash M.L.: Organization of a simple, two-joint synergy in individuals with Down syndrome. In: Latash M.L. (Ed.) "Motor Control in Down - Syndrome - II," 10-15, Rush University, Chicago, IL (1994).
121. **Aruin A.S.**, Almeida G.L. & Latash M.L.: Anticipatory postural adjustments during predictable and self-inflicted perturbations in Down syndrome. In: Latash M.L. (Ed.) "Motor Control in Down Syndrome-II," 28-33, Rush University, Chicago, IL (1994).
122. **Aruin, A.S.**, Nicholas J.J., Gottlieb G.L., Lee K.C., & Latash M.L.: Anticipatory reactions during dropping and catching weights. Proceedings of the American Society of Biomechanics, 55-56, Iowa (1993).
123. **Aruin, A.S.**, Nicholas J.J., Gottlieb G.L., & Latash M.L.: Anticipatory postural reactions while catching and dropping weights. Abstracts of the 55<sup>th</sup> Annual Assembly of American Academy of Physical Medicine & Rehabilitation, 112, Miami, FL (1993).
124. **Aruin, A.S.**: Damping of the striking effect in locomotion. In Abstracts of the First World Congress on Biomechanics, San Diego CA, V. 1, 93 (1990).
125. **Aruin, A.S.**: Biomechanics of heavy manual labor while standing. In: Proceedings of 4<sup>th</sup>All-Union Conference on Perspective of Development of Ergonomic Biomechanics, 4-31, Moscow- Sevastopol, Ukraine (1990).
126. **Aruin, A.S.**: Damping of striking effect in locomotion. First Congress of Biomechanics, August 30- September 4, 2009, La Jolla, California, USA
127. **Aruin, A.S.** Biomechanics of heavy manual labor while standing. In: Proceedings of 4<sup>th</sup>All-Union Conference on Perspective of Development of Ergonomic Biomechanics, 4-31, Moscow- Sevastopol, Ukraine (1990).
128. Mirtov, J.N., **Aruin, A.S.**: Ergonomic principles of elaboration of an alphanumeric keyboard. Ergonomics and Social Orientation of Progress. p. 110-111. Moscow (1989).
129. **Aruin, A.S.**: Ergonomic biomechanics of manual equipment. In: Abstracts of the 4<sup>th</sup> All-Union Conference on Biomechanics of Sports, 8-10. Chernigov, Ukraine (1989).
130. Mirtov J.N., **Aruin, A.S.**: Biomechanical and ergonomic foundations of a keyboard design. In: Transactions of the 1<sup>st</sup> All-Union Conference on Perspectives of Development of Ergonomic Biomechanics, 140-168, Moscow- Sevastopol, Ukraine (1988).
131. **Aruin, A.S.**, Prilutsky, B.I.: Optimization of arm working movements. In: Transactions of the 1<sup>st</sup> All-Union Conference on Perspectives of Development of Ergonomic

- Biomechanics, 4-19, Moscow- Sevastopol, Ukraine (1988).
132. Kopilov D.B. **Aruin, A.S.**: Biomechanical approach in computer-aided design of the work place. In: Transactions of the 1<sup>st</sup> All-Union Conference on Perspectives of Development of Ergonomic Biomechanics, 72-81, Moscow- Sevastopol, Ukraine (1988).
133. Mirtov, J.N., **Aruin, A.S.**: A new alphanumeric keyboard for the personal computer. Ergonomics of External Devices for Computers. Abstracts of the All-Union Conference, 91-92. Orel, USSR (1988).
134. **Aruin, A.S.**: Ergonomical aspects in the biomechanics of interaction with supports. 5<sup>th</sup> International Symposium of Biomechanics in Sport, Athens, Greece (1987).
135. **Aruin, A.S.**, Zatsiorsky, V.M. & Prilutsky, B.I.: Extension of the human lower extremity muscles as a function of a joint angle. Proceeding of Conference Dedicated to 150<sup>th</sup> Birthday of Lesgaft, 161. Leningrad, USSR (1987).
136. **Aruin, A.S.**, Sazonov, B.P.: The effect of different working postures on loading of the lower back, Problems of Biomechanics in Sports. All-Union Conference, 8-9, Moscow (1987).
137. **Aruin, A.S.**, Prilutsky, B.I.: Prediction of changes in length of different heads of the triceps surae muscle using the angles in the ankle and knee joints. 11<sup>th</sup> International Congress of Biomechanics, 16. Amsterdam, Netherlands (1987).
138. **Aruin, A.S.**, Zatsiorsky, V.M., Koretsky, A.V., Potjemkin, B.A.: Investigation of absorbing properties of shoes and their influence on the human body. 5<sup>th</sup> National Congress on Theoretical and Applied Mechanics, 349. Varna, Bulgaria (1985).
139. **Aruin, A.S.**: Modern problems of ergonomic biomechanics. Proceeding of the 30<sup>th</sup> International Wissenschaftliher Kollokvium, Technische Hochschule Ilmenau, Ilmenau, Germany (1985).
140. **Aruin, A.S.**: Biomechanical foundation of development of equipment for personal protection. All-Union Conference Health and Professional Ability of a Human, 24. Moscow, (1985).
141. **Aruin, A.S.**, Zatsiorsky, V.M. & Prilutsky, B.I.: The "biomechanical" method used for determining the arms of muscular forces. 10<sup>th</sup> International Congress of Biomechanics, 16. Umea, Sweden (1985).
142. **Aruin, A.S.**: Biomechanical aspects of robotics. Proceeding of the 28<sup>th</sup> International

Wissenschaftliher Kollokvium Technische Hochschule Ilmenau, 241-243 Ilmenau, Germany (1983).

143. Averkovich, N.V., **Aruin, A.S.**, Beletsky.: A technique for investigation of the characteristics of movement of athletes. Electronics and Sports-VII, 121-123. Tula, USSR (1983).
144. **Aruin, A.S.**: A method for determining spring capacities of the foot. 7<sup>th</sup> International Congress of Biomechanics, 35. Nagoya, Japan (1981).
145. Zatsiorsky, V.M., **Aruin, A.S.**, Prilutsky B. & Raitsin, L.M.: Biomechanical Characteristics of Human Body. In: International Symposium on Biomechanics of Sport, 4-6 December, 1980. Koln. Germany
146. **Aruin, A.S.**, Zatsiorsky, V.M., Panovko, G.J., & Raitsin, L.M.: The investigation of the biomechanical properties of the lower extremities using the vibration test. In: Problems of Biomechanics. Abstracts of the 2<sup>nd</sup> All-Union Conference.35-37, Riga, Latvia (1979).
147. **Aruin, A.S.**, Zatsiorsky, V.M.: A method for evaluating of the spring function of the foot. In: Proceedings of the 5<sup>th</sup> All-Union Seminar Physical Methods and Problems of Metrology in Biomedical Measurements, 189-190. Moscow (1978).
148. **Aruin, A.S.**, Raitsin, L.M. & Schirkovets, E.A.: Measurements of the efficiency of muscle work. In: Proceedings of the 4<sup>th</sup> All-Union Seminar Physical Methods and Problems of Metrology in Biomedical Measurements, 162-163. Moscow (1976)
149. **Aruin, A.S.**: Mechanical properties of the flexors of the foot. In: Abstracts of the 2<sup>nd</sup> All-Union Conference Problems of Biomechanics of Sports, 8-9. Kiev, Ukraine (1976).
150. **Aruin, A.S.**, Averkovich, N.V., & Kholoptsev, V.I.: Optimization of the educational and training processes. Physical Education in Universities. Abstracts of the All-Russian Conference, 117-118. Krasnodar, Ukraine (1976).
151. **Aruin, A.S.**: Method of investigation of the mechanical properties of muscles. In: Proceedings of the 3<sup>rd</sup> All-Union Seminar Physical Methods and Problems of Metrology of Biomedical Measurements, 120-122. Moscow (1974).
152. **Aruin, A.S.**: Investigation of the mechanical properties of muscles of the human lower extremities. In: All-Union Conference of Biomechanics of Sport, 18. Moscow (1974).
153. **Aruin, A.S.**, Averkovich, N.V., & Kholoptsev, V.I.: Device for training of wrestlers. Electronics and Sports-III. Abstracts of the All-Union Conference, 74-75. Leningrad,

USSR, (1972).

154. **Aruin, A.S.**, Kulik, N.G., & Kholoptsev, V.I.: Digital storage of pulse. Electronics and Sports-III. Abstracts of the All-Union Conference, .52-53. Leningrad, USSR (1972).
155. **Aruin, A.S.**, Averkovich, N.V, Matchin, A.M. Device for physiological studies in sports. In: Proceedings of the All-Union Conference Theory and Practice in Designing of Devices, Apparatus, and Systems, 60-61. Moscow, USSR (1972).

### SYMPOSIA

Aruin AS. Novel Approach to Pregait Balance Rehabilitation in Individuals with Acute Stroke. Marianjoy Research Symposium, March 22, 2013

Aruin AS. Sensory Augmentation to Improve Balance and Walking in Individuals with Peripheral Neuropathy. 2<sup>nd</sup> International Symposium on Gait and Posture in Multiple Sclerosis: Interventions for gait & balance in MS. Portland OR, October 19-20, 2012

Aruin AS. AFOs: Proprioceptive Inputs and Balance Implications. American Academy of Orthotists and Prosthetists 38<sup>th</sup> Annual Meeting and Scientific Symposium. Atlanta, March 23, 2012

Aruin AS. The Effects of AFOs on Balance. American Academy of Orthotists and Prosthetists' One Day Seminar for the Certificate Programs for Professional Development. Chicago, October 28, 2011

Aruin AS. AFOs: Proprioceptive Inputs and Balance Implications. 10<sup>th</sup> State-of-the-Science Conference of the American Academy of Orthotists and Prosthetists, June 22-24, 2010. Chicago, IL.

Aruin AS. AFOs: Proprioceptive Inputs and Balance Implications. Marianjoy Research Symposium, September 12, 2010.

Aruin AS. Finger touch-related minimization of grip force. Pennsylvania State University Action Club, State College, September 26, 2008

Aruin AS. Balance control after stroke: New approaches in assessment and rehabilitation. Neurorehabilitation Symposium, Chicago, October 10-11, 2008

Aruin AS. Biomechanical aspects of rehabilitation after a stroke: improvement of stance and



Gait. Marianjoy Research Symposium, June 3, 2008

Aruin AS. Enhancement of automatic postural responses in individuals with diabetic peripheral neuropathy. Marianjoy Research Symposium, December 13, 2006

Aruin AS. Feed-forward postural control in health and disease. Invited speaker at the Symposium “Balance Disorders: Recent Advances & Implications for Patient Management,” NeuroCom International, Chicago, April 27, 2006

Aruin AS. Control of posture in health and disease. Invited speaker at the 14<sup>th</sup> Annual Conference of the Neuro-Optometric Rehabilitation Association (NORA), Chicago, March 2005.

Aruin A, Campbell S, Hasan Z, Pai C. Dealing with movement perturbation: Adaptations across the life span. Invited speaker at Annual Conference and Exposition of the American Physical Therapy Association, Chicago, June, 2004.

Aruin AS. Anticipatory postural adjustments: What we know and what we don't. Invited speaker International Congress Movement, Attention & Perception, Poitiers, France, 2002.

Aruin AS. Step width technique in the rehabilitation of stroke patients. Invited speaker. International Conference From Basic Motor Control to Functional Recovery, Varna, Bulgaria, 1999.

Aruin AS. Anticipatory postural adjustments in health and disease.” Invited speaker at III International Congress of Motor Rehabilitation, Brazil, October 5-8, 1998.

Aruin AS. Anticipatory postural adjustment during predictable and self-inflicted perturbations in Down syndrome. Invited speaker. International Symposium Motor Control in Down Syndrome-II, Chicago, 1994.

Aruin AS. Biomechanical and ergonomic foundations of keyboard design.” Invited speaker. 5<sup>th</sup> All-Union USSR Conference on Perspectives of Development of Ergonomic Biomechanics. Sevastopol, Ukraine, 1991

Aruin AS. Biomechanics of heavy manual labor. 4<sup>th</sup> All-Union USSR Conference on Perspectives of Development of Ergonomic Biomechanics. Sevastopol, Ukraine, 1990

Aruin AS. Ergonomic aspects of biomechanics of walking and running.” Invited speaker. 3rd All-Union Conference on Perspectives of Development of Ergonomic Biomechanics. Sevastopol, Ukraine, 1989

Aruin AS. Simulation of the human body in computer-aided design.” Invited speaker. 1<sup>th</sup>

International Symposium on Computer Simulation in Biomechanics, Warsaw, Poland, 1988.

### GRANTS AWARDED

- Enhancement of Anticipatory Postural Control in Individuals with MS  
(Principal Investigator-P.I.)  
*National Multiple Sclerosis Society, 2016-2017*
- Advanced Training in Translational and Community-Engaged Scholarship to Improve Community Living and Participation for People with Disabilities.  
Co-Principal Investigator (Y. Balkazar P.I.)  
*NIDRR/U.S. Department of Education, 2015-2020*
- Discomfort-induced approach to enhance gait rehabilitation in individuals with stroke  
(Principal Investigator-P.I.)  
*American Heart/Stroke Association 2014-2017*
- Design and Optimization of Gait Performance Enhancing Innersole  
(Principal Investigator-P.I.)  
*The UIC Chancellor's Proof-of-Concept (POC) Award, 2014-2015*
- Anticipatory Postural Control in Individuals with Multiple Sclerosis  
(Principal Investigator-P.I.)  
*National Multiple Sclerosis Society, 2013-2014*
- Rehabilitation Research Training to Enhance Functional performance in MS  
(Principal Investigator-P.I.)  
*National Multiple Sclerosis Society, 2012-2017*
- Translational and Transformational Research to Improve Outcomes for Persons with Disabilities  
Co-Principal Investigator (T. Heller P.I.)  
*NIDRR/U.S. Department of Education, 2011-2016*
- Enhancement of postural control in individuals with stroke-related asymmetries  
Mentor (N. Kanekar P.I.)  
*American Heart/Stroke Association 2011-2013*

- Effects of the Ossur AFO Dynamic and a custom fabricated Polymer AFO on the gait of acute hemiplegic CVA subjects. Consultant (J. Wening P.I.)  
*Orthotic and Prosthetic Education and Research Foundation (OPERF) 2010-2012*
- The Role of Anticipatory Postural Adjustments in Balance Control of Older Adults  
(P.I.)  
*NIH, National Institute of Child Health & Human Development, 2011-2013*
- Weight Supported Pre-Gait Balance Rehabilitation in Acute Stroke Patients  
*Research Retirement Foundation, 2008-2010*  
(P.I.)
- Roles of Auxiliary Sensory Cues on Balance in Peripheral Neuropathy  
(P.I.)  
*NIH, National Institute of Child Health & Human Development, 2007-2010*
- “Enhancement of Grip Force Control in Individuals with Multiple Sclerosis.”  
(P.I.)  
*National Multiple Sclerosis Society, 2006-2008*
- “Advanced Interdisciplinary Postdoctoral Training in Transitional and Transnational research to Improve Vocational Outcomes for Persons with Disabilities.”  
(Kielhofner G. P.I.)  
*NIDRR/U.S. Department of Education 9/1/06- 8/30/11*
- “Compelled Body Weight Therapy in Individuals with Stroke Related Hemiparesis”  
(P.I.)  
*NIH, National Institute of Child Health & Human Development, 2006-2010*
- "The Organization of Anticipatory Postural Adjustments"  
(P.I.)  
*NIH, National Center for Medical Rehabilitation Research, 1998-2005*
- “Modulation of anticipatory postural adjustments in individuals with Parkinson Disease.”  
(P.I.)  
*UIC, Grant from the College of Applied Health Science, 2001*
- “Restoration of Function in Neurological Impairment” (Network Scientist.)  
(W. Z. Rymer P.I.)  
*NIH, National Center for Medical Rehabilitation Research, 2000-2004*

- "Step Width Feedback in Rehabilitation of Stroke Patients" (P.I.)  
*Dr. Scholl Foundation, 2000*
- "The Effect of Ankle Foot Orthoses on Balance of Patients with Diabetic Neuropathy" (P.I.)  
*Marianjoy Rehabilitation Hospital and Clinics, 1999-2000*
- "The Effect of Isometric Abdominal Exercises on the Effectiveness of Treatment of Low- Back Pain" (P.I.)  
*Marianjoy RehabLink, 1999-2000*
- "Development of a Clinical Tool to Improve Motor Recovery in Patients with Step Width Deficit" (P.I.)  
*Marianjoy Rehabilitation Hospital and Clinics, 1999*
- "Bimanual Coordination in the Neurologically Impaired" (P.I.)  
*Marianjoy Rehabilitation Hospital and Clinics, 1999-2000*
- "Compelled Weight Bearing in Stroke Patients" (P.I.)  
*Marianjoy Rehabilitation Hospital and Clinics, 1998-1999*
- "Anticipatory Postural Reactions in Below Knee Amputees" (P.I.)  
*Rush University Committee on Research, 1995*
- "Biomechanical Foundations of Human Environmental Design" (P.I.)  
*USSR State Committee for Higher Education, 1990-1992*
- "Laser Method of Measuring Athletes' Movements" (P.I.)  
*The Committee of Physical Education and Sports under the Council of Ministers of the USSR, 1988-1990*
- "Development of Stereo-Photo Method of Recording Movements" (P.I.)  
*The Committee of Physical Education and Sports under the Council of Ministers of the USSR, 1983-1984*
- "Method and Apparatus for Recognition of Spoken Words" (P.I.)  
*The Institute of Radio Technology of the USSR Academy of Science, 1969-1970*

**TEACHING**

- Control of Posture and Locomotion. Graduate course. *University of Illinois at Chicago, IL, 2000, 2004, 2006, 2008, 2012, 2014, 2016*
- Instrumentation for Motor Control Research- KN/PT 574. Lecture for graduate students, *University of Illinois at Chicago, IL, November 8, 2012*
- Motor Control. Doctor of Physical Therapy (DPT) course. *University of Illinois at Chicago, IL, 2011, 2012, 2013, 2014, 2015, 2016*
- Posture and Movement Across the Lifespan. DPT course. *University of Illinois at Chicago, IL, 2009, 2010*
- Gait Analysis: Technology & Clinical applications. Lecture for Physical Medicine & Rehabilitation medical residents. *Marianjoy Rehabilitation Hospital, Wheaton, IL, 2010*
- Instrumentation for Motor Control Research- KN/PT 574. Lecture for graduate students, *University of Illinois at Chicago, IL, November 4, 2010*
- Biophysics. DPT course. *University of Illinois at Chicago, IL, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011*
- Evidence-based Medicine in Physical Medicine and Rehabilitation. Lecture for Physical Medicine & Rehabilitation medical residents. *Marianjoy Rehabilitation Hospital, Wheaton, IL, 2007*
- Research Principles and Experiment Design, Basic Bio-statistics. Lectures for Physical Medicine & Rehabilitation medical residents. *Rush-Presbyterian St. Luke's Medical Center, Chicago, IL, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010*
- Research Principles and Experiment Design, Basic Bio-statistics. Lectures for Physical Medicine & Rehabilitation medical residents. *Marianjoy Rehabilitation Hospital, Wheaton, IL, 2003*
- Seminar in Physical Therapy. Graduate course. *University of Illinois at Chicago, IL, 2000, 2001, 2002, 2003, 2000, 2005, 2006, 2007*
- Kinesiology. Lectures for graduate students. *University of Illinois at Chicago, IL, 2000, 2002*
- Biomechanics. Lectures for Physical Medicine & Rehabilitation medical residents of *Rush Medical College, Loyola University, and the Rehabilitation Foundation, Chicago, IL, 1999,*
- Research Methods. Lectures for Physical Medicine & Rehabilitation medical residents. *Rehabilitation Foundation, Chicago, IL, 1998-1999*
- Motor Control. Graduate course (substitute). *Pennsylvania State University, PA, 1996*
- Kinesiology. Lectures for Physical Medicine & Rehabilitation medical residents, *Rush-Presbyterian St. Luke's Medical Center, Chicago, IL, 1995*
- Ergonomic Biomechanics. *Central Institute of Physical Culture, USSR, 1987-1991*
- Occupational Biomechanics. *Institute of Aeronautical Engineering and Institute of Electronics and Automation. USSR, 1986-1991*
- Biomechanical Aspects of Ergonomics. *Moscow Institute of Electronic Engineering, USSR, 1985 –1990*

- Medical and Biological Foundations of Exercise and Sport Science. *Moscow Institute of Electronic Engineering, USSR, 1979 -1992*
- Biomechanics. Graduate Course. *Central Institute of Physical Culture, USSR, 1973-1978*

### GRADUATE STUDENTS SUPERVISION

- Ph.D. Thesis advisor (B. Chen). Rehabilitation Sciences. University of Illinois at Chicago, IL, 2013-present
- Ph.D. Thesis advisor (K. Mehendale) Rehabilitation Sciences. University of Illinois at Chicago, IL, 2016-present
- PhD Thesis advisor (C. Ma), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2015-present
- MS Thesis advisor (E. Kuruk), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2015-present
- MS Thesis advisor (N. Goyal) Rehabilitation Sciences. University of Illinois at Chicago, IL, 2015-present
- MS advisor (Y. Zhao), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2013-present
- MS Thesis advisor (S. Jagdhane), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2013-2015
- Ph.D. Thesis committee member (Jeremy Eagles, Bioengineering). Northwestern University, IL, 2011-2015
- MS Thesis advisor (C. Ma), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2013-2015
- MS Thesis advisor (S. Oludare), Rehabilitation Sciences. University of Illinois at Chicago, IL, 2014-2016
- Ph.D. Thesis committee chairman and advisor (Kanekar). Rehabilitation Science. University of Illinois at Chicago, IL, 2008-2013
- Ph.D. Thesis committee chairman and advisor (Mohapatra). Rehabilitation Science. University of Illinois at Chicago, IL, 2009- 2012
- Ph.D. Thesis committee chairman and advisor (Girolami). Kinesiology. University of Illinois at Chicago, IL, 2003- 2012
- Ph.D. Thesis committee chairman and advisor (X. Li), Bioengineering. University of Illinois at Chicago, IL, 2004-2008
- Ph.D. Thesis committee member (Dokka, Bioengineering). University of Illinois at Chicago, IL, 2007-2009
- Ph.D. Thesis committee member (Hurt, Kinesiology), University of Illinois at Chicago, IL, 2008-2011
- MS Thesis committee chairman and advisor (B. Chen). Rehabilitation Sciences. University of Illinois at Chicago, IL, 2010- 2013

- MS Thesis committee chairman and advisor (N. Panwalkar). Rehabilitation Sciences. University of Illinois at Chicago, IL, 2009- 2013
- MS Thesis committee chairman and advisor (K. Mehendale). Rehabilitation Sciences. University of Illinois at Chicago, IL, 2010- 2013
- MS Thesis committee chairman (J. Xaygnaraj). Bioengineering. University of Illinois at Chicago, IL, 2010- present
- MS Thesis committee chairman and advisor (Delholm, Shenoy, Kamdar, Joshi, Iyengar, Kanekar). Physical Therapy. University of Illinois at Chicago, IL, 2000- 2008
- DPT students advisor (4-5 per year) 2003-present
- Senior design project supervisor (Bansal, Garcia, Stevens, Wong), Department of Bioengineering, University of Illinois at Chicago, IL, 2004-2005
- Ph.D. Thesis committee member (Slijper), Pennsylvania State University, PA, 1998-2002
- MS Thesis committees member for a number of students (i.e. Moore, Bioengineering, Kale, Physical Therapy), University of Illinois at Chicago, IL, 2000- 2008
- Supervisor of Physical Medicine & Rehabilitation medical residents working on research projects, 1998 – present
- Consultant for the Northern Illinois University physical therapy and electrical engineering students on research, 1997-2000
- Supervised/advised a large number of graduate and undergraduate students working on Master's or Doctoral Thesis and research projects, Moscow Institute of Electronic Engineering, Central Institute of Physical Culture, Moscow, USSR (1976-1992). Two graduate students received National Gold Medals for the Best Student Thesis Project in the Natural, Technical, and Social Fields in 1977

### **POSTDOCS AND MEDICAL RESIDENTS SUPERVISION**

- Sarmistha Chaidhuri, MD. 1998-2000. Marianjoy Rehabilitation Hospital
- Gianna Rodriguez, MD. 1999-2001. Rush Medical College
- Takako Shiratori, PhD. 2001-2004. University of Illinois at Chicago
- Marcio J. Santos, PhD. 2006-2008. University of Illinois at Chicago
- Vennila Krishnan, PhD. 2009-2012. University of Illinois at Chicago
- Ravi Kasi, MD. 2010-2011. Rush University
- Hirohita Ido, PhD. 2011-2012. University of Illinois at Chicago
- Yun-Ju Lee, PhD. 2012- 2015. University of Illinois at Chicago
- Mohan Ganesan, PhD. 2012-2016t. University of Illinois at Chicago
- Yunju Lee, PhD 2016-present. University of Illinois at Chicago

### **PROFESSIONAL SERVICES**

*Committees*

- Member of the Institutional Review Board, Marianjoy Rehabilitation Hospital 2002- 2016
- Chairman of the Institutional Review Board, Marianjoy Rehabilitation Hospital 2003-2004
- Member of the Education Committee, Rehabilitation Foundation, 1998-2000
- Member of the Scientific Review Committee, Marianjoy Rehabilitation Hospital, 1997-2002
- Member of the Master & Doctoral Thesis Committees in different universities in the former USSR, 1983-1992
- Senator. UIC Senate, 2010-2013
- Member of the UIC Senate Committee on Student Affairs, 2010-2013

*Conferences & Symposia Organizer*

- Member of the Organizing Committee. Seventh International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 2010
- Member of the Organizing Committee. Sixth International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 2009
- Member of the Organizing Committee. Fifth International Conference “From Basic Motor Control to Functional Recovery.” Sofia, Bulgaria, September 2007
- Member of the Organizing Committee. Fourth International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 21-25, 2005
- Member of the Scientific Committee. XVIIth Conference of International Society for Posture and Gait Research. Marseille, France, May 29- June 2, 2005
- Member of the Organizing Committee. Third International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 20-25, 2003
- Section Chair. Second International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 9-15, 2001
- Section Chair. International Conference “From Basic Motor Control to Functional Recovery.” Varna, Bulgaria, September 22-26, 1999
- Chairman of the Medical Resident’s Symposium on Research in Physical Medicine & Rehabilitation. Wheaton, Illinois, December 16, 1998
- Co-Chairman of the Symposium “Advances in Motor Rehabilitation.” Lisle, Illinois, June 19, 1998
- Chairman of the Organizing Committee of the 5<sup>th</sup> All-Union Conferences “Perspective of Development of Ergonomic Biomechanics.” Sevastopol, Ukraine, 4-8 October, 1990
- Chairman of the Organizing Committee of the 4<sup>th</sup> All-Union Conferences “Perspective of Development of Ergonomic Biomechanics.” Sevastopol, Ukraine, 3-7 October, 1989
- Section Chair, 1<sup>st</sup> International Symposium on Computer Simulation in Biomechanics, Warsaw, Poland, 1988



- Vice-Chairman of the Organizing Committee of the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> All-Union Conferences “Perspectives of Development of Ergonomic Biomechanics.” Sevastopol, Ukraine, 1986, 1987, 1988

### *College and University Service*

- Director of Graduate Studies, PhD program, Rehabilitation Sciences, AHS college 2015 - present
- Campus Research Board 2005 - present
- Executive Committee 2000 - 2005, 2010
- Promotion and Tenure Committee 2000 - present
- MD/PhD Training Program 2003 - present
- Interdisciplinary Training Program in Neuroscience 2003 - present
- Interdisciplinary PhD Program in Disability Studies 2000 – present
- AHS Information Technology committee 2009- 2010
- UIC Senator 2010- 2013
- UIC Faculty Senate Committee on Student Affairs 2010- 2013
- PhD in Rehabilitation Science program. Curriculum Committee member 2010- present
- Task force developing a new college-wide BS program in Rehabilitation Sciences 2013
- Chairman. Tenure Track faculty search committee. PT Department, UIC. 2014
- Director of PhD Program in Rehabilitation Sciences 2015- present

### *Department Service*

- Promotion and Tenure Committee 2000 - present
- Director of Graduate Studies 2006 - present
- Space Committee 2003 – 2009, 2012-present
- Admission Committee, DPT 2004 - 2005
- Faculty Advisory Council 2004 – 2005, 2009, 2010, 2013, 2014
- IRB chair 2006 - 2014
- Graduate Admission Committee 2000 – present
- Faculty Search Committee 2008, 2010, 2011, 2013, 2014
- Department Head Search Committee 2013

### *Professional Societies*

- Society for Neuroscience 1999 - present

- Neural Control of Movements 1999 - present
- International Society of Motor Control 2003 - present
- American Society of Biomechanics 1994 - present
- International Society for Postural and Gait Research 2005 - present
- Scientific Council for Biomechanics of Russian Academy of Sciences 1986 - 2003

### *Editorial Boards*

- Associate Editor, Journal Motor Control
- Journal of Electromyography and Kinesiology
- Journal of Novel Physiotherapies

### *Manuscript Reviewer*

- Acta Physiologica, 2010
- Applied Biomechanics, 2005
- Archives of Physical Medicine and Rehabilitation, 2005- 2014
- American Journal of Physical Medicine and Rehabilitation, 2010, 2012, 2014
- Brazilian Journal of Medical and Biological Research, 2007
- Brain, 2003
- Gait and Posture, 2004-2005, 2007-2014
- Clinical Neurophysiology, 2005, 2006, 2009-2014
- Clinical Biomechanics, 2005-2013
- Developmental Medicine & Child Neurology – 2009, 2010, 2011
- Disability and Rehabilitation: Assistive Technology, 2011
- Encyclopedia of Biomaterials and Biomedical Engineering, 2005
- Ergonomics, 2013, 2014
- Experimental Brain Research, 2001- 2014
- European Journal of Neuroscience, 2008
- European Journal of Applied Physiology, 2008
- Human Physiology, 1988 – 1991
- International Journal of Therapy and Rehabilitation, 2013
- Neurocase -2010
- Journal of Back and Musculoskeletal Rehabilitation 2012
- Journal of Hand Therapy, 2007
- Journal of Motor Behavior, 2003-2012
- Journal of Neurophysiology, 2003, 2004, 2007-2013
- Journal of Neuroscience Methods, 2009
- Journal of Neurology, 2008, 2014

- Journal of Biomechanics, 2009, 2014
- Journal of Electromyography and Kinesiology, 2008- 2015
- Journal of Neurology, Neurosurgery & Psychiatry, 2005, 2006
- Journal of Novel Physiotherapies, 2012-2014
- Journal of Rehabilitation Research and Development, 2006-2012
- Medicine and Science in Sport and Exercise, 1995, 2004
- Motor Control, 1996-2006, 2007-2013
- Muscle & Nerve, 2000, 2001, 2004
- Neuroscience Letters, 2003-2015
- Neuroscience, 2010
- Perceptual and Motor Skills, 1998, 2012
- Prosthetics & Orthotics International, 2010
- Theory and Practice in Physical Education, 1989-1990
- Topics in Stroke Rehabilitation, 2010-present
- Journal of NeuroEngineering and Rehabilitation, 2014
- International Journal of Therapy and Rehabilitation, 2013-present

### *Grant Reviewer*

- National Institutes of Health (NIH), 2000, 2015, 2016
- National Science Foundation (NSF), 2001
- Campus Research Board, UIC, 2001- 2006
- Fulbright Program in Ukraine, 2005, 2007
- Natural Sciences and Engineering Research Council of Canada- 2006
- National Medical Research Council, Singapore- 2009, 2014
- Association pour la Recherche sur la Sclérose Latérale Amyotrophique et autres maladies du motoneurone (ARSLa). France – 2011
- National Multiple Sclerosis Society. PMCR Study section member, 2012- present
- Swiss National Science Foundation (SNSF). Div. Mathematics, Physical and Engineering Sciences. Swiss - 2014
- Scottish Health Services Population Health Research Committee. UK-2014
- National Multiple Sclerosis Society. FAST FORWARD program. Member-2015
- NIH Special Emphasis Panel: Physiology and Pathobiology of Musculoskeletal, Oral and Skin Systems. Member-2015

### INVENTIONS AND PATENTS

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2. **Aruin AS**, Kanekar N<sup>1</sup>. An aid, methods of using the same, and kits thereof. U.S. Patent Application #13/960,573, filed on August 6, 2013. Pub. No.: US 2014/0033565 A1 Pub. Date: Feb. 6, 2014
3. **Aruin AS**, Kanekar N<sup>1</sup>. Gait performance enhancing innersole and method. UIC Invention Disclosure #2012- DG005 (2012).
4. **Aruin, A.S.** Device and method for motor rehabilitation. UIC Invention Disclosure # 2001- CV47 (2001).
5. **Aruin, A.S.** Apparatus and method for assessment and feedback training of step width coordination. USA Patent # 6,234,982 (2001).
6. **Aruin, A.S.**, Nicholas J. J. Knee and hip exercise device and method. USA Patent # 6,056,675 (2000).
7. **Aruin, A.S.** Leg exerciser and method. USA Patent # 5,879,275 (1999).
8. **Aruin, A.S.**, Raitsin L. M. Method and device for exercising the abdominal muscles. USA Patent # 5,823,913 (1998).
9. **Aruin, A.S.** Pedal assembly. PSU Invention Disclosure #96-1637.
10. **Aruin, A.S.** Leg exerciser. PSU Invention Disclosure #96-1591.
11. **Aruin, A. S.** Foot, ankle, and lower leg exercise system. PSU Invention Disclosure #95-1548.
12. Попов Г.И., Иванов В.В, **Аруин А.С.** Подошва рекуперирующая энергию (Regenerating energy insole). Russian Patent: RU (11) 2009651 (13) C1 (1994).
13. **Aruin, A.S.**, Gerasimenko, V.G., Tuleubaeva, G.F. & Shmeleva E.L. Device for providing stability of the foot. USSR Patent # 1782573 (1992).
14. **Aruin, A.S.**, Gerasimenko, V.G., Tuleubaeva, G.F. & Shmeleva, E.L. Device for training of the disabled persons. USSR Patent # 1761142 (1992).
15. **Aruin, A.S.**, Farber, B.S., Tcherbakov, N.N. & Shmeleva, E.L. Special pliers. Patent USSR # 1731620 (1992).
16. **Aruin, A.S.**, Gerasimenko, V.G., Farber, B.S. & Tuleubaeva, G.F. Device for treatment

- of the vascular edema. USSR Patent # 1731215 (1992)
17. **Aruin, A.S.**, Mirtov, J.N., Shmeleva, E.L. Keyboard. USSR Patent # 1705127 (1991).
  18. НИКИТИН НИКОЛАЙ ГЕОРГИЕВИЧ, ФАРБЕР БОРИС СЛАВИНОВИЧ, ЗАЦИОРСКИЙ ВЛАДИМИР МИХАЙЛОВИЧ, АРУИН АЛЕКСАНДР СЕМЕНОВИЧ. Способ изготовления защитного шлема. USSR Патент SU 1651834
  19. ГЕРАСИМЕНКО ВЛАДИМИР ГЕОРГИЕВИЧ, АРУИН АЛЕКСАНДР СЕМЕНОВИЧ, ФАРБЕР БОРИС СЛАВИНОВИЧ. Настил . USSR Патент SU 1635991
  20. **Aruin A.S.**, Farber B.S., Gerasimenko V.G. & Shmeleva E.L. Device for massage of the extremities. USSR Patent #1629059 (1990).
  21. **Aruin, A.S.**, Gerasimenko, V.G. & Farber, B.S. Hand massager. USSR Patent # 1627178 (1990).
  22. **Aruin, A.S.**, Farber, B.S., Gadatelev, A., Shmeleva, E.L. Method of fabrication of handles. USSR Patent # 1613316 (1990).
  23. **Aruin, A.S.**, Farber, B.S, Duchovskoi SA, Sazonov VP. Belt-corset. USSR Patent # 1621919 (1990).
  24. **Aruin, A.S.**, Gerasimenko, V.G. & Farber, B.S. Hoop for massage. Patent USSR Patent # 1595515 (1990).
  25. **Aruin, A.S.**, Prilutsky, B.I. Method for determining human muscle stiffness and viscosity. USSR Patent #1586680 (1990).
  26. **Aruin, A.S.**, Farber, B.S. & Nikitin, N.G. Orthopedic inner sole. USSR Patent # 1570723 (1990).
  27. **Aruin, A.S.**, Zatsiorsky, V.M. Device for measuring the human body volume, USSR Patent # 1551348 (1989).
  28. Mirtov, J.N., **Aruin, A.S.** Keyboard. USSR Patent # 1518144 (1989).
  29. **Aruin, A.S.**, Zatsiorsky, V.M. Method for determining the human body volume. USSR Patent # 1491448 (1989).
  30. **Aruin, A.S.**, Zatsiorsky, V.M. Method of lowering of fatigue of an operator. USSR

Patent # 1419694 (1988).

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33. **Aruin, A.S.** Device for measuring the parameters of the foot relocation. USSR Patent # 1331489 (1987).
34. **Aruin, A.S.**, Zatsiorsky, V.M. Method for determination of biomechanical characteristics of the musculoskeletal system. USSR Patent # 1327877 (1987).
35. **Aruin, A.S.** Foot arch insole Patent USSR # 1316670 (1987).
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40. **Aruin, A.S.** Method of determining the damping ability of an object. USSR Patent # 137372 (1984).
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42. Krilov, V.B., Lyashukova, S.M., Maksimov, I.B. & **Aruin, A.S.** Device for monitoring the movement of airplanes and transporting vehicles at airports. USSR Patent # 1067759 (1982).
43. Zatsiorsky, V.M., Raitsin, L.M., Balachnitchev, V.V. & **Aruin, A.S.** Device for measuring the characteristics of stride. USSR Patent # 754727 (1980).
44. **Aruin, A.S.**, Averkovich, N.V., & Kholoptsev, V.I. Device for recording rule-breaking phase in athletic walking. USSR Patent # 748471 (1980).

45. Zatsiorsky, V.M., **Aruin, A.S.**, Raitsin, L.M. & Balachnitchev, V.V. Device for measurement of the temporal and linear characteristics of stride. USSR Patent #705978 (1979).
46. **Aruin, A.S.**, Balachnitchev, V.V., Zatsiorsky, V.M. & Raitsin, L.M. Device for control of the crossing of a light border. USSR Patent # 669371 (1979).
47. **Aruin, A.S.** Device for measuring the dimensions of the foot under pressure. USSR Patent #668678 (1979).
48. Zatsiorsky, V.M., **Aruin, A.S.** Method for the examination of the foot. USSR Patent #544842 (1977).
49. **Aruin, A.S.**, Averkovich, N.V. & Kholoptsev, V.I. Stride-meter. USSR Patent # 469053 (1975).

#### **SELECTED WEB-BASED AND PRINTED PUBLICATIONS IN NEWSPAPERS, MAGAZINES, AND INTERVIEWS ON RADIO AND TV PROGRAMS**

“Students’ achievements in research” Higher Education, September 17, 1977

“Success of researchers” Soviet Sport, March 25, 1982

“Ergonomics Biomechanics” Sevastopol Pravda, September 10, 1991

“Unique lab studies human joint, muscle movement” Daily Herald, March 10, 1998

“Open house shows new motion analysis facility” DuPage News, March 11, 1998

“Doctors muscle in on disabilities” Chicago Tribune, May 8, 1998

“Cardinal’s visit lights up Marianjoy patients” The Wheaton Sun, March 25, 1998

“First Person” Chicago Tribune, November 17, 1999

“Gentle Touch May Aid Multiple Sclerosis Patients.” 2009, Medical News Today, October 15, 2009

<http://www.medicalnewstoday.com/articles/167426.php>

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“Multiple Sklerose: Berührung verbessert Motorik.” October 15, 2009, In German:

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“Multiple Sclerosis Patients may be Helped by Gentle Touch” MedIndia, October 15, 2009

<http://www.medindia.net/news/Multiple-Sclerosis-Patients-may-be-Helped-by-Gentle-Touch-59464-1.htm>

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German: [http://www.monstersandcritics.de/artikel/200942/article\\_158515.php/Sanfte-Ber%C3%BChrungen-k%C3%Bnnen-Multiple-Sklerose-Patienten-helfen](http://www.monstersandcritics.de/artikel/200942/article_158515.php/Sanfte-Ber%C3%BChrungen-k%C3%Bnnen-Multiple-Sklerose-Patienten-helfen)

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2010: [http://www.bottomlineSecrets.com/article.html?article\\_id=100001260](http://www.bottomlineSecrets.com/article.html?article_id=100001260)

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July 30, 2010. [http://www.oandp.com/articles/NEWS\\_2010-07-30\\_01.asp](http://www.oandp.com/articles/NEWS_2010-07-30_01.asp)

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