

## 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, 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, 2005 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 to present
- 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 to 2000
- Associate Professor, Department of Physical Medicine & Rehabilitation. Rush 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

- 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
- WOW Award. University of Illinois at Chicago, 2009

### PUBLICATIONS

\* refers to invited publications

1. Santos MJ, Kanekar N, **Aruin AS**. The Role of Anticipatory Postural Adjustments in Compensatory Control of Posture. Journal of Electromyography and Kinesiology. 2009. (in press)

2. Iyengar V, Santos M., Ko M., **Aruin A.** Grip force control in individuals with multiple sclerosis. Neurorehabilitation and Neurorepairs 2009 Jun 16. [Epub ahead of print]
3. Iyengar V, Santos M., Ko M., **Aruin A.** Effect of contralateral finger touch on grip force control in individuals with multiple sclerosis. Clinical Neurophysiology. 2009 Feb 23. [Epub ahead of print]
4. Iyengar V, Santos M., **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.
5. Kanekar N, Santos MJ, **Aruin AS.** Anticipatory postural control following fatigue of postural and focal muscles. Clinical Neurophysiology. 2008, 119(10):2304-2313.
6. Santos M, **Aruin A.** Timing of the vibration of arm muscles affects grip force control. Journal of Human Kinetics, 2008, 19, 25-38
7. 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
8. Li X, **Aruin A.** The effect of short-term changes in body mass distribution on feed-forward postural control. J Electromyography and Kinesiology 2008 Jul 7. [Epub ahead of print]
9. Li X, **Aruin A.** Anticipatory postural adjustments in conditions of simulated reduced gravity. Gait & Posture, 2008, 28(4):538-544.
10. Zultowski I, **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.
11. Santos M, **Aruin A.** Effects of lateral perturbations and changing stance conditions on anticipatory postural adjustment. J Electromyography and Kinesiology 2008 Jan 29; [Epub ahead of print]
12. Santos M, **Aruin A.** Role of lateral muscles and body orientation in feedforward postural control. Experimental Brain Research, 2008;184(4):547-59
13. Iyengar V, Santos M., **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.

14. Shenoy S., **Aruin A.** Effect of chair design on feedforward postural control in sitting. Motor Control, 2007 11(4): 309-321
15. Li X, 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
16. Li X, **Aruin A.** The effect of short-term changes in the body mass on anticipatory postural adjustments. Experimental Brain Research, 2007, 181(2):333-46.
17. 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
18. 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)
19. **Aruin A.** The effect of asymmetry of posture on anticipatory postural adjustments. Neuroscience Letters. 401(1-2):150-153 (2006)
20. **Aruin A.** Support-specific modulation of grip force in individuals with hemiparesis. Archives of Physical Medicine and Rehabilitation. 86:768-775 (2005)
21. \***Aruin A.** Biomechanics. In: Encyclopedia of Disability, Ed. G. Albrecht, Sage Publications, 2006.
22. Shiratori T, **Aruin A.** Anticipatory postural adjustments associated with rotational perturbations while standing on fixed and free-rotating supports. Clinical Neurophysiology, 115:797-806 (2004)
23. **Aruin A**, Shiratori T. The effect of the amplitude of motor action on anticipatory postural adjustments. Journal of Electromyography and Kinesiology, 14: 455-462 (2004)
24. **Aruin A**, Shiratori T. Anticipatory postural adjustments while sitting: the effects of different leg supports. Experimental Brain Research, 151: 46-53 (2003)
25. **Aruin A.**, Hanke T. & Sharma A. Base of support feedback in gait rehabilitation. International Journal of Rehabilitation Research, 26:309-12 (2003)
26. **Aruin A.** The effect of changes in the body configuration on anticipatory postural

- adjustments. Motor Control, 7: 264-277 (2003)
27. **Aruin A**, Mayka M. & Shiratori T. Could a motor action that has no direct relation to expected perturbation be associated with anticipatory postural adjustments? Neuroscience Letters, 341: 21-24 (2003)
  28. \***Aruin A**. The organization of anticipatory postural adjustments. Journal of Automatic Control, 12: 31-37 (2002)
  29. Slijper H., Latash M., Rao N. & **Aruin A**. Task specific modulation of anticipatory postural adjustments in individuals with hemiparesis. Clinical Neurophysiology, 113: 642-655 (2002).
  30. Rodriguez G, **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).
  31. \***Aruin A**. The biomechanical foundations of a safe labor environment: Bernstein's vision in 1930. Motor Control, 6: 1-18 (2002).
  32. **Aruin A.**, Shiratori T. & Latash M. The role of action in postural preparation for loading and unloading in standing subjects. Experimental Brain Research, 138: 458-466 (2001).
  33. **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).
  34. **Aruin A**. Simple lower extremity two-joint synergy. Perceptual and Motor Skills, 92:563-568 (2001).
  35. **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).
  36. Chaudhuri S., **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).
  37. \***Aruin A.S**. Sports after Amputation. The Encyclopedia of Sports Medicine: Biomechanics in Sport. Blackwell Science/International Olympic Committee Book, p.637-650 (2000).

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39. Rao N., **Aruin A.S.** The effect of ankle foot orthosis on balance impairment. Journal of Prosthetics and Orthotics, 11:15-19 (1999).
40. 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).
41. **Aruin A.S.**, Forrest W.R.& Latash M.L. Anticipatory postural adjustment in conditions of postural instability. Electroencephalography and Clinical Neurophysiology, 109: 350-359 (1998).
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43. **Aruin A.S.**, Almeida G.L. A coactivation strategy in anticipatory postural adjustment in persons with Down syndrome. Motor Control, 2: 178-191 (1997).
44. **Aruin A.S.** Adaptive changes in postural reactions after unilateral leg amputation. Behavioral and Brain Science. 19: 68-69 (1996).
45. **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).
46. **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).
47. **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).
48. **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).
49. Latash M.L., **Aruin A.S.** & Shapiro M. B. The relation between posture and movement: a study of a simple synergy in a two-joint task. Human Movement Science, 14: 79-107

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54. 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).
55. \***Aruin, A.S.** Biomechanical foundations of human environmental design. Teorija i Praktica Fizicheskoj Kulturi, 1: 20-23. (In Russian) (1993).
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58. 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).
59. **Aruin, A.S.** Computer-aided design of the work place. pp 1-17, Kiev: Znanie (in Russian) (1990).
60. **Aruin, A.S.**, Zatsiorsky, V.M. & Potjemkin, B.A. Damping of dynamic loads during locomotion. Modern Problems of Biomechanics, 6: 63-78. (1989).
61. **Aruin, A.S.**, Zatsiorsky, V.M., & Prilutsky, B.I. Arms of forces and elongation of the

- lower extremity muscles at various values of joint angles. Archives of Anatomy, Histology, and Embryology, 6:52- 55 (1988).
62. \***Aruin A.S.** The truth about women's shoe heels. Engineering for youth, 3: 26-28 (in Russian)(1988).
63. Mirtov, J.N., **Aruin, A.S.**: Ergonomic principles of elaboration of an alphanumeric keyboard. pp. 1-27, Moscow: Transactions VINITI, v. 6972 (in Russian) (1988)
64. **Aruin, A.S.**, Prilutsky, B.I. Human body simulation in computer-aided design of workstations, Biology of Sport. 5, Suppl. 1: 199-206 (1988).
65. **Aruin, A.S.**, Zatsiorsky, V.M. & Prilutsky, B.I. The "biomechanical" method used for determining the arms of muscular force, In: B. Johnson (Ed.) Biomechanics Vol X-B, 1117-1121. Human Kinetics Publishers, Champaign, IL (1987).
66. **Aruin, A.S.**, Zatsiorsky, V.M. Perspectives on Development of Ergonomical Biomechanics. Kiev: Znanie (in Russian) (1987).
67. **Aruin, A.S.**, Prilutsky, B.I. Dependence of lengthening of the triceps surae muscle on knee and joint angles. Human Physiology, 13: 105-109 (1987).
68. \*Zatsiorsky, V.M., **Aruin, A.S.** People on the computer screen. Science and Life, 8:54-57 (1987).
69. **Aruin, A.S.**, Zatsiorsky, V.M., Koretsky, A.V. Investigation of shock absorption properties of shoes using vibration tests. Kozevenno-Obuvnaja Promislennost, 4:22-23 (in Russian) (1987).
70. **Aruin, A.S.**, Aktov, A.V. & Koretsky, A.B. Shock absorption during locomotion. In: Trends in Human Biomechanics: Research and Application in Medicine and Surgery, 32-38, Riga: LNIITO (in Russian) (1986)
71. \***Aruin, A.S.** Table according to the height. Health, 11: 29-32, (in Russian), (1986).
72. **Aruin, A.S.**: Biomechanics of computer-aided design of workstations. Automation of design of radio electronic equipment, 3: 81-83 (in Russian) (1986).
73. Zatsiorsky, V.M., **Aruin, A.S.** Ergonomic biomechanics. Science and Life, 3:14-19 (1985).
74. \***Aruin, A.S.** How to not get tired while cooking. Health, 11: 27-28, (in Russian), (1985).

75. **Aruin, A.S.**, Prilutsky, B.I. The relationship of biomechanical properties of muscles to their ability to utilize elastic deformation energy. Human Physiology, 11: 8-12 (1985).
76. **Aruin, A.S.** Aktuelle probleme der ergonomischen biomechanik. (Actual problems of ergonomic biomechanics). Betriebswirtschaftliche und arbeitswissenschaftliche Aspekte der Automatisierung, 30: 187-190 (In German), 1985.
77. \***Aruin, A.S.** Moving without strain. Health, 3: 23-24 (in Russian), (1985).
78. Zatsiorsky, V.M., **Aruin, A.S.**, Prilutsky, B.I., & Chaknasarov, A.I. Determination of arm of the forces exerted by foot muscles using biomechanical methods. Human Physiology, 11: 616-622 (1985).
79. \***Aruin, A.S.** Lifting without strain. Health, 7: 29-31 (in Russian), (1985).
80. Zatsiorsky, V.M., **Aruin, A.S.**, Prilutsky, B.I. & Chaknasarov, A.: Arms of muscular force of the flexor muscles of the foot. Factors Limiting Increased Capacity of Athletes to Work. Moscow, 21-35 (in Russian), (1985).
81. \***Aruin, A.S.**, Salnikova L.S. How to not get tired while doing housework. Health of the People, 120:23-25 (in Greek) (1984).
82. **Aruin, A.S.**, Zatsiorsky, V.M. Biomechanical characteristics of human ankle joint muscles. European Journal of Applied Physiology, 52:400-406 (1984).
83. **Aruin, A.S.**, Zatsiorsky, V.M. Occupational biomechanics of working with a computerized workstation, Moscow: Transactions VINITI, 2599 (in Russian) (1984).
84. **Aruin, A.S.**, Zatsiorsky, V.M. Biomechanics of shoes, Moscow: Transactions VINITI, 5458 (in Russian) (1984).
85. **Aruin, A.S.**, Zatsiorsky, V.M. Ergonomic aspects of biomechanics of man-ground interaction, Moscow: Transactions VINITI, 5533 (in Russian) (1984).
86. **Aruin, A.S.**, Zatsiorsky, V.M. Occupational biomechanics of arm working movements, Moscow: Transactions VINITI, 5684 (in Russian) (1984).
87. \***Aruin, A.S.** Let's talk about walking - How do you do it? Health of the People, 120: 25-26, (in Greek) (1984).
88. **Aruin, A.S.**, Zatsiorsky, V.M. Occupational biomechanics of typing movements,

- Moscow: Transactions VINITI, 1483 (in Russian) (1984).
89. **Aruin, A.S.** & Zatsiorsky, V.M. Ergonomic biomechanics of walking and running. Moscow: GZOLIFK (in Russian) (1983).
  90. Zatsiorsky, V.M., **Aruin, A.S.**, Selujanov, V.N. Mass geometry of the human body (Part 1). Teorie und Praxis der Korper Kultur, 6: 416-423 (in German) (1982).
  91. Zatsiorsky, V.M., **Aruin, A.S.**, Selujanov, V.N. Mass geometry of the human body (Part II). Teorie und Praxis der Korper Kultur, 7: 533-541 (in German) (1982).
  92. Raitsin, L.M., **Aruin, A.S.**, Poltorapavlov, N.V. Method for investigating characteristics of movement of athletes. Teorija i Praktica Fizitcheskoi Kulturi, 12:51-52 (in Russian) (1981).
  93. Zatsiorsky, V.M, **Aruin, A.S.**, Raitsin, L.M. & Panovko, G.J. The determination of the equivalent characteristics of the ankle joint muscles using vibration tests. In: G. Bianchi, K. Frolov & A. Oledzki (Eds.) Man Under Vibration: Suffering and Protection, 166-175. Amsterdam, Elsevier Scientific Publishing (1981).
  94. Raitsin, L.M., **Aruin, A.S.**, & Balachnichev, V.V. Utilization of optical quantum generators (lasers) for controlling of sports technique. Teorija i Praktica Fizitcheskoj Kulturi, 7:49-51 (in Russian) (1980).
  95. **Aruin, A.S.**, Prilutsky, B.I., Raitsin, L.M., & Saveljev, I.A. Biomechanical properties of the muscles and efficiency of movements. Human Physiology, 5: 426-434 (1979).
  96. **Aruin, A.S.**, Zatsiorsky, V.M., Panovko, G.J., & Raitsin, L.M. Equivalent biomechanical characteristics of the ankle joint muscles. Human Physiology, 4: 862-868 (1978).
  97. **Aruin, A.S.**, Zatsiorsky, V.M., Panovko, G.J., & Raitsin, L.M.: A dynamic model of the human body during vibration. Medical Cybernetics, 3: 261-263. Suchumi, Georgia (1978).
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  99. **Aruin, A.S.**, Zatsiorsky, V.M. Determining of damping properties of the foot. Orthopedics, Traumatology and Prosthetics, 6:85- 88 (1978).
  100. **Aruin, A.S.**, Zatsiorsky, V.M. & Raitsin, L.M. Biomechanical properties of muscles of the human lower extremities. Teorija i Praktica Fizitcheskoi Kulturi, 9:8-14

(in Russian) (1977).

101. **Aruin, A.S.**, Zatsiorsky, V.M., & Raitsin, L.M. Investigation of the mechanical properties of the human lower extremity muscles. In: Frolov K (Ed.). Influence of Vibration on the Human Body, 129-132, Moscow: Nauka. (in Russian) (1977).
102. Zatsiorsky, V.M, **Aruin, A.S.**, Raitsin, L.M., Prilutsky, B.I. & Selujanov, V.N. Biomechanical characteristics of the human body. In: W. Bauman (Ed.) Biomechanics and Performance in Sports, 71-84, Schomdorf, Hofman Verlag (1977).
103. **Aruin, A.S.**, Volkov, N.I., Zatsiorsky, V.M. The effect of the elastic muscle force on the efficiency of muscle work. Human Physiology, 3: 420-426 (1977).
104. **Aruin, A.S.**, Raitsin, L.M., & Schirkovets, E.A. Method for investigation of the efficiency of muscular work. Teorija i Praktika Fizicheskoj Kulturi, 5:21-23, (in Russian) (1976).

### BOOKS & TEXTBOOKS

1. **Aruin, A.S.**, Zatsiorsky, V.M.: Ergonomicheskaja Biomekhanika (Occupational Biomechanics), Moscow: Maschinostroenie Publishing House, (in Russian) (1989).
2. **Aruin, A.S.**, Zatsiorsky, V.M. & Prilutsky, B.I.: Morphometry of Muscles. Moscow: GZOLIFK, (in Russian) (1988).
3. **Aruin, A.S.**, Zatsiorsky, V.M.: Ergonomic Biomechanics of Exercise and Sport Science Moscow: GZOLIFK, (in Russian) (1985).
4. Zatsiorsky, V.M., **Aruin, A.S.**, Selujanov, V.N.: Biomechanik des Menschlichen Bewegungsapparates (Biomechanics of the Human Musculoskeletal System), Berlin: Sportverlag, (in German) (1984).
5. Zatsiorsky, V.M., **Aruin, A.S.**, Selujanov, V.N.: Biomechanics of the Human Musculoskeletal System. Moscow: Fizkultura i Sport, (in Russian) (1981).
6. **Aruin, A.S.** & Zatsiorsky, V.M.: Biomechanical Properties of Skeletal Muscles and Tendons. Moscow: GZOLIFK, (in Russian) (1980).

### THESES

1. **Aruin AS.** Biomechanical Foundations of Human Environmental Design. DSc (PhD) Thesis, Institute of Traumatology and Orthopedics, Latvia, 1990.

2. **Aruin AS.** Experimental Study and Modeling of Biomechanical Characteristics of Human Lower Extremities. PhD Thesis, Institute of Artificial Organs and Transplantation, Moscow, USSR, 1978.
3. **Aruin AS.** Apparatus for Recognition of Spoken Words. MS Thesis in Electrical Engineering, Moscow Institute of Electronic Engineering, USSR, 1969.

### CONFERENCE PAPERS

1. Rao N, Nashner L, **Aruin A.** Perceived Body Vertical in Standing Patients with Stroke-Related Visuospatial Deficit. 5th World Congress of the International Society of Physical and Rehabilitation Medicine. Istanbul, June 13-17, 2009.
2. Latash ML, **Aruin AS.** Two functions of anticipatory postural adjustments. ISPGR Satellite Symposium: Basic mechanisms underlying balance control under static and dynamic conditions. Pavia, Italy, June 19-20, 2009
3. **Aruin A,** Rao N, Chudhuri G. Biomechanical aspects of rehabilitation after a stroke: improvement of stance and gait. IX All-Russian Conference on Biomechanics. Nignii Novgorod 20-24 May, 2008
4. **Aruin A,** Rao, N. New approaches in Stroke rehabilitation. International Conference From Basic Motor Control to Functional Recovery. Sofia, Bulgaria, September 30-October 3, 2007
5. Rao N, **Aruin A,** Hasso D, Chaudhuri G, D'Souza K. Gait Assessment in a Clinical Setting During the Initial Fitting of an Ankle-Foot Orthosis in Persons With Acute Stroke. 68 Annual Assembly of American Academy of Physical Medicine and Rehabilitation. September 27-30, Boston. Archives of Physical Medicine and Rehabilitation, Volume 88, Issue 9, September 2007, Page E88
6. Rao N, Nashner L, **Aruin A.** Measurement of Perceived Body Vertical in Patients With Stroke-Related Visuospatial Deficit. 68 Annual Assembly of American Academy of Physical Medicine and Rehabilitation. Archives of Physical Medicine and Rehabilitation, Volume 88, Issue 9, September 2007, Page E101
7. Santos M, **Aruin A.** Activation of lateral muscles prior to multidirectional perturbation in standing. International Conference Progress in Motor Control VI. Santos, Brazil, August 9 - 12, 2007

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9. Santos M, **Aruin A**. Feedforward postural control in standing: role of lateral muscles and body orientation. 2007 Annual Conference of the American Society of Biomechanics, Stanford, CA, August 22-27, 2007
10. Rao N, **Aruin A**. Autonomic Postural Responses in Individual with Peripheral Neuropathy and Ankle-Foot Orthoses. 67<sup>th</sup> Annual Assembly of the American Academy of Physical Medicine and Rehabilitation. Honolulu, HI, November 9-12, 2006
11. Rao N, **Aruin A**, Chaudhuri G, Hasso D, D'Souza K, Carlson C. Autonomic Postural Responses in Individual with Peripheral Neuropathy and Ankle-Foot Orthoses. 67<sup>th</sup> Annual Assembly of the American Academy of Physical Medicine and Rehabilitation. Honolulu, HI, November 9-12, 2006
12. **Aruin A**, Kamdar M. Effect of auxiliary sensory cues on grip force control. Fourth International Conference "From Basic Motor Control to Functional Recovery," 244-252, Sofia, Bulgaria, 21-25 September, 2005(2005).
13. Shiratori T, **Aruin A**. Modulation of anticipatory postural adjustments in case of constant postural perturbation: effect of components of motor action. Abstracts of the XVIIth Conference Postural and Gait Research. Marseille, May 29<sup>th</sup> - June 2nd, 2005. *Gait & Posture*, 2005:21, Suppl.1, S47.
14. Li S, **Aruin A**. The effect of changes in body mass distribution on feed-forward postural control. Proceedings of the 27<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Shanghai, China, September 1-4, 2005, p. 7444-7447
15. Li S, **Aruin A**. Muscle Activity Onset Time Detection Using Teager-Kaiser Energy Operator Proceedings of the 27<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Shanghai, China, September 1-4, 2005, p. 7549-7552
16. **Aruin A**, Campbell S, Hasan Z, Pai C. Dealing with movement perturbation: Adaptation across the life span" Annual Conference of the American Physical Therapy Association (APTA), Chicago, (2004).
17. **Aruin A**. Support specific modulation of grip force in individuals with hemiparesis. Abstracts of the 64<sup>th</sup> Annual Assembly of American Academy of Physical Medicine & Rehabilitation, Chicago, IL (2003).

18. **Aruin A.** Anticipatory postural adjustments: What we know and what we don't. UIC School of Kinesiology Seminar, October 17, (2003).
19. **Aruin A.** Feedforward postural control: What's known and what's not. Third International Conference "From Basic Motor Control to Functional Recovery," 49-59, Varna, Bulgaria, (2003).
20. Shiratori.T, **Aruin.A.S.** Anticipatory postural adjustments associated with rotational perturbations: standing on fixed and free rotating support. International Conference "Progress in Motor Control" 2003, 116, Caen, France, (2003).
21. **Aruin A.** Development of new technologies for motor rehabilitation. UIC Bioengineering Department Seminar, November 15, 2002.
22. **Aruin A.** Anticipatory postural adjustments: What we know and what we don't. International Congress Movement, Attention & Perception 2002, 38. Poitiers, France, (2002).
23. **Aruin A.**, Chaudhuri G., Sharma A. Step width feedback in post stroke gait rehabilitation Improving Quality of Life through Applied Research. MRH Research Symposium 2002, Wheaton, IL (2002).
24. **Aruin A.**, Rao N., Latash M., Slijper H. Modulation of anticipatory postural adjustments in individuals with hemiparesis. Rush University Forum for Research and Clinical Investigation 2002, 29, Chicago, IL (2002).
25. **Aruin A.** Compelled weight bearing in stroke rehabilitation: International Conference "From Basic Motor Control to Functional Recovery II", 393-402, Varna, Bulgaria, (2001).
26. **Aruin A.** The effect of changes in the angular position of the upper body on anticipatory postural: Proceedings of the 11<sup>th</sup> Annual Meeting of the Society of Neural Control of Movement, B-09, Seville, Spain (2001).
27. **Aruin A.S.**, Shiratori T., Latash M.: The role of action in the generation of anticipatory postural adjustments in standing subjects. Abstracts of the 30<sup>th</sup> Annual Meeting Society for Neuroscience, Volume 30, Part 1, p.168, New Orleans, LA (2000).
28. **Aruin A.** Grip forces responses to changes in the provision of support: Proceedings of the 24<sup>th</sup> Annual Meeting of the American Society of Biomechanics, 153-154, Chicago (2000).

29. **Aruin A**, Support-related grip-force adjustments in individuals with hemiparesis: 10<sup>th</sup> Annual Meeting of the Society of Neural Control of Movement, V1, (2000).
30. **Aruin A**, Sharma A. Extrinsic feedback in gait rehabilitation of individuals with hemiparesis. Rush University Forum for Research and Clinical Investigation 2000, 31, Chicago, IL (2000).
31. Rodriguez G., **Aruin A**. The effect of the angled shoe on the symmetry of weight bearing in hemiparetic patients. Rush University Forum for Research and Clinical Investigation 2000, 30, Chicago, IL (2000).
32. **Aruin A**, Chaudhuri G, Hanke T, Harvey R, Rao N. Compelled weight bearing in stroke patients: The effect of lift insert and goal directed balance exercises. International Conference "Progress in Motor Control –II", 34, University Park, PA (1999).
33. **Aruin A**, Hanke T, Sharma A. Step width feedback in the rehabilitation of stroke patients: International Conference "From Basic Motor Control to Functional Recovery," 458-462, Varna, Bulgaria, (1999).
34. **Aruin A**, The effect of a posterior support on anticipatory postural adjustments: 9<sup>th</sup> Annual Meeting of the Society of Neural Control of Movement, S1, (1999).
35. **Aruin A.S.**, M.L. Latash. The effect of magnitude of perturbation on anticipatory postural adjustments. Rush University Research Forum, 174, Chicago, IL (1998).
36. **Aruin A.S.**, Forrest W.R. & M.L. Latash. Anticipatory postural adjustments in conditions of postural instability. Rush University Research Forum 1998, 174, Chicago, IL (1998).
37. Sharma A, Hanke T., & **Aruin A.S**. Restoration of gait in hemiparetic patient by feedback training with step width monitor. Symposium "Advances in Motor Rehabilitation", 17, Lisle, IL 1998.
38. Latash M, **Aruin A.**, Zatsiorsky V. Joint equilibrium trajectories during multi-joint movements. Journal of Sport & Exercise Psychology, 20, Supplement: S42, 1998.
39. Shiratori T, **Aruin A.**, & Latash M. Anticipatory phase of step initiation in Parkinson's disease. Symposium "Advances in Motor Rehabilitation," 18, Lisle, IL 1998.
40. Latash M, **Aruin A.**, Zatsiorsky V. Joint equilibrium trajectories during multi-joint movements. NASPSA Conference, 35, St. Charles, IL (1998).

41. **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).
42. 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).
43. **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).
44. 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).
45. **Aruin A.S.**, F. Davis, D. Stefoski & Nicholas J.J.: Walking patterns in multiple sclerosis. Rush University Research Forum, 99, Chicago, IL (1996).
46. 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).
47. **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).
48. 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).
49. **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).
50. **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).
51. 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).

52. **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).
53. **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).
54. **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).
55. **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).
56. **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).
57. **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).
58. 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).
59. 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).
60. **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).
61. **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).

62. 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).
63. 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 Prosthesis: Motor System IY," 21. Columbus, OH (1994).
64. 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 Prosthesis: Motor System IY," 21. Columbus, OH (1994).
65. **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).
66. 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).
67. **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).
68. 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).
69. **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).
70. **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).
71. **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).
72. **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).

73. **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).
74. 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).
75. **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).
76. 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).
77. **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).
78. 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).
79. 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).
80. **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).
81. **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).
82. **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).
83. **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).

84. **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).
85. **Aruin, A.S.**: Modern problems of ergonomic biomechanics. Proceeding of the 30<sup>th</sup> International Wissenschaftliher Kollokvium, Technische Hochschule Ilmenau, Ilmenau, Germany (1985).
86. **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).
87. **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).
88. **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).
89. 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).
90. **Aruin, A.S.**: A method for determining spring capacities of the foot. 7<sup>th</sup> International Congress of Biomechanics, 35. Nagoya, Japan (1981).
91. **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).
92. **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).
93. **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)
94. **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).

95. **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).
96. **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).
97. **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).
98. **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).
99. **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).
100. **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

“Finger touch-related minimization of grip force” Pennsylvania State University Action Club, State College, September 26, 2008

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

“Biomechanical aspects of rehabilitation after a stroke: improvement of stance and gait”  
Marianjoy Research Symposium, June 3, 2008

“Enhancement of automatic postural responses in individuals with diabetic peripheral neuropathy”  
Marianjoy Research Symposium, December 13, 2006

“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

“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.

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

“Anticipatory postural adjustments: What we know and what we don’t.” Invited speaker at International Congress Movement, Attention & Perception, Poitiers, France, 2002.

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

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

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

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

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

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

“Simulation of the human body in computer-aided design.” Invited speaker at 1<sup>th</sup> International Symposium on Computer Simulation in Biomechanics, Warsaw, Poland, 1988.

### **GRANTS AWARDED**

- Roles of Auxiliary Sensory Cues on Balance in Peripheral Neuropathy  
Principal Investigator (P.I)  
*NIH, National Institute of Child Health & Human Development, 2007-2009*
- Weight Supported Pre-Gait Balance Rehabilitation in Acute Stroke Patients (P.I)

*Research Retirement Foundation, 2008-2010*

- “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.”  
Co-P.I (Kielhofner G. P.I.)  
*NIDRR/U.S. Department of Education, 2006-2011*
- “Compelled Body Weight Therapy in Individuals with Stroke Related Hemiparesis” (P.I.)  
*NIH, National Institute of Child Health & Human Development, 2006-2009*
- "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 (P.I.)  
Parkinson Disease.”  
*UIC, Grant from the College of Applied Health Science, 2001*
- “Restoration of Function in Neurological Impairment” (Network Scientist.)  
*National Institutes of Health (W. Z. Rymer P.I.)*
- "Step Width Feedback in Rehabilitation of Stroke Patients" (P.I.)  
*Dr. Scholl Foundation, 2000*
- “The Effect of Ankle Foot Orthoses on Balance of Patients (P.I.)  
with Diabetic Neuropathy”  
*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.)  
*Russian 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

- Posture and Movement Across the Lifespan. DPT course. *University of Illinois at Chicago, IL, 2009*
- Biophysics. DPT course. *University of Illinois at Chicago, IL, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009*
- 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*
- Research Principles and Experiment Design, Basic Bio-statistics. Lectures for Physical Medicine & Rehabilitation medical residents. *Marianjoy Rehabilitation Hospital, Wheaton, IL, 2003*
- Control of Posture and Locomotion. Graduate course. *University of Illinois at Chicago, IL, 2000, 2004, 2006, 2008*
- 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

### **STUDENT SUPERVISION**

- Director of Graduate Studies, University of Illinois at Chicago, IL, 2006- present
- Ph.D. Thesis committees chairman, University of Illinois at Chicago, IL, 2003- present
- Ph.D. Thesis committees member, University of Illinois at Chicago, IL, 2007-present
- Ph.D. Thesis committee member, Pennsylvania State University, PA, 2000-2002
- MS Thesis committees member, 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 number of graduate and undergraduate students working on Master's or Doctoral Thesis and research projects (1976-1992). Two graduate students received National Gold Medals for the Best Student Thesis Project in the Natural, Technical, and Social Fields in 1977

### **PROFESSIONAL SERVICES**

#### ***Committees***

- Member of the Institutional Review Board, Marianjoy Rehabilitation Hospital 2002-present
- 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
- Ad-hoc member: NIH Study Section-Geriatrics and Rehabilitation Medicine, 2000

### *Conferences & Symposia Organizer*

- 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*

- Campus Research Board 2005 - present

- Executive Committee 2000 - 2005
- 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

*Department Service*

- Promotion and Tenure Committee 2000 - present
- Space Committee 2003 - present
- Admission Committee 2004 - 2005
- Faculty Advisory Council 2004 - 2005

*Professional Societies*

- Society for Neuroscience
- Neural Control of Movements
- International Society of Motor Control
- American Society of Biomechanics
- International Society for Postural and Gait Research
- Scientific Council for Biomechanics of Russian Academy of Sciences

*Ad-Hoc Reviewer*

- Applied Biomechanics
- Archives of Physical Medicine and Rehabilitation
- Brain
- Brazilian Journal of Medical and Biological Research
- Clinical Biomechanics
- Clinical Neurophysiology
- Encyclopedia of Biomaterials and Biomedical Engineering
- European Journal of Applied Physiology
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14. **Aruin A.S.**, Farber B.S., Gerasimenko V.G. & Shmeleva E.L. Device for massage of the extremities. USSR Patent #1629059.
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