CURRICULUM VITA

Lawrence Dagger Abraham, EdD

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Education

Oberlin College	A.B. 1971	Physical Education
Kansas State Teachers College	M.S. 1972	Physical Education *(Motor Learning)*
Teachers College, Columbia University	Ed.D. 1975	Physical Education *(Motor Learning & Biomechanics)*

Employment

1975-82 Assistant Professor, Physical and Health Education, The University of Texas at Austin

1982- 2003 Associate Professor, Kinesiology and Health Education, The University of Texas at Austin

2003- present Professor, Kinesiology and Health Education, The University of Texas at Austin

1980-81 Research Associate, Laboratory of Neural Control, NINCDS, The National Institutes of Health, Bethesda, MD

1987-88 Visiting Adjunct Associate Professor, Department of Exercise Science, University of Massachusetts

1998- 2002 Associate Dean for Teacher Education and Student Affairs, College of Education, The University of Texas at Austin

2000-2008 Chair, Department of Curriculum and Instruction, The University of Texas at Austin

2009-2012, 2013 – Associate Dean, School of Undergraduate Studies, The University of Texas at Austin

2012-2013 Interim Dean, School of Undergraduate Studies, The University of Texas at Austin

Professional Memberships

American College of Sports Medicine; International Society of Biomechanics; International Society of Biomechanics in Sports; International Society of Electrophysiological Kinesiology; National Association of Kinesiology in Higher Education; North American Society for the Psychology of Sport and Physical Activity; Phi Delta Kappa; SHAPE America (formerly AAHPERD; including NASPE Kinesiology Academy, Motor Development Academy; Research Consortium Fellow); Society for Neuroscience; Texas Association for Health, Physical Education, Recreation, and Dance

Research and Professional Interests

Biomechanical analysis of human movement in sport and rehabilitation.
Neuromuscular aspects of motor coordination.
Computer-assisted modeling of neuromuscular control systems.
Utilization of instructional technology in teaching and learning.

Refereed Articles

1. Potegal, M., Abraham, L., Gilman, S., & Copack, P. A technique for vestibular neurotomy in the rat. Physiology and Behavior, 1975, 14, 217-221.
2. Abraham, L., Copack, P.B., & Gilman, S. Brainstem pathways for vestibular projections to cerebral cortex. Experimental Neurology, 1977, 55, 436-448.
3. Potegal, M., Day, M.J., & Abraham, L. Maze orientation, visual and vestibular cues in two-maze spontaneous alternation of rats. Physiological Psychology, 1977, 5, 414-420.
4. Blum, P.S., Abraham, L., & Gilman, S. Vestibular, auditory, and somatic input to the posterior thalamus of the cat. Experimental Brain Research, 1979, 34, 1-9.
5. Wolf, M.D., Wilcox, R.E., Riffee, W.H., & Abraham, L.D. Strain differences in dopamine receptor function and the initiation of movement. Pharmacology, Biochemistry, & Behavior, 1980, 13, 5-7.
6. Spirduso, W.W., Abraham, L.D., & Wolf, M.D. Effects of chlorpromazine on escape and avoidance responses: A closer look. Pharmacology, Biochemistry, & Behavior, 1981, 14, 433-38.
7. Farrar, R.P., Martin, T.P., Abraham, L.D., & Erickson, C.K. The interaction of endurance running and ethanol on skeletal muscle mitochondria. Life Sciences, 1982, 30, 67-75.
8. Miller, S., Potegal, M., & Abraham, L. Vestibular involvement in a passive transport and return task. Physiological Psychology, 1983, 11, 1-10.
9. Abraham, L., Potegal, M., & Miller, S. Evidence for caudate nucleus involvement in an egocentric spatial task: Return from passive transport. Physiological Psychology, 1983, 11, 11-17.
10. Brown, J.G., Abraham, L.D., & Bertin, J.J. Descriptive analysis of the rip entry in competitive diving. Research Quarterly for Exercise and Sport, 1984, 55, 93-102.
11. Abraham, L.D. & Loeb, G.E. The distal hindlimb musculature of the cat. Patterns of normal use. Experimental Brain Research, 1985, 58, 580-593.
12. Abraham, L.D., Marks, W.B., & Loeb, G.E. The distal hindlimb musculature of the cat. Cutaneous reflexes during locomotion. Experimental Brain Research, 1985, 58, 594-603.
13. Etnyre, B.R. & Abraham, L.D. H-Reflex changes during static stretching and two variations of PNF techniques. Electroencephalography and Clinical Neurophysiology, 1986, 63, 174-179.
14. Etnyre, B.R. & Abraham, L.D. Gains in range of ankle dorsiflexion using three popular stretching techniques. American Journal of Physical Medicine, 1986, 65, 189-196.
15. Layne, C. & Abraham, L.D. Patterns of lower limb muscle activity during a one-foot static balance task. Research Quarterly for Exercise and Sport, 1987, 58, 36-40.
16. Etnyre, B.R. & Abraham, L.D. Antagonist muscle activity during stretching: A paradox revisited. Medicine and Science in Sports and Exercise, 1988, 20, 285-289.
17. Etnyre, B.R., Kinugasa, T., & Abraham, L.D. Post-contraction variations in motor pool excitability. Electromyography and Clinical Neurophysiology, 1990, 30, 259-264.
18. Coyle, E., Feltner, M., Kautz, S., Hamilton, M., Montain, S, Baylor, A., Abraham, L., Petrek, G.. Physiological and biomechanical determinants of elite cycling endurance performance. Medicine and Science in Sports and Exercise, 1991, 23, 93-107.
19. Barr, R.E. & Abraham, L.D. Computer-aided instructional sequence for biomechanics of human movement. International Journal of Applied Engineering Education, 1991, 7, 221-230.
20. Layne, C. & Abraham, L. Interactions between automatic postural adjustments and anticipatory postural patterns accompanying voluntary movement. International Journal of Neuroscience, 1991, 61, 241-254.
21. Allison, S.C. & Abraham, L.D. M-wave stability in H-reflex testing: Analysis of three rejection criteria. Electromyography and Clinical Neurophysiology, 1994, 35, 165-168.
22. Allison, S.C. & Abraham, L.D. Correlation of quantitative measures with the modified Ashworth scale in the assessment of plantar flexor spasticity in patients with traumatic brain injury. Journal of Neurology, 1995, 242, 699-706.

23. Gonzalez, R.V., Hutchins, E.L., Barr, R.E. & Abraham, L.D. Development and evaluation of a musculoskeletal model of the elbow joint complex. Journal of Biomechanical Engineering, 1996, 118, 32-40.
24. Allison, S.C., Abraham, L.D. & Petersen, C.L. Reliability of the Modified Ashworth Scale in the assessment of plantarflexor muscle spasticity in patients with traumatic brain injury. International Journal of Rehabilitation Research, 1996, 19, 67-78.
25. Gonzalez, R.V., Abraham, L.D., Barr, R.E. & Buchanan, T.S. Muscle coordination in one and two degree-of-freedom ballistic movements about the human elbow joint complex. Biological Cybernetics, 1999, 80, 357-367.
26. Ives, J.C., Abraham, L. & Kroll, W. Neuromuscular control mechanisms and strategy in arm movements of supranormal speed. Research Quarterly for Exercise and Sport, 1999, 70, 335-348.
27. Hwang, I.S., Abraham, L.D. & Chou, S.W. The effect of ankle joint position and effort on quadriceps reflex sensitivity. Clinical Neurophysiology, Section: EMG and Motor Control, 2000, 111, 1175-1183.
28. Hwang, I.S. & Abraham, L.D. Quantitative EMG analysis to investigate synergic coactivation of ankle and knee muscles during isokinetic ankle movement. Part I: Time amplitude analysis. Journal of Electromyography & Kinesiology, 2001, 11, 319-325.
29. Hwang, I.S. & Abraham, L.D. Quantitative EMG analysis to investigate synergic coactivation of ankle and knee muscles during isokinetic ankle movement. Part II: Time frequency analysis. Journal of Electromyography & Kinesiology, 2001, 11, 327-335.
30. Allison, S.C. & Abraham, L.D. Sensitivity of qualitative and quantitative spasticity measures to clinical treatment with cryotherapy. International Journal of Rehabilitation Research, 2002 24, 15-24.
31. Teyhen, D.S., Flynn, T.W., Bovik, A.C., & Abraham, L.D. A new technique for digital fluoroscopic video assessment of sagittal plane lumbar spine motion. Spine, 2005, 30, E406-E413.
32. Annaswamy, T., Mallempati, S., Allison, S.C. & Abraham, L. Measurement of plantarflexor spasticity in Traumatic Brain Injury: Correlational study of resistance torque compared with the Modified Ashworth Scale. American Journal of Physical Medicine and Rehabilitation, 2007, 86, 404-11.
33. Teyhen, D.S., Flynn, T.W., Childs, J.D., Kuklo, T.R., Rosner, M.K., Polly, D.W. & Abraham, L.D. Fluoroscopic video to identify aberrant lumbar motion. Spine, 2007, 32(7): E220-229.
34. Teyhen, D.S., Flynn, T.W., Childs, J.D. & Abraham, L.D. Arthrokinematics in a sub-group of patients likely to benefit from a lumbar stabilization program. Physical Therapy, 2007, 87: 313-325.
35. Decker, M. J., Griffin, L., Brandt, L., and Abraham, L. Effects of stimulation pattern on FES-cycling performance and mechanomyographic responses in persons with paralysis from spinal cord injury. Journal of Electromyography and Kinesiology, 2010, 20(6):1163-69.
36. Herring, T., Eakin, T., Abraham, L., and Spirduso, W. Maximum voluntary isometric contraction and force-matching from the fourth to the eighth decades of life. International Journal of Rehabilitation Research, 2014, 37(2): 159-166.
37. Park, S., Spirduso, W., Eakin, T., & Abraham, L. Force level and directional force modulation effects on accuracy and variability in pinch force tracking. *Journal of Motor Behavior*, 2018, 50(2): 210-218.

Refereed Conference Proceedings

1. Abraham, L. Neuronal basis for vestibulo-proprioceptive interactions in motor control. Psychology of Motor Behavior and Sport, vol. I, (D. Landers & R. Christina, eds.) Champaign: Human Kinetics, 1977, 191-201.
2. Abraham, L. An inexpensive technique for digitizing spatial coordinates from videotape. Biomechanics X-B. Human Kinetics, 1987, 1107-10.
3. Abraham, L. & Cook, M. Skill-related differences in early postural components in ballet. Biomechanics X-A. Human Kinetics, 1987, 451-54.
4. Gonzalez, R.V., Micallef, D.M., Barr, R.E. & Abraham, L.D. Prediction of muscle force patterns in elbow flexion/extension using mathematical modeling and electromyography. Proceedings of the 10th Southern Biomedical Engineering Conference, 1991.
5. Abraham, L.D. & Barr, R.E. Design of microcomputer instructional modules for biomechanics. Teaching Kinesiology and Biomechanics in Sports. AAHPERD, 1991, 67-72.
6. Alciatore, D.G., Abraham, L.D. & Barr, R.E. Matrix solution of digitized planar human body dynamics for biomechanics laboratory instruction. Proceedings of the 12th Annual ASME International Computers in Engineering Conference, 1992.
7. Gonzalez, R., Andritsos, M., Barr, R.E. & Abraham, L. Comparison of experimental and predicted muscle activation patterns in ballistic elbow joint movements. Proceedings of the 30th Annual Rocky Mountain Bioengineering Symposium, 1993.
8. Abraham, L. & Kalakanis, D. Synchronization of video kinematic and analog biomechanical data using the Motion Analysis System. Biomechanics in Sports XI. Univ. of Massachussetts, 1993, 257-261.
9. Gonzalez, R.V., Barr, R.E., & Abraham, L.D. A musculoskeletal model of the elbow joint complex. Proceedings of the 1994 ASME Winter Annual Meeting, 1994.
10. Gonzalez, R.V., Abraham, L.D., Barr, R.E. & Buchanan, T.S. Muscle coordination in elbow joint complex movements. Proceedings of the American Society of Biomechanics, 1995.

Professional Articles

1. Abraham, L. Sports biomechanics: Application of high tech to Olympic engineering. Texas Professional Engineer, July-August, 1984, 16-19.
2. Barr, R.E. & Abraham, L.D. The punter's profile: A biomechanical study. Soma, 1987, 1, 4-12.
3. Abraham, L.D. & Barr, R.E. Microcomputer instructional modules for human biomechanics. Hardcopy, 1992, 4, 6-8.
4. Abraham, L. Using virtual instruments to teach neuromuscular laboratory techniques. National Instruments In Academia, 1996, 3-24.
5. Abraham, L.D. & Hwang, I.-S. Joint time frequency analysis of electromyographic signals for investigation of neuromuscular coordination. In M.L. Chugani, A.R. Samant, & M. Cerna (eds) LabVIEW for Signal Processing. New York: Prentice Hall, 1998, pp. 325-338.

Research Presentations at Scholarly Meetings

1. Cookrish, N. & Abraham, L. The locus of response latency. The fifth annual meeting of the Canadian Psycho-Motor Learning and Performance Symposium, 1973.
2. Abraham, L., Potegal, M., & Manning, S. Evidence concerning a vestibular contribution to spontaneous alternation in rats: A progress report. The fourth annual meeting of The Society for Neuroscience, 1974.
3. Abraham, L., Blum, P., & Gilman, S. Multi-modal responses of cells in the medial geniculate body of the cat. The fifth annual meeting of The Society for Neuroscience, 1975.
4. Abraham, L. Neuronal basis for vestibulo-proprioceptive interactions in motor control. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1976.
5. Abraham, L. Mechanisms of motor control. The annual meeting of the Southern District of the American Alliance for Health, Physical Education, and Recreation, 1977.
6. Abraham, L. Multi-dimensional analysis of short-term motor memory in simple arm positioning. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1977.
7. Abraham, L. & Wolf, M.D. Interactions between reflex and voluntary motor responses to kinesthetic stimuli. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1978.
8. Abraham, L. Basal ganglia, but not hippocampus, mediate vestibular influence on spatially oriented behavior. The International Congress in Physical Education, 1979.
9. Abraham, L.D., Wolf, M.D., & Spirduso, W.W. Effects of chlorpromazine on movement initiation in rats; Part III: Cinematographic analysis. The International Congress in Physical Education, 1979.
10. Spirduso, W.W., Abraham, L.D., & Wolf, M.D. Effects of chlorpromazine on escape and avoidance responses: A closer look. The ninth annual meeting of the Society for Neuroscience, 1979.
11. Abraham, L. & Potegal, M. Caudate nucleus involvement in spatial orientation. The ninth annual meeting of the Society for Neuroscience, 1979.
12. Brown, J.G. & Abraham, L.D. Kinematic characteristics of the rip entry in diving. The second Big Ten CIC Physical Education Body of Knowledge Biomechanics Symposium, 1980.
13. Miller, S., Potegal, M., & Abraham, L. Vestibular involvement in spatial orientation. The annual meeting of the Eastern Psychological Association, 1981.
14. Brown, J.G. & Abraham, L.D. Characteristics of entries in competitive diving. The fifth annual meeting of the American Society of Biomechanics, 1981.
15. Abraham, L.D., Loeb, G.E., & Marks, W.B. Comparison of normal use and reflex response patterns of cat distal hindlimb muscles. The eleventh annual meeting of the Society for Neuroscience, 1981.
16. Miller, S., Potegal, M., & Abraham, L. Vestibular involvement in spatial orientation. The eleventh annual meeting of the Society for Neuroscience, 1981.
17. Etnyre, B.R., Kinugasa, T., & Abraham, L.D. Post contraction inhibition following maximum isometric contraction of the soleus in man. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1983.
18. Etnyre, B. & Abraham, L. Effects of three stretching techniques on the motor pool excitability of the human soleus muscle. The annual meeting of the American Alliance of Health, Physical Education, Recreation, & Dance, 1983.
19. Kinugasa, T., Blankenship, J.C., & Abraham, L. Variations in muscle patterns of a karate strike. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1983.
20. Abraham, L., Kinugasa, T., Baylor, A.M., Blankenship, J.C., & Robertson, D. Changes in electromyographic patterns during acquisition of a fine motor skill. The thirteenth annual meeting of the Society for Neuroscience, 1983.

21. Baylor, A.M., Kinugasa, T., Abraham, L.D. & Blankenship, J.C. Changes in single motor unit activity during acquisition of a fine motor skill. The thirteenth annual meeting of the Society for Neuroscience, 1983.
22. Layne, C.S. & Abraham, L. EMG patterns of lower limb muscles during a one-foot static balance task. The Olympic Scientific Congress, 1984.
23. Boda, W. & Abraham, L. The relationship between arm motion at entry and rip entries in diving. The eighth annual meeting of the American Society of Biomechanics, 1984.
24. Stegall, J.H. & Abraham, L.D. Effects of arm action on the height attained in a maximal vertical jump. The eighth annual meeting of the American Society of Biomechanics, 1984.
25. Benjuya, N. & Abraham, L. Changes in recruitment of single motor units during acquisition of an isometric skill. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1985.
26. Abraham, L. An inexpensive technique for digitizing spatial coordinates from videotape. The tenth International Congress of Biomechanics, 1985.
27. Abraham, L. & Cook, M. Skill-related differences in early postural components in ballet. The tenth International Congress of Biomechanics, 1985.
28. Schryver, J.E., Barr, R.E., Abraham, L.D., Jones, D.D., Evans, R.M., & Schaffer, J.E. Filter-spline-filter smoothing of sport biomechanics data. The thirty-eighth annual Conference on Engineering in Medicine and Biology, 1985.
29. Layne, C.S., Abraham, L.D., & Brunt, D. EMG patterns in response to postural perturbations and their interactions with voluntary movement in deaf subjects. The fifteenth annual meeting of the Society for Neuroscience, 1985.
30. Benjuya, N. & Abraham, L.D. Changes in recruitment of single motor units during acquisition of a dynamic tracing task. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, 1986.
31. Abraham, L. & Benjuya, N. Learning-related differences in human SMU recruitment during position tracing. The sixteenth annual meeting of the Society for Neuroscience, 1986.
32. Benjuya, N. & Abraham, L.D. Learning-related differences in human SMU recruitment during isometric tracing. The sixteenth annual meeting of the Society for Neuroscience, 1986.
33. Cook, M. & Abraham, L.D. Skill-related differences in neuromuscular and kinematic postural adjustments during a ballet skill (grand battement devant). The sixteenth annual meeting of the Society for Neuroscience, 1986.
34. Layne, C.S. & Abraham, L.D. Interactions between reflexive and voluntary postural activity. The sixteenth annual meeting of the Society for Neuroscience, 1986.
35. Barr, R.E., Abraham, L.D., Evans, R.M., Jones, D.D., & Schryver, J.E. Biomechanical analysis of football punting. The IEEE/Engineering in Medicine and Biology Society 8th Conf., 1986.
36. Barr, R.E., Abraham, L.D., Cawood, M.D., & Ziegler, J.M. Microcomputer laboratory for teaching and research in sports biomechanics. The sixth Southern Biomedical Engineering Conference, October 1987.
37. Barr, R.E., Greene, D.E., Abraham, L.D., Hamlin, R.D., Erickson, R.L., & Cleland, T.P. Human electrophysiological dynamics in manual control tracking. The sixth Southern Biomedical Engineering Conference, October 1987.
38. Layne, C.S. & Abraham, L.D. Variations in human postural activity preparatory to well-practiced rapid arm movement. The seventeenth annual meeting of the Society for Neuroscience, 1987.
39. Etnyre, B.R. & Abraham, L.D. Intra- and inter-muscular analysis of EMG signals from wire and surface electrodes using cross-correlation and spectrum analysis techniques. The annual meeting of the International Society of Electrophysiological Kinesiology, 1988.
40. Barr, R.E., Hamlin, R.D., Abraham, L.D. & Greene, D.E. Electromyographic evaluation of operator performance in manual control tracking. The tenth annual meeting of the IEEE/Engineering in Medicine and Biology Society, November 1988.

41. Lombrozo, P., Barr, R.E. & Abraham, L.D. Smoothing of noisy human motion data using digital filtering and spline curves. The tenth annual meeting of the IEEE/Engineering in Medicine and Biology Society, November 1988.
42. Lambert, N.J., Kroll, W.P. & Abraham, L.D. Tendon tap reflex responses as influenced by movement impairment. The eighteenth annual meeting of the Society for Neuroscience, November 1988.
43. Barr, R.E. & Abraham, L.D. Computer-aided instruction and learning in sports biomechanics. The second International Symposium on Computer Simulation in Biomechanics, June 1989.
44. Abraham, L., Kroll, W. & Ives, J. Control of rapid movement onset under conditions of varying resistance. The twelth Congress of the International Society of Biomechanics, June 1989.
45. Abraham, L., Ives, J., Kroll, W. & Bultman, L. Effects of varying load and resistance on control of rapid elbow flexion. The annual meeting of the North American Society for the Psychology of Sport and Physical Activity, May 1990.
46. Abraham, L., Coyle, E., Kautz, S. & Feltner, M. High-power output pedaling of elite cyclists: Physiological and biomechanical characteristics. The First World Congress of Biomechanics, August 1990.
47. Fregly, B.J., Kautz, S.A., Zajac, F.E. & Abraham, L. Steady state pedaling of elite cyclists: Neuromuscular control strategies based on comparison of experimental and simulation results. The First World Congress of Biomechanics, August 1990.
48. Wood, S.M., Barr, R.E., Abraham, L.D. & Gonzalez, R.V. Computer graphics modeling of the musculoskeletal system of the human arm. The annual IEEE Biomedical Engineering Conference, November 1990.
49. Abraham, L.D. & Barr, R.E. Design of microcomputer instructional modules for biomechanics. Third National Symposium on Teaching Kinesiology and Biomechanics in Sports, July 1991.
50. Abraham, L.D. & Barr, R.E. Microcomputer instructional modules for biomechanics. Third National Symposium on Teaching Kinesiology and Biomechanics in Sports, July 1991.
51. Abraham, L., Childs, A., Dodd, M., Harris, D. & Race, C. Clinical report on treatment following traumatic head injury with patterned electrical stimulation. The Third IBRO World Congress of Neuroscience, August 1991.
52. Gonzalez, R.V., Micallef, D.M., Barr, R.E. & Abraham, L.D. Prediction of muscle force patterns in elbow flexion/extension using mathematical modeling and electromyography. The tenth Southern Biomedical Engineering Conference, October 1991.
53. Alciatore, D.G., Abraham, L.D. & Barr, R.E. Matrix solution of digitized planar human body dynamics for biomechanics laboratory instruction. The twelfth annual ASME International Computers in Engineering Conference, August 1992.
54. Abraham, L.D., Kalakanis, D. & Baylor, A.M. Effects of movement initiation conditions on postural and task EMG activity during initiation of rapid shoulder flexion. The twenty-second annual meeting of the Society for Neuroscience, October 1992.
55. Allison, S.C. & Abraham, L.D. Effects of ankle position on M- and H-wave amplitudes in human soleus Hoffman reflex testing. The twenty -second annual meeting of the Society for Neuroscience, October 1992.
56. Gonzalez, R.V., Andritsos, M.J., Barr, R.E. & Abraham, L.D. Comparison of experimental and predicted muscle activation patterns in ballistic elbow flexion joint moments. The Rocky Mountain Biomedical Engineering Conference, April 1993.
57. Abraham, L. and Kalakanis, D. Synchronization of video kinematic and analog biomechanical data using the Motion Analysis System. The annual conference of the International Society for the Biomechanics of Sport, June 1993.
58. Abraham, L.D., Allison, S.C., Anderla, P.A. & Stanford, C. Use of a servo motor device to quantify spastic plantarflexor muscle characteristics. The twenty-third annual meeting of the Society for Neuroscience, November 1993.

59. Abraham, L.D. Microcomputer instructional modules for teaching biomechanics. The annual meeting of the National Association of Physical Education in Higher Education, January 1994.
60. Reiser, R.F. II & Abraham, L.D. Development of geometric and muscle-specific parameters for musculoskeletal modeling of the shoulder joint. The annual meeting of the Texas Regional Chapter of the American College of Sports Medicine, February 1994.
61. Gonzalez, R.V., Barr, R.E., & Abraham, L.D. A musculoskeletal model of the elbow joint complex. The winter annual meeting of the American Society of Mechanical Engineering, November 1994.
62. Abraham, L.D. & Allison, S.C. Correlation of quantitative measures with the modified Ashworth scale in the assessment of plantarflexor spasticity in patients with traumatic brain injury. The twenty-fourth annual meeting of the Society for Neuroscience, November 1994.
63. Allison, S.C. & Abraham, L.D. Sensitivity of qualitative and quantitative spasticity measures to the clinical treatment of spasticity with cryotherapy. The twenty-fourth annual meeting of the Society for Neuroscience, November 1994.
64. Gonzalez, R.V., Abraham, L.D., Barr, R.E. & Buchanan, T.S. Muscle coordination in elbow joint complex movements. The nineteenth annual meeting of the American Society of Biomechanics, August 1995.
65. Allison, S.C., Abraham, L.D. & Stanford, C. Feasibility of using analysis of variance to validate M-wave stability for H-reflex testing. The twenty-fifth annual meeting of the Society for Neuroscience, November 1995.
66. Kalakanis, D. & Abraham, L. Countermovement can contribute to optimal motor coordination of a model without elastic muscle properties. An international conference, "Bernstein's Traditions in Motor Control", August 1996.
67. Abraham, L., Childs, N., McWilliams, H., Chitre, R., Chou, S.-W., Gobert, D., & Waddell, D. Assessment of changes in ankle plantarflexor spasticity following intramuscular Botox injections. The twenty-sixth annual meeting of the Society for Neuroscience, November 1996.
68. Helenberger, D.M., Sanders, M.T. & Abraham, L.D. Temporal analysis of the javelin throw. The annual meeting of the International Society of Biomechanics in Sport, June 1997.
69. Kalakanis, D., Layne, C.S., Abraham, L.D. & Bloomberg, J.J. Influence of external forces on the control and performance of a minimum time shoulder flexion task. The annual meeting of the International Society of Biomechanics in Sport, June 1997.
70. Annaswamy, T.A., Allison, S.C. & Abraham, L.D. Correlation of the Modified Ashworth Scale with the resistance torque in the assessment of plantarflexor spasticity. The annual meeting of the American Academy of Physical Medicine and Rehabilitation, November 1997.
71. Waddell, D. & Abraham, L.D. Practice-related changes in rapid movement initiation in traumatic brain injury patients. The twenty-eighth annual meeting of the Society for Neuroscience, November 1998.
72. Chou, S.W., Abraham, L.D., Hwang, I.S. & Chitre, R. Distinction between tonic and phasic stretch reflexes in the spastic soleus muscle. The twenty-eighth annual meeting of the Society for Neuroscience, November 1998.
73. Chou, S.W., Abraham, L.D. & Hwang, I.S. Clinical implication of the absolute reflex threshold angle of the stretch reflex in spastic soleus muscle. The annual meeting of the American College of Rehabilitation Medicine, November 1998.
74. Gobert, D. & Abraham, L. A multivariate anaylsis of frontal postural sway: Postural coordination as modified by sensory condition and aging. The thirtieth annual meeting of the Society for Neuroscience, November 2000.
75. Resta, P., Abraham, L., Bryant, D. & Tothero, K. Establishing a ubiquitous computing environment for teacher preparation students and faculty: The University of Texas at Austin Laptop Initiative. The annual meeting of the Association of Teacher Educators, February 2004.

76. Resta, P., Abraham, L., Gerwels, M.C.. & Tothero, M. Establishing a ubiquitous computing environment for teacher preparation students and faculty: The University of Texas at Austin Laptop Initiative. The fifteenth annual meeting of the Society for Information Technology and Teacher Education, March 2004.
77. Teyhen, D.S., Abraham, L.D. & Flynn, T.W. Digital fluoroscopic assessment of sagittal plane lumbar spine flexion. The annual meeting of the American Society of Biomechanics, September 2004.
78. Doucet, B.M., Griffin, L., Abraham, L.D., & Cafarelli, E. Difficulty during release phase of force-accuracy tasks: After-peak reverberation. The thirtieth annual meeting of the Society for Neuroscience, November 2004.
79. Teyhen, D.S., Flynn, T.W., Childs, J.D., & Abraham, L.D. Lumbar spine kinematics among patients likely to benefit from a lumbar stabilization exercise program. The annual combined sections meeting of the American Physical Therapy Association, February 2005.
80. Teyhen, D.S., Flynn, T.W., Childs, J.D., Kuklo, T.R., Rosner. M.K., Polly, D.W., & Abraham, L.D. Kinematic movement patterns of lumbar spine segmental instability: An initial step in the development of a clinical prediction rule. The annual meeting of the International Society for the Study of the Lumbar Spine, May 2005.
81. Teyhen, D.S., Flynn, T.W., Childs, J.D., Kuklo, T.R., Rosner. M.K., Polly, D.W., & Abraham, L.D. Description of lumbar spine kinematics: A novel approach using digital fluoroscopic video. The annual meeting of the International Society for the Study of the Lumbar Spine, May 2005.
82. Teyhen, D.S., Flynn, T.W., Bovik, A.C., & Abraham, L.D. A New Technique for Digital Fluoroscopic Video Assessment of Sagittal Plane Lumbar Spine Motion. The annual meeting of the International Society for the Study of the Lumbar Spine, May 2005.
83. Decker, M., Griffin, L., & Abraham, L. Force fluctuations and alternating muscle activation patterns of synergistic muscles during a sustained sub-maximal contraction. The annual meeting of the American College of Sports Medicine, June 2005.
84. Teyhen, D., Flynn, T., Childs, J., Kuklo, T., Rosner, M., Polly, D., & Abraham, L. Identifying kinematic movement patterns in patients with lumbar segmental instability. The annual meeting of the North American Spine Society, September 2005.

84. Teyhen, D., Flynn, T., Childs, J., Kuklo, T., Rosner, M., Polly, D., & Abraham, L. Lumbar spine kinematics a novel approach using digital fluoroscopic video. The annual meeting of the North American Spine Society, September 2005.
85. Teyhen et al Digital Fluoroscopic Video to Identify Segmental Dysfunction in Patients with Lumbar Spine Instability. The annual meeting of the International Society for the Study of the Lumbar Spine, May 2006.

86. Abraham, L. Virtual quantitative application for teaching biomechanical analysis. The annual meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, March 2007.
87. Decker, M.J., Griffin, L., & Abraham, L. Synergistic alternating muscle activation patterns during moderate intensity sustained isometric contractions. The annual meeting of the Society for Neuroscience, November 2007.
88. Abraham, L., Stover, C., & Overdorf, V. Controlling a system to enhance skill acquisition. The annual meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, March 2008.
89. Arora, P., DiBiano, C., Dickinson, G., Walker, M., Abraham, L., & Marder, M. A preliminary examination of Noyce Scholars as teachers. The annual Robert Noyce Scholarship PI Conference, National Science Foundation, June 2008.
90. Russell, P., Satern, M., & Abraham, L. Biomechanics past and future contributions. The annual meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, March 2009.
91. Abraham, L. Innovative approaches to teaching biomechanical concepts. The annual meeting of the American Alliance for Health, Physical Education, Recreation, and Dance, March 2010.
92. Gupta, D., Jensen, J., & Abraham, L. Biomechanical study of hang-time in volleyball spike jumps. The annual meeting of the International Society for the Biomechanics of Sports, July 2015.

93. Lewis,M., Shireman, E., Muller, K., Dean, D., Chaudhari, A., Patel, N., Eakin, R.T., Spirduso, W., & Abraham, L.D. Effects of varying visual feedback on learning a bimanual biorhythmic (2:!) isometric force coordination pattern. The annual meeting of the Society for Neuroscience, November 2015.
94. Gupta, D., Neptune, R., Jensen, J., & Abraham, L. Optimisation of hang-time technique for volleyball spike jumps. The annual meeting of the International Society for the Biomechanics of Sports, July 2016.
95. Lewis,M., Muller,K., Dunn,M., Park,S., Eakin,R.T., Abraham,L.D. Effects of absolute force level and direction of changes in force on accuracy in a cyclic isometric low level force pinch task. The annual meeting of the Society for Neuroscience, November 2016.

Invited Presentations

1. Abraham, L. Biomechanical analysis of running style. Capitol 10,000 Running Clinic, February, 1980.
2. Abraham, L. Neurokinesiological analysis of normal cat locomotion. The fourth annual Teachers College Conference on Motor Control, March 1981.
3. Abraham, L. Current techniques and research in neurokinesiology. Keynote address at the annual meeting of the Maryland Kinesiological Society, May 1981.
4. Abraham, L. An analysis of coordination: the basis for improving movement. Department of Physical Education, Oberlin College, October 1981.
5. Abraham, L. Biomechanical analysis for running efficiency: the BARE facts. Travis County Podiatry Society and Austin YMCA, March 1982.
6. Abraham, L. The goals of motor control. The Winter Conference on Brain Research, 1982.
7. Brown, J.G. & Abraham, L.D. The role of whip in rip entries. The annual Sport Sciences Symposium of the U.S.Diving Association, September 1983.
8. Abraham, L.D. Skill-related differences in human neuromuscular activity. Major presentation at a conference titled "Neurobehavioral Analysis of Motor Skill Learning", Teachers College, Columbia University, November 1987.
9. Abraham, L. Neuromuscular mechanisms controlling rapid movement onset. School of Physical Education, Recreation, and Dance, Kent State University, April 1990.
10. Abraham, L. Effects of load and initial resistance on rapid movement initiation. Department of Physical Education & Leisure Studies, Kansas State University, September 1990.
11. Abraham, L. Issues and trends for the future of physical education. Dept. of Physical Education, Health, and Sport Studies, Miami University, March 1991.
12. Abraham, L.D. & Allison, S.C. Movement analysis research. Healthcare Rehabilitation Center, Austin, TX, October 1991.
13. Abraham, L. Studying elite athletic performance. February Lecture Series, Department of Kinesiology and Health Education, The University of Texas at Austin, February 1992.
14. Abraham, L.D. Paradoxes in analysis of movement. Austin Area Physical Therapy Association, Austin, TX, April 1992.
15. Abraham, L.D. Neuromuscular mechanisms controlling rapid movement onset. Department of Kinesiology, Texas A & M University, March 1994.
16. Abraham, L.D. & Allison, S. In search of objective spasticity measures. Major presentation at a regional workshop titled "Traumatic Brain Injury: Limitations to Skilled Movement", sponsored by the Department of Physical Therapy, University of Florida, April 1994.
17. Abraham, L.D. Applications of exercise science in physical education and sport. Department of Exercise and Leisure Studies, Rice University, April 1994.
18. Abraham, L. Using musculoskeletal models to study neuromotor control. Department of Kinesiology, University of Houston, October 1994.
19. Abraham, L. The once and future biomechanist. TAHPERD Scholar Lecture, the seventy first annual convention of The Texas Association for Health, Physical Education, Recreation, and Dance, December 1994.

20. Abraham, L. Quantification of muscle spasticity in traumatic brain injury patients. Neuroscience Research Group, University of Otago, Dunedin, New Zealand, June 1995.
21. Abraham, L. Biomechanical models and issues in motor control. Motor Control Interest Group, University of Otago, Dunedin, New Zealand, June, 1995.
22. Abraham, L. Magic and science in human movement analysis. Presented at a conference titled "Understanding Movement: Culture, Science, Practice", sponsored by the School of Physical Education, University of Otago, Dunedin, New Zealand, June 1995.
23. Abraham, L. Multidimensional analysis of human movement. Presented to the Rehabilitation Medicine staff at Chang Gung Memorial Hospital, Taipei, Taiwan, December 1995.
24. Abraham, L. Applications of biomechanics in medicine, sport, and engineering. Presented to the medical staff at Chang Gung Memorial Hospital, Taipei, Taiwan, December 1995.
25. Abraham, L. Quantification of muscle spasticity. Presented at the annual meeting of the Rehabilitation Medicine Association, Taiwan, Republic of China, December 1995.
26. Abraham, L. Multidimensional analysis of human movement. Biomedical Engineering Society, The University of Texas at Austin, April 1996.
27. Abraham, L. Mechanisms and treatment of muscle spasticity following traumatic brain injury. Presented at the Second Annual UT Symposium on Neuroscience, March 1997.
28. Abraham, L. Rehabilitation bioengineering. A private forum titled “Building Biomedical Engineering Partnerships” sponsored by The University of Texas at Austin, Austin TX, May 1997.
29. Abraham, L. & Bustard, A. The Texas teacher education laptop initiative. The annual meeting of the American Association of Colleges of Teacher Education, New Orleans, January 2003.
30. Abraham, L. Models and Methods of Research in Education. Third Annual Innovations in Health Science Education Conference, University of Texas System, Austin, October 2006.
31. Smith, C., Abraham, L., Nicholls, G.C., Troncoso, R., Troncoso, C, & Mechler, R. Using core stabilization to enhance running performance. AT&T Austin Marathon Expo 2007 Education Series, February 2007.
32. Smith, C., Abraham, L., Summers, D., Kunkel, B., Garel, M. & Robb, R. Using biomechanical analysis to study and improve running form. AT&T Austin Marathon Expo 2007 Education Series, February 2007.
33. Abraham, L. Addition of intertrial variability to Gentile’s taxonomy of motor skills. Symposium: Ann Gentile: An Appreciation of Her Contributions To Science, Education, and Practice. Teachers College, Columbia University, May 2008.
34. Pursuing peculiar paradoxes in performance,…one foot at a time.. Department of Kinesiology, Texas A&M University, November 2009.
35. The UTeach story: Transforming secondary math and science teacher preparation locally and nationally. Teacher Preparation Initiative, St. Cloud State University, St. Cloud MN, June 2010.
36. Pursuing peculiar paradoxes in performance,…one foot at a time.. Biomechanics Academy Forum, National Association for Sport and Physical Education, Charlotte, NC, April 2013.
37. Pursuing peculiar paradoxes in performance,…one foot at a time.. McCraw Lecture, Department of Kinesiology and Health Education, The University of Texas at Austin, February 2015.

Research Grants, Contracts, and Other Awards

1977-78 University Research Institute, BRSG Research Grant $ 4,454.00
Vestibular cues for spatially-oriented behavior.

1978-79 University of Texas at Austin, Vice-President for Academic Affairs, Improvement of Undergraduate Teaching Award $ 1,487.00
Development of physical education experiential packets (PEEPs).
(Co-I, with T. McKenzie & D. Lambdin)

1979-80 University Research Institute, BRSG Research Grant $ 5,196.00
Rostral vestibular projections in the rat.

1979-80 Intercollegiate Athletics for Women, U.T., Research Contract $ 5,000.00
Biomechanical analysis of sport.

1980-81 National Institutes of Health, NINCDS, Laboratory of Neural Control $ 25,000.00
Neurokinesiological analysis of cat locomotion.
(Intergovernmental Personnel Act)

1981 University Research Institute Special Research Grant $ 500.00
Expert-novice cognitive processing differences in recognition memory or movement information. (Co-I, with L.D. Housner)

1982 University Research Institute, BRSG Research Grant $ 5,200.00
Multi-dimensional analysis of fine motor skill acquisition.
(PI, with A.M.Baylor)

1983-86 Intercollegiate Athletics for Men, U.T.Intercollegiate Athletics for Women, U.T., Research Contract $ 29,306.00
Biomechanical analysis of sport. (with R. Barr)

1985-87 Project Quest, UTAustin and IBM , Instructional Award $ 95,000.00
Biomechanical analysis of human movement. (with R. Barr)

1986 University Research Institute, BRSG Research Grant $ 5,229.00
Three-dimensional dynamic model of human movement.

1986-87 Intercollegiate Athletics for Women, U.T. , Research Contract $ 6,000.00
Biomechanical analysis of sport. (with R. Barr)

1987-88 University Research Institute, Faculty Research Assignment $ 20,125.00
Computer-assisted analysis of electromyographic data.

1989-93 Healthcare Rehabilitation Center, Research Gift $ 29,200.00
Biomechanical analysis of movement.

1991-92 Healthcare Rehabilitation Center, Research Grant $ 22,850.00
Quantification of spasticity

1992-93 NASA - Johnson Space Center, Regional University Grant Program $ 72,075.00
Musculoskeletal modeling of the human upper extremity.
(Co-I, with R. Barr & M. Pandy)

1992-93 Healthcare Rehabilitation Center, Research Grant $ 33,490.00
Quantification of muscle spasticity

1993 Various Donors, Research Grant $ 2,500.00
Descriptive analysis of novice diving entries from a six-inch deck. (with K. Tyson)

1993-94 NASA - Johnson Space Center, Regional University Grant Program $ 64,876.00
Musculoskeletal modeling of the human upper extremity.
(Co-I, with M. Pandy & R. Barr)

1994 Healthcare Rehabilitation Center, Research Gift $ 22,000.00
Evaluation of movement disorders following traumatic head injury.

1994 KRUG Life Sciences, Inc., Research Contract $ 6,453.00
Analysis of EMG data in the treadmill locomotion and head and gaze fixation project.

1994 Project Quest, UTAustin, Instructional Award $ 5,000.00
Using virtual instruments to teach neuromuscular laboratory techniques.

1995 Healthcare Rehabilitation Center, Research Gift $ 16,000.00
Evaluation of movement disorders following traumatic head injury.

1995-96 KRUG Life Sciences, Inc., Research Contract $ 20,005.00
Development of a dynamic model for investigating postural control during arm movement.

1995-97 NASA - Johnson Space Center, Regional University Grant Program $ 38,662.00
Neuromechanical postural control synergies supporting voluntary movement.

1995-97 NASA - Johnson Space Center, Regional University Grant Program $ 59,385.00
Musculoskeletal modeling of human upper extremity performance.
(Co-PI, with R. Barr & M. Pandy)

1997-98 Healthcare Rehabilitation Center, Research Gift $ 12,000.00
Evaluation of movement disorders following traumatic head injury.

2007-10 National Science Foundation $400,000.00
Robert Noyce UTeach Scholarships.

2010-12 Texas Higher Education Coordinating Board $400,000.00
Developmental Education Demonstration Project

2015-17 The University of Texas System, UT Brain seed grant program $100,000.00
Enhancing complex motor performance using MEG neurofeedback
(C0-I, with Sulzer, Schnyer, Ferrari, McManis, & Valadka)

Teaching and Instructional Activities

Courses Developed

Undergraduate Courses

KIN 320 Applied Biomechanics of Human Movement
KIN 326K Kinesiology: Biomechanical Analysis of Movement
KIN 219S Analysis of Individual Activities
KIN 219D Analysis of Dual Activities
KIN 219T Analysis of Team Activities
KIN 352K Applied Exercise Science (contains substantial writing component)

Graduate Courses

PED 382 Relay Circuits for Motor Control
PED 382 Biomechanical Analysis of Movement
PED 382 Neuromuscular Laboratory Techniques
KIN 382 Motor Control Laboratory Techniques
KIN 382 Biomechanics Laboratory Techniques
PED 395 Sensorimotor Function of the Nervous System
PED 395 Neuropsychological Bases of Motor Performance
KIN 395 Biomechanics of Sport
KIN 395 Neural Control of Posture and Locomotion
KIN 395 Biomechanics of Human Movement

Organized Courses Taught

Undergraduate courses

PI 108J Beginning Volleyball
PED 104H Beginning Racquetball
KIN 315 Motor Learning
KIN 219S Movement Analysis: Individual Sports (team-taught)
KIN 219D Movement Analysis: Dual Sports (team-taught)
KIN 320 Biomechanical Analysis of Human Movement
KIN 326K Kinesiology: Biomechanical Analysis of Movement
PED 335 Motor Learning and Control (Laboratory)
KIN 335 Motor Learning
KIN 336 Neuromuscular Control
KIN 352K Applied Exercise Science (contains substantial writing component)
KIN 379H Honors Tutorial: Neurophysiological Bases of Motor Learning

Graduate courses

PED 382 Relay Circuits for Motor Control
PED 382 Biomechanical Analysis of Movement
PED 382 Neuromuscular Laboratory Techniques
KIN 382 Motor Control Laboratory Techniques
KIN 382 Biomechanics Laboratory Techniques
PED 395 Sensorimotor Function of the Nervous System
PED 395 Neuropsychological Bases of Motor Performance
KIN 395 Biomechanics of Sport
KIN 395 Neural Control of Posture and Locomotion
KIN 395 Motor Control: Performance and Learning
KIN 395 Motor Control: Neuromuscular Bases
KIN 395 Biomechanics of Human Movement
KIN 395 Biomechanics in Clinical Settings
NEU 383T Introduction to Neuroscience (campus-wide, team taught)
BME 397S Biomedical Engineering Seminar

Graduate Student Supervision

Doctoral students supervised

Michael Wolf, Ph.D. Physical Education (Motor Control) 1979
(co- with W. Riffee, Pharmacy)
Strain differences in nigrostriatal function and the initiation of movement.

Debra Robertson, Ph.D. Physical Education (Motor Control) 1982
Analysis of electromyographic patterns and performance scores of males and females during fine motor skill acquisition.

Bruce Etnyre, Ph.D. Physical Education (Motor Control) 1984
The influence of three stretching techniques on the excitability of the human soleus motor pool and on the range of ankle dorsiflexion.

Nisim Benjuya, Ph.D. Physical Education (Motor Control) 1986
Changes in recruitment of single motor units during acquisition of a static and a dynamic motor skill.

Arlene Antilla, Ph.D. Physical Education (Motor Control) 1986
Preparatory postural adjustments in 5- and 8-year-old boys.

Charles Layne, Ph.D. Physical Education (Motor Control) 1987
Relationships between anticipatory postural and prime mover muscle activity.

Stephen Allison, Ph.D. Kinesiology (Motor Control) 1994
Qualitative and quantitative measurement of plantarflexor muscle spasticity in patients with traumatic brain injury: Reliability, prediction and sensitivity to cryotherapy.

Roger Gonzalez, Ph.D. Mechanical Engineering (Biomechanics) 1995
(co- with R. Barr, Mechanical Engineering)
A computational musculoskeletal model of the human elbow and forearm in the analysis of ballistic movements.

David Carpenter, Ph.D. Kinesiology (Biomechanics) 1995
(co- with R.J. Thornhill, Mechanical Engineering)
Effects of altered gravity on jumping performance and intermuscular control.

Dimitrios Kalakanis, Ph.D. Kinesiology (Biomechanics) 1997
Optimal control and dynamics applied to rapid bilateral arm raise.

Shih-Wei Chou, Ph.D. Kinesiology (Motor Control) 1998
Stretch reflexes in the soleus muscle of normal and spastic subjects: Interactive effects of starting positions and stretching velocities.

Dwight Waddell, Ph.D. Biomedical Engineering (Neuromuscular Control) 1998
Quantitative evaluation of movement initiation and skill acquisition in a traumatically brain injured population.

Ing-Shiou Hwang, Ph.D. Biomedical Engineering (Neuromuscular Control) 1998
Quantitative electromyographic analysis of synergy in neuromuscular control.

Rohit Chitre, Ph.D. Biomedical Engineering (Neuromuscular Control) 2000
Modeling the reflex-mediated mechanical response to muscle stretch in normal subjects and spasticity patients.

Denise Gobert, Ph.D. Kinesiology (Motor Control) 2000
A multivariate analysis of frontal plane postural sway: Postural coordination as modified by sensory condition and aging.

Wen-Tzu Tang, Ph.D. Kinesiology (Biomechanics) 2002
Relationships among arm strength, wrist release, and joint torques during the golf downswing.

Deydre Teyhen, Ph.D. Kinesiology (Biomechanics) 2004
Kinematic assessment of lumbar segmental instability using digital fluoroscopic video.

Trena Herring Marler, Ph.D. Kinesiology (Motor Control and Aging) 2011
(co- with Waneen Spirduso)
Precision pinch isometric force, force variability, accuracy, and task time among the 4th through 8th decades of life.

Masters students supervised

Susan Kent, M.A. Physical Education (Motor Integration) 1977
Verification of the effects of structure and strategy on arm positioning accuracy

Nina Shepardson, M.A Physical Education (Adapted Physical Education) 1978
The effects of perceptual-motor enrichment upon the motor performance of a six year old child with cerebella brain damage.

Charles Layne, M.A Physical Education (Adapted Physical Education) 1982
EMG patterns of four lower limb muscles during a one foot static balance task.

Janet Brown, M.A. Physical Education (Biomechanics) 1982
Biomechanical analysis of the rip entry in competitive diving.

Tomaz Ribeiro, M.A. Physical Education (Motor Control) 1984
Changes in memory usage leading to automatic information processing, due to practice.

Joel Stegall, M.A. Physical Education (Biomechanics) 1984
Effects of arm action on the height attained in a maximal vertical jump.

Melissa Cook, M.A. Physical Education (Motor Control) 1985
Differences between skill levels in neuromuscular and kinematic postural adjustment patterns during a grande battement devant.

Mark Engeling, M.Ed. Physical Education 1985
No thesis, no report.

Wanda Boda, M.A Physical Education (Biomechanics) 1986
Analysis of the rip entry in diving.

Holly Straight, M.A. Physical Education (Biomechanics) (report) 1987
The kinematic effects at the knee joint due to running on a mediolateral tilt.

Derek Parker, M.A. Physical Education (Biomechanics) (report) 1987
Kinematic assessment of critical features of two common discus training techniques.

Tamara Thompson, M.Ed. Kinesiology (Biomechanics) 1989
No thesis, no report.

Carolyn Guyton, M.Ed. Kinesiology (Biomechanics) 1989
No thesis, no report.

Martha Dodd, M.Ed. Kinesiology (Motor Control) 1991
No thesis, no report.

Raoul Reiser, II, M.A. Kinesiology (Biomechanics) 1993
Development of geometric and muscle-specific parameter values for musculoskeletal modeling of the shoulder joint.

Peter Anderla, M.S. Biomedical Engineering (report) 1993
EMG/Force relations in the tibialis anterior.

Dimitrios Kalakanis, M.A. Kinesiology (Biomechanics) 1994
Postural adjustments associated with rapid, bilateral arm movement under self-paced, reaction and coincident initiation conditions.

Susan Bailey, M. Ed. Kinesiology 1994
No thesis, no report.

Kathryn Jump, M.Ed. Kinesiology (Biomechanics) 1994
No thesis, no report.

Alanna Albrecht, M.A. Kinesiology (Biomechanics) 1994
Muscle activation and torque in the lower limbs during rapid, bilateral shoulder flexion.

Rohit Chitre, M.S. Biomedical Engineering 1994
Comparison of EMG processing techniques for correlation with joint torque.

Thomas Duke, M.A. Kinesiology (Biomechanics) 1994
Anti-G straining maneuver foot pressures during centrifuge trials.

Mandyam Thirunarayan, M.A. Kinesiology (Motor Control) 1994
Correlation of the Modified Ashworth Scale with the resistance torque obtained through analyses of the torque data in the assessment of plantarflexor spasticity in patients with traumatic brain injury.

Charyn O'Brien, M.A. Kinesiology (Motor Control) 1996
Hand skills, reaction time, and short term memory changes related to EEG biofeedback therapy in children with attention deficit disorder: A case study.

Derek Helenberger, M.S. Biomedical Engineering 1996
Temporal analysis of the javelin throw.

Denise Gobert, M.Ed. Kinesiology (Motor Control) 1997
No thesis, no report.

Robert Vincent, M.S. Mechanical Engineering 1997
(Co- with R. Barr, Mechanical Engineering)
Biomechanical analysis of changes in neuromuscular control strategy during extended practice of a rapid elbow flexion movement.

Wen-tzu Tang, M.Ed. Kinesiology (Biomechanics) 1998
No thesis, no report.

Laura Morf, M.Ed. Kinesiology (Motor Control) 1999
No thesis, no report.

Daniel Britt, M.A. Kinesiology (Biomechanics) 2002
Biomechanical analysis of factors affecting clubhead speed at impact in a golf swing.

Mary Pflum, M.A. Kinesiology (Biomechanics) 2002
(co- with M. Pandy, Biomedical Engineering)
Anterior cruciate ligament forces during dynamic activity.

Tejas Karande, M.S. Biomedical Engineering 2002
(co- with R. Barr, Mechanical Engineering)
Virtual biomechanics laboratory.

Chul-Ho Yu, M.Ed. Kinesiology (Biomechanics) 2005
No thesis, no report.

Michelle Brown, M.A. Science Education 2006
(co- with J. Luft, Science Education)
The creation and implementation of a Nature of Science rubric: Seeking factors that influence beginning teachers' understandings of the nature of science

Christopher Sanders, M.A. Science Education 2007
Engaging students in the study of the kinematics of projectile motion using the UT BioMech website.

Landon Hamilton, M.A. Kinesiology (Motor Control and Aging) 2010
Analysis of Force Production and Muscle Activation in a Manual Tracking Task.

Nicole Kristen Bohnsack, M.S. Kinesiology (Biomechanics) 2010
Body dynamics and Muscle Activity during Chi running.

Christopher Wilson, M.S. Kinesiology (Motor Control and Aging) 2012
Effect of visual feedback on learning of a 2:1 isometric bimanual coordination pattern.

Sangsoo Park, M.S. Kinesiology (Biomechanics) 2012
Effects of varying the force levels and direction of force change on accuracy and force variability in a cyclic isometric pinch force tracking task

Samantha Gottlich, M.S. Kinesiology (Motor Learning and Control) 2013
Static and dynamic performance during precision fine motor tracking.

Kristin Abels, M.S. Kinesiology (Biomechanics and Motor Control) 2013
The impact of foam rolling on explosive strength and excitability of the motor neuron pool

Melissa Lewis, M.S. Kinesiology (Motor Learning and Control) 2014
Effects of varying force levels and combinations of force application and release during an isometric pinch force task

Xueyan Zhao, M.S. Kinesiology (Biomechanics) 2014
(Co-, with J. Dingwell, Kinesiology
Regulating Stepping During Fixed-Speed and Self-Paced Treadmill Walking

Qianyun Meng, M.Ed. Kinesiology (Biomechanics) 2015
No thesis, no report.

Dhruv Gupta, M.S. Kinesiology (Biomechanics) 2015
Biomechanics of hang-time in volleyball spike jumps and its effect on performance.

Academic Program Development

Undergraduate

Curricular revision in Physical Education major to accommodate PL 94-142
Chaired committee for creation of Bachelor of Science in Kinesiology Degree Program, including major programs in kinesiology and health promotion & fitness
Steering Committee member, UTeach program for reformed secondary math and science teacher certification
Directed revision of University teacher certification programs to align with new state standards and levels, 2000-2002
Oversaw the creation of TIES (Teacher Induction Education and Support) program for University teacher education program completers as they enter the teaching profession.
Led the design and implementation of a laptop computer requirement for teacher certification students (LIFE – Laptop Initiative for Future Educators).
Served on a blue ribbon Task Force on Curriculum Reform for the University undergraduate core curriculum, 2005-06.

Graduate

Concentrations in motor control and biomechanics for masters and doctoral students in kinesiology
Concentration in biomechanics for masters and doctoral students in biomedical engineering
Cross-disciplinary graduate program in neuroscience
Concentration in movement science for masters and doctoral students in kinesiology.
Masters degree program in health science education for UTMB faculty (in progress).

Other Evidence of Teaching Excellence

2006 recipient of the University-wide Innovative Instructional Technology Awards Program Gold Award for Teaching with Technology.
Doctoral student (Deydre Teyhen) received the Outstanding Dissertation Award in 2005.
Nominated by students for Friar Society Teaching Excellence Award, 1988, 1997.
Nominated by the College of Education for charter membership in the Academy of Distinguished Teachers, 1995, 1996.
1993-94 recipient of the William David Blunk Memorial Professorship, awarded annually for outstanding teaching and dedication to undergraduate students.
Doctoral student (Roger Gonzalez) received honorable mention for a research paper presented at the 10th Southern Biomedical Engineering Conference, October 1991.
Selected by the Center for Teaching Effectiveness for participation in two studies on classroom interaction and professor-student communication.
Three masters students have been selected competitively for research internships in biomechanics at the U.S. Olympic Training Center.
Former graduate students hold or have held the following positions:
Research Assistant, Human Biomechanics Laboratory, Georgia Tech
Research Scientist: Prosthetics Research Laboratory (Roxbury VA Center), Mechanical Engineering (Stanford University), Rehabilitation (Northwestern University), Occupational Therapy (SUNY Buffalo), Health & Performance Sciences (Georgia Tech)
Director, Motor Behavior Laboratory, Krug LSI at Johnson Space Center, NASA
Director of Research and Education, U.S. Diving
Tenured or tenure-track faculty: New York University, Northeastern University, Northwestern University, Sonoma State University, Fort Sam Houston, U.S. Army/Baylor Univ., University of Kansas, LeTourneau University, Kaye College, Israel, Tulane University, Universidade Federal Fluminense, Niterio, Brazil, University of Houston, Rice University, Texas State University

Academic Advising, Counseling, and Other Student Services

Undergraduate Advising

Until 1997, each semester I was assigned between fifteen and thirty undergraduate students as advisees. Usually these students remained assigned to me throughout their stay at The University. In 1997-98 I served as an adviser for noncertification kinesiology majors and during open "drop-in" advising for about fifteen hours per semester. From Fall 1998 through May of 2002 I coordinated the activities of the staff advisers in the dean's office who advise all undergraduate students seeking teacher certification or who are majors in the College of Education. I also addressed special petitions from students, parents, and UT staff and faculty regarding student academic matters and teacher certification questions. During the years that I served as Director of the KHE Undergraduate Program, I coordinated all undergraduate student advising and advised about forty to fifty students each semester. Also, in 1979-80 I served as a Faculty Fellow for a floor in Kinsolving Dormitory , and in 1985-87 I was a co-Faculty Adviser for the Longhorn Physical Education Association.

Graduate Advising

I regularly advise masters and doctoral students in Kinesiology and (since 1991) Biomedical Engineering who are interested in biomechanics and motor control. On the average I have probably supervised about four doctoral students and four masters students each semester. I also advise students on an informal basis who are interested in these areas though are being supervised by other faculty. I am presently co-supervising three doctoral students and four masters students. In my role as Assistant Graduate Adviser, I saw about twelve additional students per semester and assisted the Graduate Adviser with processing student petitions and other student matters. During my term in the Dean's Office, I often counseled students and parents with particularly difficult issues by referral or petition.

KHE Departmental Administrative Service

Assistant Graduate Adviser, Kinesiology & Health Education 1993-98
Director of Departmental Undergraduate Programs and Undergraduate Adviser 1989-91
Chair, Graduate Studies Committee 1981-84, 1986-87
Coordinator of Instructional Technology 1993-1998
Movement Science Program Area Coordinator 2009- 2011

KHE Departmental Committees and Other Service

Undergraduate Advisory Committee 1978-1991; Chair 1989-91
Graduate Studies Committee 1977-present
- Graduate Program Brochure Subcommittee 1977
- Subvention Fund Subcommittee, Chair 1984-98
- Admissions Review Committee, General Masters Program, 2000-present

Departmental Review Committee for the Protection of Human Subjects 1989-98;
- Chair 1989-93, 1998

Executive Committee/Budget Council 1981-85, 1986-87, 1989-present
- Merit Evaluation Revision Subcommittee Chair 1990-91
- Departmental Mission Statement Subcommittee Chair 1990-91

Departmental Mission/Vision ad-hoc Subcommittee 1998
Hall of Honor Committee 2008-2013
Management Team 2009-2011
Exercise Science Advisory Committee 2009-present
Movement Science Area Coordinator 2009-2011

C&I Departmental Administrative Service

Chair, 2000-2008

The Department of Curriculum and Instruction includes about forty-five tenured/tenure-track faculty members, about twenty full time and part time lecturers, instructors, and specialists, and about fifteen staff members. The faculty teach the majority of undergraduate teacher preparation professional courses, including the supervision of field experiences and teaching practica. The department includes graduate programs (masters and doctoral) in Foreign Language Education, Math and Science Education, and Curriculum and Instruction (with specializations in Bilingual Education, Cultural Studies in Education, Curriculum Studies, Language and Literacy Studies, Social Studies Education, Early Childhood Education, and Instructional Technology) with a total of about 350 graduate students. The Chair presides over the departmental Executive Committee, oversees the instructional budget of about $5M, supervises faculty and staff recruitment, teaching assignments, and promotion, assigns space to personnel and projects, and is responsible for all fiscal, programmatic, and instructional activities in the department.

College Committees and Other Service

College Committee on Teaching Excellence 1983-87
College Undergraduate Curriculum and Guidance Committee 1985-87; Chair 1987, 1998-2002
College Promotion and Tenure Advisory Committee 1988-90
College Undergraduate Program Revision Committee 1988-89
College Research Awards Committee 1988-90
College Computer Committee 1991-92
College Research and Development Committee 1991-93
Center for Applied Research and Development in Education Advisory Board 1993-97
College Learning Technology Advisory Committee 1992-1998
Convocation Marshal, December 1994
UTeach Natural Sciences Steering Committee 1999- Co-Director 2003-
Technology Vision Plan Committee 2000-
AISD Scholarship Steering Committee 2000-02
LIFE (Laptop Initiative for Future Educators Steering Committee 2000-08

College of Education Administrative Service

Associate Dean for Teacher Education and Student Affairs 1998-2002

The Associate Dean for Teacher Education and Student Affairs oversees all undergraduate programs in the College of Education and all teacher certification programs at The University of Texas at Austin. The Associate Dean is responsible for the following specific activities: catalog and curricular revision, graduation and undergraduate degree certification, teacher education and certification, career services, induction support, student field experiences, academic advising, scholarships, special events (Gone to Texas, Honors Day, Parents Weekend, Awards Reception, Explore UT, Honors Colloquium, Commencement), student organizations, recruitment, admissions, scholastic probation and dismissal, program data analysis and reporting. The Associate Dean serves as a member of the College of Education Management Team, chairs the Undergraduate Curriculum Committee, the Substantial Writing Component Course Committee, and the Teacher Education Committee, convenes the Teacher Education Cohort Coordinator Committees, and represents the College at regional and national meetings of teacher education organizations. The Associate Dean oversees fifteen staff members working in the Dean's Office, the Office of Field Experiences, and in the Career Services Office.

From 1998-2002 several special programs and initiatives were implemented and carried out. The number of scholarships administered through the College of Education was increased from about 100 to over 300. An induction support program (TIES – Teacher Induction Education and Support) was created to provide additional mentoring and development for graduates entering teaching. An Austin area higher education teacher education consortium (Capital Area Teacher Education Consortium – CATEC) was created to allow the six area

programs to share ideas and resources. Teacher education programs across all levels and four colleges were restructured to align with new state teacher certification standards and levels. Secondary teacher preparation program reform was also carried out in collaboration with the Colleges of Natural Sciences and Liberal Arts, creating innovative "UTeach" programs. The College of Education played a major role in partnering with the Austin Independent School District in several ways, including a leadership academy, support for bilingual education, support of a major GEAR-UP grant for encouraging students to prepare for college, and creation of a Teaching Career Pathways curriculum. Recruitment programs were developed to connect high school students interested in teaching careers with counselors and students and to encourage them to prepare early for these careers. Special emphasis is placed on high needs areas such as bilingual education, special education, and secondary math and science education. A systematic program statistical analysis was developed to examine the process and products of teacher preparation programs at The University of Texas as Austin, including academic performance and certification exam scores for all students over the last ten years, as well as retention/attrition for program completers. Faculty advisers were secured and supported for all registered student organizations in the College. A major revision to the teacher education program was begun by instituting a requirement that all students seeking teacher certification would be required to have a laptop computer and would be prepared to use computers effectively in teaching. This requirement is accompanied by significant curricular revision and faculty and student training.

Co-Director, UTeach Natural Sciences 2003-present

As the Co-Director I have overseen the expansion of this teacher preparation program to a size of about 600 enrolled students and 75-80 graduates annually. I work closely with the six faculty members in science and mathematics education who teach in the program, I meet bi-weekly with the program steering committee, I serve on the post-baccalaureate admissions committee and the academic appeals committee, and I am often asked to speak on and off campus about the program. In 2006 the UTeach Institute was created to assist other institutions wishing to replicate the program. Since that time many other universities have undertaken this effort, and I have traveled to many states to consult with the leaders of these efforts. I also participate in three to four workshops each year held in Austin to train UTeach leaders from other institutions, as well as the annual UTeach national conference each May. From 2013-2016 I served on the inaugural Board of Directors of the UTeach STEM Educators Association (USEA).

School of Undergraduate Studies Administrative Service

Associate Dean 2009-2012, 2013-present (Interim Dean 2012-13)

The Associate Dean in the School of Undergraduate Studies oversees the student services provided in the Vick Center for Strategic Advising and Career Counseling, the planning and oversight of the core curriculum for all undergraduate degrees on campus, and the Texas Success Initiative. The Sanger Learning Center, which provides academic support for all undergraduate students, reports to me. I also serve in an ex-officio capacity on the Undergraduate Studies Advisory Committee, which is the main faculty governance body for the School of Undergraduate Studies. I represent the Dean as necessary at meetings of the Faculty Council and on the Educational Policy Committee. As the campus continues to implement the recommendations of the Task Force on Curricular Reform, I meet regularly with representatives of every undergraduate school and college to plan the addition of core and flag requirements. I currently lead the School's intensive and systematic assessment of the approximately 400 courses approved to count toward the core that began in 2014.

University Committees and Other Service

Biomedical Engineering Graduate Studies Committee, UT Austin 1989-present
Institute for Neuroscience 1986-present
    Seminar Committee Co-Chair 1986-88
    Graduate Program Committee 1991-93
Faculty Senate/University Council/Faculty Council 1982-84, 1994-97, 2002-06, 2007-2009
Chair, University Recreational Sports Committee 1986-87
Chair, Faculty Senate Ad-Hoc Committee on Athletics and Academics 1994-97
Recreational Sports Building Committee 1986-87
University Educational Policy Committee 1989-91, 2007-2013
Faculty Building Advisory Committee 1996-97, 2002-05
Committee on Financial Aid to Students 2002-05
Faculty Committee on Committees 2003-06 (Chair 2004-06)
Faculty Advisory Committee on Budgets 2003-2009
Faculty Rules Committee 2005-2009
Committee for Undergraduate Degree Program Review 2007-present
Research Excellence Awards Advisory Committee 1997-98
Outstanding Dissertation Selection Committee (Area B Subcommittee Chair) 1993, 1996
Institutional Review Board for the Protection of Human Subjects 1993-97
Commencement Marshal May 1994, May 1995, May 2009-2016
Unrestricted Endowed Presidential Scholarship Selection Committee 1998-02 (Chair, 2000-02)
UT Interactive Steering Committee 1999
Explore UT Steering Committee 2000-02
Task Force on Curricular Reform 2004-06
Dean's Working Group on Curricular Reform 2006
Chair, College of Fine Arts Dean Search Committee 2007
Undergraduate Education Advisory Committee of the Texas Higher Education Coordinating Board 2011-2016
Academic Associate Deans Council, 2011-present (Chair 2013-15)
University representative to Reinvention Center/Collaborative UVP Network, 2012-present
Legislative Review Committee, 2014-present
Student Success Advisory Committee, 2015- 2017
STEM Council, 2016- 2017

Professional and Public Service Activity

Biomechanics consultant:
    Intercollegiate Athletics for Women, UT Austin, 1979-92; Intercollegiate Athletics for Men, UT Austin, 1983-86; U.S. Modern Pentathlon Association, 1986-87; U.S. Diving, 1988-96
    Performance Advisory Team, Johnson Space Center, NASA, 1992-1997
    Elite Training Group, Austin, TX, 1993-98
Member of the Editorial Board of Completed Research in HPERD, 1979-82
Member of the Editorial Board of Kinesiology Reviews, Journal of Physical Education, Recreation, and Dance, 1982-1984
Member of the Editorial Board of Quest, 1986-92
Member of the Editorial Review Board for the U.S. Diving Safety Manual, 1989-90
Research Associate, Healthcare Rehabilitation Center, 1990-2000
Organized research session on elite cycling at the First World Congress of Biomechanics, 1990
Textbook reviewer for publishers: Burgess, Mayfield, Mosby
AAHPERD Research Consortium Credentials Committee 1990-92
Science and Engineering Fair Judge, Austin Area, 1991-92; State, 1992
Blanton Elementary School "Invent America" Judge, 1989-96
Reviewer of grant applications for:
    National Science Foundation, United States Olympic Committee, United States Diving, Veterans Administration Intramural Research Program, Women's Sports Foundation

Manuscript reviewer for the following journals:
Experimental Neurology, International Journal of Sport Biomechanics, International Journal of Sport Medicine, Journal of Applied Biomechanics, Journal of Gerontology, Journal of Motor Behavior, Journal of Neurotrauma, Journal of Physiology, Medicine and Science in Sports and Exercise, Neuroscience, Psycholoquy, Quest

Abstract reviewer for annual meetings of the following organizations:
American Alliance for Health, Physical Education, Recreation, and Dance, American College of Sports Medicine, North American Society for the Psychology of Sport and Physical Activity, Southern District of AAHPERD Research Council, National Association for Physical Education in Higher Education

Hosted tours and lectured to classes from Southwest Texas State University, Department of Allied Health Sciences and San Antonio College, Department of Physical Education.

Organized a sport biomechanics exhibit at the Texas Science and Technology Festival, 1987 and at Bowie High School Science Night, 1991

Organized symposium on use of instructional technology in higher education for the annual meeting of the National Association of Physical Education in Higher Education, 1994

Compiled and maintained the Texas Biomechanics Resource Directory, 1986-1990

Coordinated a feature multimedia presentation on exercise science for the AISD Science/Technology Career Fair, 1992

Developed a collaborative link between AISD Science Academy at LBJ High School and the UT Exercise Science Program, 1993-95

Austin ISD Budget Advisory Committee, 1996, 1997, 2000

Founding Member, Austin ISD Teaching Pathway Steering Committee, 2000-2002

Austin ISD Partners in Education Board of Directors, 2001-2004

Strategic education planning consultant for Apple Computer Corporation, 2004-2008

Special Honors and Awards

1978	Elected to Fellow Status in the Research Consortium of the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD)
1980-81	Research Associate, Laboratory of Neural Control, National Institutes of Health
1987-88	Visiting Adjunct Associate Professor of Exercise Science, U. of Massachusetts
1993-94	William David Blunk Memorial Professorship, The University of Texas (Awarded annually for outstanding teaching and dedication to undergraduate students.)
1994	Selected as the TAHPERD Scholar by the College Division of the Texas Association for Health, Physical Education, Recreation, and Dance
1994	Selected as a recipient (with Dorothy D. Lambdin, EdD) of the Oak Tree Award by the Austin Chapter of the Texas Congress of Parents & Teachers (ACCPTA)
1995	Visiting Lecturer, Faculty of Physical Education, University of Otago, New Zealand.
1995	Guest Speaker, National Association of Rehabilitation Medicine, Republic of China.
1996	Dean's Fellow (Fall), College of Education, The University of Texas at Austin
2001	Inducted into Kappa Delta Pi Education Honorary Society
2001-07	Elizabeth Glenadine Gibb Fellowship in Education
2006	Innovative Instructional Technology Awards Program Gold Award for Teaching with Technology
2007-08	Catherine Mae Parker Endowed Professorship
2008	Dean's Fellow (Fall), College of Education, The University of Texas at Austin
2008-	Fellow in Spence Centennial Professorship
2011	Inducted into Phi Kappa Phi Honor Society
2012	Ruth B. Glassow Biomechanics Honor Award, Biomechanics Academy, National Association for Sport and Physical Education
2013	Civitatis Award for distinguished service to The University of Texas at Austin