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Biomedical Research Publications: 1980-1982

Linda Pleasant and Letty Limbach

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Linda Pleasant and Letty Limbach
The George Washington University Medical Center
Washington, D.C.

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PREFACE

The Biomedical Research Program, within the Office of Space Science and Applications of the National Aeronautics and Space Administration, was established to investigate the major physiological and psychological problems encountered by man when he undertakes spaceflight. The program seeks to obtain a better definition of each problem, an understanding of its underlying mechanism, and ultimately, a means of prevention. Research supported by this program is divided into the areas here listed: cardiovascular deconditioning; motion sickness; bone alterations; muscle atrophy; blood cell alterations; fluid and electrolyte changes; radiation effects and protection; behavior and performance; and, general biomedical research.

The arrangement of references in this bibliography follows the division of research described above. Articles are listed alphabetically by author under the research area with which they are most closely related. Only 1980-1982 publications which resulted from research supported by the Biomedical Research Program have been included. This listing is not complete; it only includes references identified and entered into the Life Sciences Bibliography Data Base as of March 1, 1982.

Our intent in compiling this bibliography is twofold. First, we would like to provide the scientific community with a listing of current publications resulting from research pursued under the auspices of NASA's Biomedical Research Program. Secondly, we hope to stimulate the exchange of information and ideas among scientists working in the different areas of the program. To facilitate the exchange process, we have identified for each publication, by asterisk, the author participating in the program.

Cardiovascular Deconditioning

1. Barney, C.C., Threatte, R.M., and Fregly, M.J. Water deprivation induced drinking in rats: Role of extracellular vs. intracellular components (abstract). Physiologist 24(4): 12, 1981.

2. Barney, C.C., Threatte, R.M., Kikta, D.C., and Fregly, M.J. Effects of serotonin and L-5-hydroxytryptophan on plasma renin activity in rats. Pharmacology Biochemistry and Behavior 14: 895-900, 1981.

3. Bhagat*, P.K., Lafferty, J.F., Bowman, D., and Kadaba, M.P. An ultrasonic plethysmograph for space flight applications. Aviation, Space, and Environmental Medicine 51(2): 185-188, 1980.

4. Bhattacharya, A., McCutcheon, E.P., Shvartz, E., and Greenleaf*, J.E. Body acceleration distribution and O_2 uptake in humans during running and jumping. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 49(5): 881-887, 1980.

5. Billman, G.E., Teoh, K.K., Dickey, D.T., and Stone*, H.L. The effects of anesthesia, body position and central blood volume on baroreceptor reflex sensitivity in the rhesus monkey (abstract). Physiologist 23(4): 29, 1980.

6. Billman, G.E., Teoh, K.K., Dickey, D.T., and Stone*, H.L. Horizontal body casting and baroreceptor sensitivity: The role of central blood volume shifts in the rhesus monkey. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 82-83, 1981.

7. Blomqvist*, C.G., Lewis, S.F., Taylor, W.F., and Graham, R.M. Similarity of the hemodynamic responses to static and dynamic exercise of small muscle groups. Circulation Research 48(6, Pt 2): I87-I92, 1981.

8. Blomqvist*, C.G., Nixon, J.V., Johnson, R.L., Jr., and Mitchell, J.H. Early cardiovascular adaptation to zero gravity simulated by head-down tilt. Acta Astronautica 7: 543-553, 1980.

9. Convertino, V.A., Brock, P.J., Keil*, L.C., Bernauer, E.M., and Greenleaf*, J.E. Exercise training-induced hypervolemia: Role of plasma albumin, renin, and vasopressin. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(4): 665-669, 1980.

10. Convertino, V.A., Goldwater*, D.J., and Sandler*, H. Cardiorespiratory responses to exercise after bed rest in 55 to 65 year old men. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 59-60, 1981.

11. Convertino, V.A. and Greenleaf*, J.E. Orthostatic tolerance following exercise training (abstract). Pfluegers Archiv 391(Suppl): R61, 1981.

12. Convertino, V.A., Greenleaf*, J.E., and Bernauer, E.M. Role of thermal and exercise factors in the mechanism of hypervolemia. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(4): 657-664, 1980.

13. Convertino, V.A., Keil*, L.C., Bernauer, E.M., and Greenleaf*, J.E. Plasma volume, osmolality, vasopressin, and renin activity during graded exercise in man. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 50(1): 123-128, 1981.

14. Convertino, V.A., Keil*, L.C., Greenleaf*, J.E., and Bernauer, E.M. Plasma volume, osmolality, vasopressin and renin activity during graded exercise in man (abstract). Federation Proceedings 39: 291, 1981.

15. Danovitch, G.M. and Krishna, G.G. Renal responses to central vascular expansion in nephrotic syndrome (abstract). Kidney International 21: 149, 1982.

16. Dickey, D.T., Billman, G.E., Teoh, K., Sandler*, H., and Stone*, H.L. The effects of horizontal body casting on blood volume, drug responsiveness, and $+G_z$ tolerance in the rhesus monkey. Aviation, Space, and Environmental Medicine 53(2): 142-146, 1982.

17. Dyer, R.A.G., Dyer, S.A., O'Connor, W.N., and Bhagat*, P.K. Application of orthogonal transforms for classification of myocardial backscattered signals (abstract). Ultrasonic Imaging 3(2): 207-208, 1981.

18. Eckberg*, D.L. Nonlinearities of the human carotid baroreceptor-cardiac reflex. Circulation Research 47(2): 208-216, 1980.

19. Elizondo, R.S., Oddershede, I.R., and Weinberg, R.P. Sympatho-adrenal responses to hyperthermia and ketamine in the rhesus monkey (abstract). Federation Proceedings 40(3): 421, 1981.

20. Fregly, M.J. and Fater, D.C. Effect of the angiotensin I converting enzyme inhibitor, MK-421 on experimentally induced drinking (abstract). Physiologist 24(4): 12, 1981.

21. Greenleaf*, J.E. and Brock, P.J. Na^+ and Ca^{2+} ingestion: Plasma volume-electrolyte distribution at rest and exercise. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(5): 838-847, 1980.

22. Greenleaf*, J.E. and Delaplaine, R.W. Sweat collection capsule. US-Patent-No. 4,190,060, Feb. 26, 1980.

23. Greenleaf*, J.E. and Kozlowski, S. Reduction in peak VO_2 after bed rest is independent of peak VO_2 before bed rest (abstract). Federation Proceedings 40(3): 498, 1981.

24. Greenleaf*, J.E. and Reese, R.D. Exercise thermoregulation after 14 days of bed rest. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(1): 72-78, 1980.

25. Greenleaf*, J.E., Sciaraffa, D., Shvartz, E., Keil*, L.C., and Brock, P.J. Exercise training hypotension: Implications for plasma volume, renin, and vasopressin. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 51(2): 298-305, 1981.

26. Greenleaf*, J.E., Shvartz, E., and Keil*, L.C. Fluid-electrolyte shifts in man during water immersion (abstract). Proceedings of the International Union of Physiological Sciences 14: 445, 1980.

27. Greenleaf*, J.E., Shvartz, E., and Keil*, L.C. Hemodilution, vasopressin suppression, and diuresis during water immersion in man. Aviation, Space, and Environmental Medicine 52: 329-336, 1981.

28. Greenleaf*, J.E., Shvartz, E., Kravik, S., and Keil*, L.C. Fluid shifts and endocrine responses during chair rest and water immersion in man. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(1): 79-88, 1980.

29. Greenleaf*, J.E., Silverstein, L., Bliss, J., Langenheim, V., Rossow, H., and Chao, C. Physiological Responses to Prolonged Bed Rest and Fluid Immersion in Man: A Compendium of Research (1974-1980). NASA, Ames Research Center, Moffett Field, CA, 110 p., Jan. 1982. (NASA-TM-81324)

30. Greenleaf*, J.E., Van Beaumont, W., Brock, P.J., Montgomery, L.D., Morse, J.T., Shvartz, E., and Kravik, S. Fluid-electrolyte shifts and thermoregulation: Rest and work in heat with head cooling. Aviation, Space, and Environmental Medicine 51(8): 747-753, 1980.

31. Guo, G.B.-F., Thames, M.D., and Abboud*, F.M. Compensatory control of heart rate and vascular resistance after section of one set of arterial baroreceptors in hypertensive rabbits (abstract). Federation Proceedings 40(3): 521, 1981.

32. Hodges, G., Dickey, D.T., Teoh, K., Stone*, H.L., and Sandler*, H. Acceleration ($+G_z$) response in primates following 30 days of horizontal casting. In: Preprints of 1980 Annual Scientific Meeting, Aerospace Medical Association, Anaheim, CA, May 12-15, 1980. Washington, D.C.: Aerospace Medical Association, p. 78-79, 1980.

33. Kadaba, M.P. and Bhagat*, P.R. Attenuation and backscattering of ultrasound in freshly excised animal tissues. IEEE Transactions on Biomedical Engineering BME-27(2): 76-83, 1980.

34. Kikta, D.C., Threatte, R.M., Barney, C.C., Fregly, M.J., and Greenleaf*, J.E. Peripheral conversion of L-5-hydroxy-tryptophan to serotonin induces drinking in rats. Pharmacology Biochemistry and Behavior 14: 889-893, 1981.

35. Knutti, J.W., Allen, H.V., and Meindl*, J.D. Integrated circuit implantable systems. ISA Transactions 19(4): 47-53, 1980.

36. Kolka, M.A., Elizondo, R.S., and Weinberg, R.P. Sympatho-adrenal responses to cold exposure and ketamine anesthesia in the rhesus monkey (abstract). Physiologist 24(4): 68, 1981.

37. Kozlowski, S., Greenleaf*, J.E., Turlejska, E., and Nazar, K. Extracellular hyperosmolality and body temperature during physical exercise in dogs. American Journal of Physiology 239: R180-R183, 1980.

38. Krishna, G.G. and Danovitch, G.M. Marked attenuation of natriuresis following central volume expansion (CVE) at night (abstract). Kidney International 21: 280, 1982.

39. Ledoux, J.E., Tucker, L.W., Bo, A.D., Harshfield, G., Green, L., Talman, W.T., and Reis*, D.J. A hierarchical organization of blood pressure during natural behaviour in rat and the effects of central catecholamine neurons thereon. Clinical Science 59: 271S-273S, 1980.

40. Levitan, B.M., Zieglschmid, J., Montgomery, L.D., and Bhagat*, P.K. A comparison of limb plethysmograph systems proposed for use on the space shuttle. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 17-18, 1981.

41. Licht, A., Weiss, N.D., and Bricker*, N.S. Inhibition of 3T6 fibroblasts sodium transport by the natriuretic factor (NF) of uremic human urine using reverse phase chromatography (abstract). Kidney International 21(1): 262, 1982.

42. Longhurst, J.C., Kelly, A.R., Gonyea, W.J., and Mitchell*, J.H. Cardiovascular responses to static exercise in distance runners and weight lifters. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 49(4): 676-683, 1980.

43. Longhurst, J.C., Kelly, A.R., Gonyea, W.J., and Mitchell*, J.H. Echocardiographic left ventricular masses in distance runners and weight lifters. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 48(1): 154-162, 1980.

44. Meindl*, J.D. Biomedical implantable microelectronics. Science 210: 263-267, 1980.

45. Pickel, V.M., Beckley, S.C., Sumal, K.K., Joh, T.H., Reis*, D.J., and Miller, R.J. Light and electron microscopic localization of enkephalin and tyrosine hydroxylase in neostriatum of fetal and adult rat brain. Acta Histochemica 24(Suppl): 97-105, 1981.

46. Raven, P.B., Pape, G., Taylor, W.F., Gaffney, F.A., and Blomqvist*, C.G. Hemodynamic changes during whole body surface cooling and lower body negative pressure. Aviation, Space, and Environmental Medicine 52(7): 387-391, 1981.

47. Raven, P.B., Saito, M., Gaffney, F.A., Schutte, J., and Blomqvist*, C.G. Interactions between surface cooling and LBNP-induced central hypovolemia. Aviation, Space, and Environmental Medicine 51(5): 497-503, 1980.

48. Reis*, D.J., Granata, A.R., Perrone, M.H., and Talman, W.T. Evidence that glutamic acid is the neurotransmitter of baroreceptor afferents terminating in the nucleus tractus solitarius (NTS). Journal of the Autonomic System 3: 321-334, 1981.

49. Sandler*, H. Effects of bedrest and weightlessness on the heart. In: Hearts and Heart-like Organs, Vol. 2 (Bourne, G.H., ed.). New York: Academic, p. 435-524, 1980.

50. Shepherd, J.T., Blomqvist*, C.G., Lind, A.R., Mitchell, J.H., and Saltin, B. Static (isometric) exercise: Retrospection and introspection. Circulation Research 48(6, Pt 2): I179-I188, 1981.

51. Shvartz, E., Haines, R.F., Bhattacharya, A., Keil*, L.C., and Greenleaf*, J.E. Fluid-electrolyte-endocrine responses during orthostasis after immersion and chair rest (abstract). Federation Proceedings 39: 1086, 1980.

52. Talman, W.T., Perrone, M.H., and Reis*, D.J. Acute hypertension after the local injection of kainic acid into the nucleus tractus solitarii of rats. Circulation Research 48(2): 292-298, 1981.

53. Talman, W.T., Perrone, M.H., and Reis*, D.J. Evidence for L-glutamate as the neurotransmitter of baroreceptor afferent nerve fibers. Science 209: 813-815, 1980.

54. Talman, W.T., Snyder, D., and Reis*, D.J. Chronic lability of arterial pressure produced by destruction of A2 catecholaminergic neurons in rat brainstem. Circulation Research 46(6): 842-853, 1980.

55. Teoh, K.K., Dickey, D.T., Sandler*, H., and Stone*, H.L. The effects of horizontal casting on blood volume and the response to vasoactive drugs in primates. In: Preprints of 1980 Annual Scientific Meeting, Aerospace Medical Association, Anaheim, CA, May 12-15, 1980. Washington, D.C.: Aerospace Medical Association, p. 80-81, 1980.

56. Vatner*, S.F. and Zimpfer, M. Bainbridge reflex in conscious, unrestrained, and tranquilized baboons. American Journal of Physiology 9(2): H164-H167, 1981.

57. Zimpfer, M. and Vatner*, S.F. Effects of acute increases in left ventricular preload on indices of myocardial function in conscious, unrestrained and intact, tranquilized baboons. Journal of Clinical Investigation 67: 430-438, 1981.

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58. Andres, R.O. and Anderson*, D.J. Designing a better postural measurement system. American Journal of Otolaryngology 1(3): 197-206, 1980.

59. Arrott, A.P. and Young*, L.R. Torsional eye movements in man during linear accelerations upon emerging from weightlessness (abstract). Society for Neuroscience Abstracts 7: 484, 1981.

60. Bizzi*, E. Central and peripheral mechanisms in motor control. In: Tutorials in Motor Behavior (Stelmach, G.E., Requin, J., eds.). Amsterdam: North-Holland, p. 131-141, 1980.

61. Bizzi*, E. Eye-head coordination. In: Handbook of Physiology, Section 1: The Nervous System, Vol. 2. Bethesda, MD: American Physiological Society, p. 1321-1336, 1981.

62. Bizzi*, E. Processes controlling arm visuo-motor responses (abstract). Experimental Brain Research 41(1): A31-A32, 1980.

63. Bizzi*, E., Accornero, N., Chapple, W., and Hogan, N. Central and peripheral mechanisms in motor control. In: New Perspectives in Cerebral Localization (Thompson, R.A., ed.). New York: Raven, p. 23-34, 1981.

64. Bludworth, B. and Reschke*, M.F. Vertical eye movements as a function of unexpected vertical drops. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 270-271, 1981.

65. Brizzee*, K.R., Ordy, J.M., and Mehler*, W.R. Effects of lesions in lower brain stem and cerebellar vermis on motion sickness-induced emesis in the squirrel monkey (abstract). Society for Neuroscience Abstracts 6: 70, 1980.

66. Brizzee*, K.R., Ordy, J.M., and Mehler*, W.R. Effect of ablation on area postrema on frequency and latency of motion sickness-induced emesis in the squirrel monkey. Physiology & Behavior 24: 849-853, 1980.

67. Buettner, U.W., Henn, V., and Young*, L.R. Frequency response of the vestibulo-ocular reflex (VOR) in the monkey. Aviation, Space, and Environmental Medicine 52(2): 73-77, 1981.

68. Correia*, M.J., Landolt, J.P., Ni, M.D., Eden, A.R., and Rae, J.L. A species comparison of linear and nonlinear transfer characteristics of primary afferents innervating the semicircular canal. In: The Vestibular System: Function and Morphology (Gualtierotti, T., ed.). New York: Springer-Verlag, p. 280-316, 1981.

69. Correia*, M.J., Perachio*, A.A., and Eden, A.R. Space motion sickness: Neural mechanisms of sensory conflict. In: Proceedings of the 34th Annual Conference on Engineering in Medicine and Biology. Bethesda, MD: Alliance for Engineering in Medicine and Biology, p. 237, 1981.

70. Edelman, E.R., Oman*, C.M., Cavallerano, A.A., and Schluter, P.S. Video measurement of torsional eye movement using a soft contact lens technique (abstract). Paper presented at "OMS-81", Conference on the Oculomotor System, CALTECH, Jan. 1981.

71. Eden, A.R. and Correia*, M.J. Improved fixation of the pigeon brain by transcardiac carotid catheterization. Physiology & Behavior 27: 947-949, 1981.

72. Eden, A.R. and Correia*, M.J. Vestibular efferent neurons and catecholamine cell groups in the reticular formation of the pigeon. Neuroscience Letters 25: 239-242, 1981.

73. Eden, A.R., Correia*, M.J., and Steinkuller, P.G. The distribution of horseradish peroxidase-labeled proprioceptive neurons from individual extraocular muscles in the adult pigeon (abstract). Society for Neuroscience Abstracts 6: 479, 1980.

74. Eden, A.R., Correia*, M.J., Westlund, K.N., and Coulter, J.D. An autoradiographic and HRP study of the vestibulocollic reflex in the pigeon (abstract). Presented at the 4th Midwinter Research Meeting, Association for Research in Otolaryngology, St. Petersburg, FL, Jan. 19-21, 1981.

75. Goldberg*, J.M. Thick and thin mammalian vestibular axons: Afferent and efferent response characteristics. In: The Vestibular System: Function and Morphology (Gualtierotti, T., ed.). New York: Springer-Verlag, p. 187-205, 1981.

76. Goldberg*, J.M. and Fernandez, C. Efferent vestibular system in the squirrel monkey: Anatomical location and influence on afferent activity. Journal of Neurophysiology 43(4): 986-1025, 1980.

77. Goldberg*, J.M. and Fernandez, C. Physiological mechanisms of the nystagmus produced by rotations about an Earth-horizontal axis. Annals of the New York Academy of Sciences 374: 40-43, 1981.

78. Goldberg*, J.M., Fernandez, C., and Highstein, S.M. Differential projections of regularly and irregularly discharging vestibular-nerve afferents onto individual secondary neurons of the superior vestibular nucleus in the barbiturate-anesthetised squirrel monkey (abstract). Society for Neuroscience Abstracts 7: 39, 1981.

79. Graybiel*, A. Space motion sickness: Skylab revisited. Aviation, Space, and Environmental Medicine 51: 814-822, 1980.

80. Graybiel*, A., Cramer, D.B., and Wood, C.D. Experimental motion sickness: Efficacy of transdermal scopolamine plus ephedrine. Aviation, Space, and Environmental Medicine 52: 337-339, 1981.

81. Graybiel*, A. and Lackner*, J.R. Evaluation of the relationship between motion sickness symptomatology and blood pressure, heart rate, and body temperature. Aviation, Space, and Environmental Medicine 51: 211-214, 1980.

82. Graybiel*, A. and Lackner*, J.R. A sudden-stop vestibulo-visual test for rapid assessment of motion sickness manifestations. Aviation, Space, and Environmental Medicine 51: 21-23, 1980.

83. Graybiel, A.M. and Berson, D.M. Autoradiographic evidence for a projection from the pretectal nucleus of the optic tract to the dorsal lateral geniculate complex in the cat. Brain Research 195: 1-12, 1980.

84. Greene, L.O. and Daunton*, N.G. Vestibulo-ocular reflex response dynamics during parabolic flight maneuvers in the squirrel monkey (abstract). Society for Neuroscience Abstracts 7: 482, 1981.

85. Gulledge, W.L. and Parker*, D.E. Effects of vestibular fatigue on tracking of linear self-motion (abstract). Presented at the 4th Midwinter Research Meeting, Association for Research in Otolaryngology, St. Petersburg, FL, Jan. 19-21, 1981.

86. Hoffman*, R.B., Salinas, G.A., and Homick*, J.L. Piracetam and fish orientation during parabolic aircraft flight. Aviation, Space, and Environmental Medicine 51: 568-576, 1980.

87. Huang, J. and Young*, L.R. Sensation of rotation about a vertical axis with a fixed visual field in different illuminations and in the dark. Experimental Brain Research 41(2): 172-183, 1981.

88. Igarashi*, M., Levy, J.K., O-Uchi, T., and Homick*, J.L. Diazapam-induced ataxia in trotting squirrel monkeys. Agressologie 21(3): 151-153, 1980.

89. Igarashi*, M., Levy, J.K., O-Uchi, T., and Reschke*, M.F. Further study of physical exercise and locomotor balance compensation after unilateral labyrinthectomy in squirrel monkeys. Acta Otolaryngologica 92: 101-105, 1981.

90. Igarashi*, M., Takahashi, M., Kubo, T., Alford, B.R., and Wright, W.K. Effect of off-vertical tilt and macular ablation on postrotatory nystagmus in the squirrel monkey. Acta Otolaryngologica 90: 93-99, 1980.

91. Kenyon, R.V. and Lichtenberg, B.K. Measurement of ocular counterrolling (OCR) by polarized light. Paper presented at the 25th Annual International Technical Symposium & Instrument Display, San Diego, CA, Aug. 24-28, 1981, 4 p.

92. Kubo, T., Igarashi*, M., Jensen, D.W., and Homick*, J.L. Eye-head coordination during optokinetic stimulation in squirrel monkeys. Annals of Otology, Rhinology & Laryngology 90(1, Pt 1): 85-88, 1981.

93. Kubo, T., Igarashi*, M., Jensen, D.W., and Wright, W.K. Eye-head coordination and lateral canal block in squirrel monkeys. Annals of Otology, Rhinology & Laryngology 90 (2, Pt 1): 154-157, 1981.

94. Kubo, T., Igarashi*, M., Jensen, D.W., and Wright, W.K. Head and eye movements following vestibular stimulus in squirrel monkeys. ORL 43(1): 26-38, 1981.

95. Lackner*, J.R. Some aspects of sensory-motor control and adaptation in man. In: Intersensory Perception and Sensory Integration (Walk, R.D., Pick, H.L., Jr., eds.). New York: Plenum, p. 143-173, 1981.

96. Lackner*, J.R. Some contributions of touch, pressure and kinesthesis to human spatial orientation and oculomotor control. Acta Astronautica 8: 825-830, 1981.

97. Lackner*, J.R. and Graybiel*, A. Etiology of space motion sickness: Role of otolith-semicircular canal interactions (abstract). Society for Neuroscience Abstracts 7: 484, 1981.

98. Lackner*, J.R. and Graybiel*, A. Illusions of postural, visual, and aircraft motion elicited by deep knee bends in the increased gravitoinertial force phase of parabolic flight. Experimental Brain Research 44: 312-316, 1981.

99. Lackner*, J.R. and Graybiel*, A. Variations in gravito-inertial force level affect the gain of the vestibulo-ocular reflex: Implications for the etiology of space motion sickness. Aviation, Space, and Environmental Medicine 52: 154-158, 1981.

100. Lackner*, J.R. and Graybiel*, A. Visual and postural motion aftereffects following parabolic flight. Aviation, Space, and Environmental Medicine 51: 230-233, 1980.

101. Lackner*, J.R. and Levine, M.S. The guidance of saccadic eye movements to perceptually mislocalized visual and non-visual targets. Aviation, Space, and Environmental Medicine 52: 461-465, 1981.

102. Lackner*, J.R. and Mather, J.A. Eye-hand tracking using afterimages. Experimental Brain Research 44: 138-142, 1981.

103. Landolt, J.P. and Correia*, M.J. Neurodynamic response analysis of anterior semicircular canal afferents in the pigeon. Journal of Neurophysiology 43(6): 1746-1770, 1980.

104. Lestienne, F., Polit, A., and Bizzi*, E. Functional organization of the motor process underlying the transition from movement to posture. Brain Research 230: 121-131, 1981.

105. Levy, J.K., Igarashi*, M., O-Uchi, T., and Reschke*, M.F. Laterality analysis of gait in normal squirrel monkeys. Agressologie 21(3): 147-149, 1980.

106. Levy, J.K., Igarashi*, M., O-Uchi, T., and Reschke*, M.F. Spinal-plantar reflex in squirrel monkeys after unilateral labyrinthectomy. Agressologie 22(3): 113-115, 1981.

107. Lim*, D.J. Morphogenesis and malformation of otoconia: A review. In: Morphogenesis and Malformation of the Ear (Gorlin, R.J., ed.). New York: Alan R. Liss, p. 111-146, 1980. (Birth Defects: Original Article Series, Vol. 16, No. 4)

108. Mather, J.A. and Lackner*, J.R. Adaptation to visual displacement with active and passive limb movements: Effect of movement frequency and predictability of movement. Quarterly Journal of Experimental Psychology 32: 317-323, 1980.

109. Mather, J.A. and Lackner*, J.R. The influence of efferent, proprioceptive, and timing factors on the accuracy of eye-hand tracking. Experimental Brain Research 43: 406-412, 1981.

110. Mather, J.A. and Lackner*, J.R. Multiple sensory and motor cues enhance the accuracy of pursuit eye movements. Aviation, Space, and Environmental Medicine 51: 856-859, 1980.

111. Mather, J.A. and Lackner*, J.R. Visual tracking of active and passive movements of the hand. Quarterly Journal of Experimental Psychology 32: 307-315, 1980.

112. Mehler*, W.R. Subcortical afferent connections of the amygdala in the monkey. Journal of Comparative Neurology 190: 733-762, 1980.

113. Oman*, C.M. and Bock, O.L. Visually induced self-motion sensation adapts rapidly to left-right reversal of vision. Annals of the New York Academy of Sciences 374: 352-360, 1981.

114. Oman*, C.M., Bock, O.L., and Huang, J.-K. Visually induced self-motion sensation adapts rapidly to left-right visual reversal. Science 209: 706-708, 1980.

115. Ordy, J.M. and Brizzee*, K.R. Motion sickness in the squirrel monkey. Aviation, Space, and Environmental Medicine 51: 215-223, 1980.

116. Parker*, D.E. The vestibular apparatus. Scientific American 243(5): 118-136, 1980.

117. Parker*, D.E., Martens, W.L., and Johnston, P.A. Influence of auditory fatigue on masked speech intelligibility. Journal of the Acoustical Society of America 67(4): 1392-1393, 1980.

118. Parker*, D.E., Parker, K.L., Lim*, D.J., and Von Gierke, H.E. Effects of associated reward or punishment on noise-induced cochlear damage in the guinea pig (abstract). Presented at the 5th Midwinter Research Meeting, Association for Research in Otolaryngology, St. Petersburg, FL, Jan. 18-21, 1982.

119. Perachio*, A.A. Responses of neurons in the vestibular nuclei of awake squirrel monkeys during linear acceleration. In: The Vestibular System: Function and Morphology (Gualtierotti, T., ed.). New York: Springer-Verlag, p. 443-451, 1981.

120. Perachio*, A.A. and Correia*, M.J. Transfer characteristics of anterior semicircular canal afferents in the anesthetized gerbil (abstract). Society for Neuroscience Abstracts 6: 558, 1980.

121. Perachio*, A.A., Correia*, M.J., and Clegg, T. Responses of semicircular canal and otolith afferents to linear acceleration (abstract). Society for Neuroscience Abstracts 7: 148, 1981.

122. Pugh, J.E., Greenberg, H.S., Anderson*, D.J., Andres, R.O., and Werness, S.A.A. A computerized dynamic platform system for assessment of posture in neurologic patients (abstract). Neurology 31(2): 95, 1981.

123. Reschke*, M.F., Homick*, J.L., Anderson*, D.J., and Baker, J.T. Soleus-spinal H-reflex measurement as a method of evaluating otolith induced changes in the anti-gravity muscle. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 268-269, 1981.

124. Rubertone, J.A. and Mehler*, W.R. Afferents to the vestibular complex in rat. A horseradish peroxidase study (abstract). Society for Neuroscience Abstracts 6: 225, 1980.

125. Rubertone, J.A. and Mehler*, W.R. Corticovestibular and vestibulocerebellar projections in the rat. A horseradish peroxidase study (abstract). Anatomical Record 199(3): 219A, 1981.

126. Ryan, P.C. and Reschke*, M.F. Modulation of soleus-spinal motoneuron excitability as a function of steady-state (D.C.) accelerations. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 264-265, 1981.

127. Schor, R.H. Otolith contribution to neck and forelimb vestibulospinal reflexes. In: Progress in Oculomotor Research (Fuchs, A.F., Becker, W., eds.). Amsterdam: Elsevier/ North-Holland, p. 351-356, 1981.

128. Schor, R.H. and Miller, A.D. Vestibular reflexes in neck and forelimb muscles evoked by roll tilt. Journal of Neurophysiology 46(1): 167-178, 1981.

129. Schor, R.H., Miller, A.D., and Wilson*, V.J. Response patterns of central vestibular neurons to modulated otolith input (abstract). Society for Neuroscience Abstracts 7: 690, 1981.

130. Trune, D.R. and Lim*, D.J. Central vestibular changes in otoconia-deficient pallid mice. Presented at the 5th Mid-winter Research Meeting, Association for Research in Otolaryngology, St. Petersburg, FL, Jan. 18-21, 1982.

131. Whittington, D.A., Hepp-Reymond, M.-C., and Flood, W. Eye and head movements to auditory targets. Experimental Brain Research 41: 358-363, 1981.

132. Wicke, R.W. and Oman*, C.M. Visual and graviceptive influences on lower leg EMG activity during brief falls (abstract). Society for Neuroscience Abstracts 6: 225, 1980.

133. Young*, L.R., Lichtenberg, B.K., Arrott, A.P., Crites, T.A., Oman*, C.M., and Edelman, E.R. Ocular torsion on Earth and in weightlessness. Annals of the New York Academy of Sciences 374: 80-92, 1981.

134. Zacharias, G.L. and Young*, L.R. Influence of combined visual and vestibular cues on human perception and control of horizontal rotation. Experimental Brain Research 41(2): 159-171.

Bone Alterations

135. Altchuler*, S.I., Brand, S.N., and White, R.J. A mathematical model of calcium metabolism. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 309-310, 1981.

136. Amtmann, E., Oyama*, J., and Potulski, M. Effect of chronic centrifugation on the cross-sectional shape of long bones in dogs. Gegenbaurs Morphologisches Jahrbuch 127(3): 382-390, 1981.

137. Barden, H.S., Mazess*, R.B., Rose, P.G., and McAweeney, W. Bone mineral status measured by direct photon absorptiometry in institutionalized adults receiving long-term anticonvulsant therapy and multivitamin supplementation. Calcified Tissue International 31: 117-121, 1980.

138. Cann, C.E. Low-dose CT scanning for quantitative spinal mineral analysis. Radiology 140: 813-815, 1981.

139. Cann, C.E., Adachi, R.R., and Morey-Holton*, E. Bone resorption and calcium absorption in rats during spaceflight. Physiologist 23(6, suppl): S83-S86, 1980.

140. Cann, C.E., Faul, D.D., Couch, J.L., Boyd, D.P., and Genant*, H.K. Composition-selective measurement of mineral content in the axial and appendicular skeleton (abstract). Investigative Radiology 16: 364, 1981.

141. Cann, C.E. and Genant*, H.K. Cross-sectional studies of vertebral mineral using quantitative computer tomography. Journal of Computer Assisted Tomography 6(1): 216-218, 1982.

142. Cann, C.E., Genant*, H.K., and Young*, D.R. Comparison of vertebral and peripheral mineral losses in disuse osteoporosis in monkeys. Radiology 134(2): 525-529, 1980.

143. Chesney, R.W., Mazess*, R.B., and DeLuca, H.F. Long-term influence of calcitriol ($1,25OH_2D$) and supplemental phosphate (PO_4) in X-linked hypophosphatemic rickets (abstract). Clinical Research 29(2): 403A, 1981.

144. Chesney, R.W., Zimmerman, J., Hamstra, A., DeLuca, H.F., and Mazess*, R.B. Vitamin D metabolite concentration in vitamin D deficiency: Are calcitriol levels normal? American Journal of Diseases of Children 135: 1025-1028, 1981.

145. Di Ferrante*, D.T., Wilson, N.Y., and Leach*, C.S. Chromatographic method for the measurement of hydroxylysine, hydroxylysine glycosides and 3-methylhistidine in human urine. Journal of Chromatography 187(1): 271-276, 1980.

146. Genant*, H.K., Cann, C.E., Ettinger, B., and Gordan, G.S. Bone mineral determination in the axial and appendicular skeleton of oophorectomized women (abstract). In: Program and Abstracts, 62nd Annual Scientific Meeting of the Endocrine Society. Bethesda, MD: Endocrine Society, p. 290, 1980.

147. Genant*, H.K., Cann, C.E., Ettinger, B., and Gordan, G.S. Spinal bone mineral loss assessed by quantitative computed tomography (CT) (abstract). Presented at the 15th International Congress of Radiology, Brussels, June 24-July 1, 1981.

148. Gould, R.G. and Genant*, H.K. Quantitative and qualitative comparison of two microfocus-tube imaging systems. Radiology 138: 195-201, 1981.

149. Jee*, W.S.S., Kimmel, D.B., Smith, C., and Dell, R.B. K-305: Quantitative analysis of selected bone parameters. Supplemental report 2: Bone elongation rate and bone mass in metaphysis of long bones. In: Final Reports of US Rat Experiments Flown on the Soviet Satellite Cosmos 1129 (Heinrich, M.R., Souza, K.A., eds.). NASA, Ames Research Center, Moffett Field, CA, p. 149-175, Aug. 1981. (NASA-TM-81289)

150. Judy, M.M., Leconey, T.R., Matthews, J.L., and Jee*, W.S.S. Measurement of trabecular spacing and orientation by optical diffraction. Metabolic Bone Disease and Related Research 2(Suppl): 291-295, 1980.

151. Kazarian, L., Cann, C., Parfitt, M., Simmmons, D., and Morey-Holton*, E. A 14-Day Ground-based Hypokinesia Study in Nonhuman Primates: A Compilation of Results. NASA, Ames Research Center, Moffett Field, CA, 57 p., April 1981. (NASA-TM-81268)

152. Kenny*, A.D. Inhibition of disuse atrophy of bone in rats by continuous subcutaneous infusion of benzolamide (abstract). Calcified Tissue International 31: 53, 1980.

153. Kuttan, R. and Di Ferrante, N. Sirius red-collagen interaction: A method for the measurement of collagen and bacterial collagenase activity. Biochemistry International 1: 455-462, 1980.

154. Kuttan, R., Wilson, N., and Tenni, R. Determination of gamma-carboxyglutamic acid excretion in urine. Journal of Chromatography 223: 182-187, 1981.

155. Mazess*, R.B., Peppler, W.W., Chestnut, C.H., III, Nelp, W.B., Cohn, S.H., and Zanzi, I. Total body bone mineral and lean body mass by dual-photon absorptiometry. II. Comparison with total body calcium by neutron activation analysis. Calcified Tissue International 33: 361-363, 1981.

156. Mazess*, R.B., Peppler, W.W., Harrison, J.E., and McNeill, K.G. Total body bone mineral and lean body mass by dual-photon absorptiometry. III. Comparison with trunk calcium by neutron activation analysis. Calcified Tissue International 33: 365-368, 1981.

157. McDonald, J., Schneider*, V., Rambaut*, P., Dietlein*, L., and Whedon, G.D. Prevention of disuse osteoporosis: Clodronate therapy (abstract). Federation Proceedings 40(3): 920, 1981.

158. Messier, A.A., Cohn, S.H., Neer*, R.M., Vaswani, A., Tappan, D.V., and Bondi, K.R. Assessment of bone and body composition in recently retired and active duty submariners (abstract). Federation Proceedings 40(3): 920, 1981.

159. Mondon, C.E., Dolkas*, C.B., and Oyama*, J. Enhanced skeletal muscle insulin sensitivity in year-old rats adapted to hypergravity. American Journal of Physiology 240(5): E482-E488, 1981.

160. Peppler, W.W. and Mazess*, R.B. Total body bone mineral and lean body mass by dual-photon absorptiometry. I. Theory and measurement procedure. Calcified Tissue International 33: 353-359, 1981.

161. Puzas, J.E., Drivdahl, R.H., Howard, G.A., and Baylink, D.J. Evidence for local regulation of bone metabolism: A potent inhibitor of bone cell proliferation (abstract). Clinical Research 28(1): 53A, 1980.

162. Reeve, J., Arlot, M., Bernat, M., Charhon, S., Edouard, C., Slovik, D., Vismans, F.J.F.E., and Meunier, P.J. Calcium-47 kinetic measurements of bone turnover compared to bone histomorphometry in osteoporosis: The influence of human parathyroid fragment (hPTH 1-34) therapy. Metabolic Bone Disease and Related Research 3: 23-30, 1981.

163. Reeve, J., Bijvoet, O.L.M., Neer*, R.M., Slovik, D., Tellez, M., Vismans, F.J.F.E., and Zanelli, G.D. A comparison between the balance method and radiotracer methods for measuring calcium absorption in treated and untreated patients with osteoporosis. Metabolic Bone Disease and Related Research 2: 233-238, 1980.

164. Reeve, J., Meunier, P.J., Parsons, J.A., Bernat, M., Bijvoet, O.L.M., Courpron, P., Edouard, C., and Klenerman, L. Anabolic effect of human parathyroid hormone fragment on trabecular bone in involutional osteoporosis: A multicentre trial. British Medical Journal 280: 1340-1344, 1980.

165. Riggs, B.L., Wahner, H.W., Dunn, W.L., Mazess*, R.B., Offord, K.P., and Melton, L.J., III. Differential changes in bone mineral density of the appendicular and axial skeleton with aging. Journal of Clinical Investigation 67: 328-335, 1981.

166. Sabelman, E.E., Chetirkin, P.V., and Howard, R.M. Simulated Spaceflight Effects on Mating and Pregnancy of Rats. NASA, Ames Research Center, Moffett Field, CA, 44 p., 1981. (NASA-TM-81326)

167. Slovik, D.M., Neer, R.M., Ohman, J.L., Lowell, F.C., Clark, M.B., Segre, G.V., and Potts, J.T., Jr. Parathyroid hormone and 25-hydroxyvitamin D levels in glucocorticoid-treated patients. Clinical Endocrinology 12: 243-248, 1980.

168. Slovik, D.M., Neer*, R.M., and Potts, J.T., Jr. Short-term effects of synthetic human parathyroid hormone-(1-34) administration on bone mineral metabolism in osteoporotic patients. Journal of Clinical Investigation 68: 1261-1271, 1981.

169. Stalp, J.T. and Mazess*, R.B. Determination of bone density by coherent-Compton scattering. Medical Physics 7(6): 723-726, 1980.

170. Wronski, T.J., Morey-Holton*, E., and Jee*, W.S.S. Cosmos 1129: Spaceflight and bone changes. Physiologist 23(6, Suppl): S79-S82, 1980.

171. Wronski, T.J., Smith, J.M., and Jee*, W.S.S. Variations in mineral apposition rate of trabecular bone within the beagle skeleton. Calcified Tissue International 33: 583-586, 1981.

172. Young*, D.R. and Schneider*, V.S. Radiographic evidence of disuse osteoporosis in the monkey (M. nemestrina). Calcified Tissue International 33: 631-639, 1981.

Muscle Atrophy

173. Booth*, F.W., Seider, M.J., and Hugman, G.R. Effects of disuse by limb immobilization on different muscle fiber types. In: Plasticity of Muscle (Pette, D., ed.). New York: Walter de Gruyter, p. 373-383, 1980.

174. Booth*, F.W., Tucker, K.R., and Nicholson, W.F. Effect of adrenalectomy on the immobilization-induced decrease in muscle protein synthesis rate (abstract). Medicine and Science in Sports and Exercise 13(2): 86, 1981.

175. Booth*, F.W., Tucker, K.R., and Nicholson, W.F. Modified methodology to estimate muscle protein synthesis rate (abstract). Federation Proceedings 40(3): 513, 1981.

176. Chui, L.A., Castleman, K.R., and Van der Meulen, J.P. Morphometric analysis of rat muscle fibers following space flight. In: Advances in Physiological Sciences, Vol. 19. Gravitational Physiology (Hideg, J.; Gazenko, O., eds.). New York: Pergamon, p. 113-119, 1981.

177. Courtright, J.B., Song, E., Witzmann, F.A., Kim, D.H., Unsworth, B.R., and Fitts*, R.H. Alterations in sarcoplasmic and mitochondrial enzymes during immobilization of fast and slow muscle (abstract). Medicine and Science in Sports and Exercise 12(2): 91, 1980.

178. Day, L.J. and Riley, D.A. Effects of hypothyroidism and denervation on the actomyosin ATPase activity of rat soleus muscle fibers (abstract). Anatomical Record 196(3): 43A, 1980.

179. Feller, D.D., Ginoza, H.S., and Morey*, E.R. Atrophy of rat skeletal muscles in simulated weightlessness (abstract). Pfluegers Archiv 391(Suppl): R60, 1981.

180. Feller*, D.D., Ginoza*, H.S., Morey*, E.R., and Oyama*, J. Proteolytic activity of atrophied and hypertrophied soleus muscle from rats (abstract). Federation Proceedings 39(3): 818, 1980.

181. Fitts*, R.H., Courtright, J.B., Kim*, D.H., and Witzmann, F.A. Muscle fatigue with prolonged exercise: Contractile and biochemical alterations. American Journal of Physiology 242(1): C65-C73, 1982.

182. Ginoza*, H.S., Feller*, D.D., and Morey*, E.R. Protein turnover in atrophied muscle from rats in simulated weightlessness (abstract). Federation Proceedings 40(3): 743, 1981.

183. Hoar, P.E. and Kerrick*, W.G.L. Differentiation of cat muscle fiber types: use of skinned fibers (abstract). Biophysical Journal 37: 128a, 1982.

184. Kim, D.H., Courtright, J.B., Unsworth, B.R., Witzmann, F.A., and Fitts*, R.H. The effect of hindlimb immobilization on the sarcoplasmic reticulum of fast and slow skeletal muscle (abstract). Medicine and Science in Sports and Exercise 12(2): 90-91, 1980.

185. Kim, D.H., Wible, G.S., Witzmann, F.A., and Fitts*, R.H. The effect of exercise-training on sarcoplasmic reticulum function in fast and slow skeletal muscle. Life Sciences 28: 2671-2677, 1981.

186. Kim, D.H., Witzmann, F.A., and Fitts*, R.H. A comparison of sarcoplasmic reticulum function in fast and slow skeletal muscle using crude homogenate and isolated vesicles. Life Sciences 28: 2223-2229, 1981.

187. Max*, S.R. Cytosolic androgen receptor in skeletal muscle from normal and testicular feminization mutant (Tfm) rats. Biochemical and Biophysical Research Communications 101: 792-799, 1981.

188. Max*, S.R., Mufti, S., and Carlson, B.M. Androgen receptor in regenerating rat levator ani muscle (abstract). Society for Neuroscience Abstracts 7: 554, 1981.

189. Max*, S.R., Mufti, S., and Carlson, B.M. Cytosolic androgen receptor in regenerating rat levator ani muscle. Biochemical Journal 200: 77-82, 1981.

190. Nguyen, N.Y., Baumann, G., Arbegast, D.E., Grindeland*, R.E., and Chrambach, A. Isolation of human growth hormone isohormones D and E in milligram amounts (I), using isotachophoresis on polyacrylamide gel. Preparative Biochemistry 11(2): 139-157, 1981.

191. Nguyen, N.Y., Grindeland*, R.E., and Chrambach, A. Isolation of human growth hormone B selective steady-state stacking (abstract). Federation Proceedings 40(6): 1868, 1981.

192. Nicholson, W.F., Seider, M.J., and Booth*, F.W. Insulin resistance in soleus muscle of immobilized mouse limbs (abstract). Federation Proceedings 40(3): 459, 1981.

193. Popiela, H. and Ellis*, S. Neurotrophic factor: Characterization and partial purification. Developmental Biology 83: 266-277, 1981.

194. Roy, R.R., Wong, B., Baldwin*, K.M., and Edgerton, V.R. Fatigue properties of functionally overloaded rat muscle (abstract). Medicine and Science in Sports and Exercise 13(2): 140, 1981.

195. Searle, G.L., Gerend, P.L., and Feller*, D.D. Gluconeogenesis from alanine in the fed dexamethasone treated rat (abstract). Federation Proceedings 39(3): 1179, 1980.

196. Seider, M.J., Kapp, R., Chen, C.P., and Booth*, F.W. The effects of cutting or of stretching skeletal muscle in vitro on the rates of protein synthesis and degradation. Biochemical Journal 188(1): 247-254, 1980.

197. Seider, M.J., Nicholson, W.F., and Booth*, F.W. Insulin resistance for glucose metabolism in disused soleus muscle of mice. American Journal of Physiology 242(1): E12-E18, 1982.

198. Tenni, R., Tavella, D., Donnelly, P., Di Ferrante*, N., Hill, L., Leach*, C., and Hatton, D. Cultured fibroblasts of juvenile diabetics have excessively soluble pericellular collagen. Biochemical and Biophysical Research Communications 92(4): 1071-1075, 1980.

199. Toop, J. and Max*, S.R. Testosterone enhances [^{14}C] 2-deoxyglucose uptake by rat levator ani muscles in vivo (abstract). Society for Neuroscience Abstracts 7: 554, 1981.

200. Troup, J.P., Witzmann, F.A., and Fitts*, R.H. The effect of hindlimb immobilization on skeletal muscle acid hydrolase activity (abstract). Medicine and Science in Sports and Exercise 13(2): 86, 1981.

201. Tucker, K.R., Seider, M.J., and Booth*, F.W. Protein synthesis rates in atrophied gastrocnemius muscles after limb immobilization. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 51(1): 73-77, 1981.

202. Witzmann, F.A., Kim, D.H., and Fitts*, R.H. The effect of hindlimb immobilization on the contractile properties of fast and slow skeletal muscle (abstract). Medicine and Science in Sports and Exercise 12(2): 91, 1980.

203. Witzmann, F.A., Kim, D.H., and Fitts*, R.H. Recovery of fast and slow skeletal muscle from disuse (abstract). Medicine and Science in Sports and Exercise 13(2): 82, 1981.

Blood Cell Alterations

204. Baky*, A.A., Winkler, D.G., Hunter, N.R., Greenberg, S.D., Hodapp, C.J., and Kimzey*, S.L. Nuclear boundary detection algorithm based on a minimax derivative statistic for atypical bronchial squamous epithelial cells. Analytical and Quantitative Cytology 3(1): 33, 1981.

205. Baky*, A.A., Winkler, D.G., Hunter, N.R., Subach, J.A., Greenberg, S.D., Spjut, H.J., Estrada, R., and Kimzey*, S.L. Atypia status index of respiratory cells. A measurement for the detection and monitoring of neoplastic changes in squamous cell carcinogenesis. Analytical and Quantitative Cytology 2(3): 175-185, 1980.

206. Blajchman, M.A., Senyi, A.F., Hirsh, J., Genton, E., and George*, J.N. Hemostatic function, survival, and membrane glycoprotein changes in young versus old rabbit platelets. Journal of Clinical Investigation 68: 1289-1294, 1981.

207. Castleman*, K.R., Chui, L.A., and Van der Meulen, J.P. Experiment K-308: Automatic analysis of muscle fibers from rats subjected to spaceflight. In: Final Reports of US Rat Experiments Flown on the Soviet Satellite Cosmos 1129 (Heinrich, M.R.; Souza, K.A., eds.). NASA, Ames Research Center, Moffett Field, CA, p. 267-278, Aug. 1981. (NASA-TM-81289)

208. Castleman*, K.R. and White, B.S. The effect of abnormal cell proportion on specimen classifier performance. Cytometry 2: 155-158, 1981.

209. Castleman*, K.R. and White, B.S. Optimizing cervical cell classifiers. Analytical and Quantitative Cytology Journal 2(2): 117-122, 1980.

210. Castleman*, K.R. and White, B.S. Optimizing cervical specimen classifiers. IEEE Transactions on Pattern Analysis and Machine Intelligence PAMI-2(5): 451-457, 1980.

211. Castleman*, K.R. and White, B.S. The tradeoff of cell classifier error rates. Cytometry 1(2): 156-160, 1980.

212. Chui, L.A. and Castleman*, K.R. Morphometric analysis of rat muscle fibers following space flight and hypogravity. Physiologist 23(6, Suppl): S76-S78, 1980.

213. Dunn*, C.D.R. Animal modeling of the erythropoietic effect of spaceflight. In: Proceedings of the 34th Annual Conference on Engineering in Medicine and Biology. Bethesda, MD: Alliance for Engineering in Medicine and Biology, p. 241, 1981.

214. Dunn*, C.D.R. Effect of food or water restriction on erythropoiesis in mice: Relevance to "anemia" of space flight. American Journal of Physiology 238: R301-R305, 1980.

215. Dunn*, C.D.R. and Boden, D:J. Three commercial immunoradiometric "kit" assays for serum ferritin evaluated. Clinical Chemistry 27(7): 1280-1283, 1981.

216. Dunn*, C.D.R., Boden, D.J., and Wallace, L.D. Conditions for the storage of whole blood to maintain the hemoglobin oxygen dissociation curve (ODC) (abstract). Blood 58(Suppl 1): 180A, 1981.

217. Dunn*, C.D.R. and Davidson, J.W. Technological modifications of the in vitro fetal mouse liver cell (FMLC) assay for erythropoietin (Ep) (abstract). Experimental Hematology 9(Suppl 9): 194, 1981.

218. Dunn*, C.D.R., Davidson, J.W., and Gibson, L. Technological modification of the in vitro fetal mouse liver cell (FMLC) assay for erythropoietin (Ep) (abstract). Paper Presented at the Nikko Symposium on the Regulation of Erythropoiesis, Nikko, Japan, July 22-27, 1981.

219. Dunn*, C.D.R., Davidson, J.W., and Gibson, L. Validations of some technical changes in an in vitro bioassay for erythropoietin (Ep) using fetal mouse liver cells (FMLC) (abstract). Blood 58(Suppl 1): 95A, 1981.

220. Dunn*, C.D.R. and Johnson*, P.C. Hematological effects of spaceflight. In: Proceedings of the 34th Annual Conference on Engineering in Medicine and Biology. Bethesda, MD: Alliance for Engineering in Medicine and Biology, p. 230, 1981.

221. Dunn*, C.D.R., Johnson, P.C., and Leonard, J.I. Erythropoietic effects of spaceflight re-evaluated. Physiologist 24(6, Suppl): S5-S6, 1981.

222. Dunn*, C.D.R., Johnson*, P.C., and Leonard, J.I. Erythropoietic effects of spaceflight re-evaluated (abstract). Pfluegers Archiv 391(Suppl): R59, 1981.

223. Dunn*, C.D.R. and Lange*, R.D. Erythropoietin: Assay and characterization. In: Topical Reviews in Haematology, Vol. 1 (Roath, S., ed.). Bristol: John Wright, p. 1-32, 1980.

224. Dunn*, C.D.R. and Lange*, R.D. Erythropoietin titers in normal human serum: An appraisal of assay techniques. Experimental Hematology 8(3): 231-235, 1980.

225. Dunn*, C.D.R. and Lange*, R.D. Methods for the measurement of multiple parameters of erythroid regulation within individual mice. Laboratory Animal Science 30(6): 997-1002, 1980.

226. Dunn*, C.D.R., Leonard, J.I., and Kimzey*, S.L. Interactions of animal and computer models in investigations of the "anemia" of space flight. Aviation, Space, and Environmental Medicine 52: 683-690, 1981.

227. Dunn*, C.D.R. and Napier, J.A.F. The in vitro mouse liver cell bioassays for erythropoietin: Experimental protocols and "trouble-shooting". Experimental Hematology 8(Suppl 8): 349-359, 1980.

228. Dunn*, C.D.R. and Smith, L.N. The effect of dehydration on erythroid progenitor cells in mice. Experimental Hematology 8(5): 620-625, 1980.

229. Dunn*, C.D.R., Smith, L.N., Leonard, J.I., Andrews, R.B., and Lange*, R.D. Animal & computer investigations into the murine erythroid response to chronic hypoxia. Experimental Hematology 8(Suppl 8): 259-282, 1980.

230. Dunn*, C.D.R. and Trent, D. The effect of parathyroid hormone on erythropoiesis in serum-free cultures of fetal mouse liver cells. Proceedings of the Society for Experimental Biology and Medicine 166: 556-561, 1981.

231. Dunn*, C.D.R. and Trent, D. Modulation of erythropoiesis by parathyroid hormone (PTH) in serum-free cultures of fetal mouse liver cells (abstract). Experimental Hematology 8(Suppl 7): 126, 1980.

232. George*, J.N. Circulating human platelet membrane microparticles (abstract). Clinical Research 29(2): 333A, 1981.

233. George*, J.N. and Morgan, R.K. Glanzmann's thrombasthenia: Deficient association of actin with the platelet membrane following thrombin-induced secretion. Thrombosis Research 22: 503-506, 1981.

234. George*, J.N. and Onofre, A.R. Human platelet surface binding of endogenous secreted factor VIII-von Willebrand factor and platelet factor 4. Blood 59(1): 194-197, 1982.

235. George*, J.N., Reimann, T.A., Thoi, L.L. and Morgan, R.K. Circulating human platelet membrane microparticles (abstract). Thrombosis and Haemostasis 49: 96A, 1981.

236. George*, J.N., Sears, D.A., and Morgan, R.K. Glanzmann's thrombasthenia: Studies of surface proteins of platelets and red cells with (^{125}I)-diazotized diiodosulfanilic acid and SDS-polyacrylamide gel electrophoresis. Thrombosis Research 19(1/2): 283-286, 1980.

237. George*, J.N., Thoi, L.L., and Morgan, R.K. Quantitative analysis of platelet membrane glycoproteins: Effect of platelet washing procedures and isolation of platelet density subpopulations. Thrombosis Research 23: 69-77, 1981.

238. Kimzey*, S.L., Greenberg, S.D., Baky*, A.A., and Winkler, D.G. Cell atypia profiles for bronchial epithelial cells. Analytical and Quantitative Cytology 2(3): 186-194, 1980.

239. Landaw*, S.A., Rathbun, S.C., and Guancial, R.L. The effect of spectrin cross-linking on red blood cell (RBC) membrane properties & survival (abstract). Pediatric Research 14(4): 536, 1980.

240. Landaw*, S.A., Rathbun, S.C., and Guancial, R.L. Evidence for a tightly-linked spectrin lattice in newborn (NB) rat red blood cells (RBC) (abstract). Pediatric Research 14(4): 536, 1980.

241. Lange*, R.D. Production of erythropoietin and burst promoting activity. Experimental Hematology 8(Suppl 8): 333-345, 1980.

242. Lange*, R.D., Chen, J.P., and Dunn*, C.D.R. Erythropoietin assays: Some new and different approaches. Experimental Hematology 8(Suppl 8): 197-224, 1980.

243. Leon*, H., Willis, A., Landaw*, S., Fisher, J., and Fleming, J. Effect of prostaglandin E_2 (PGE_2) on guinea pig and human red cells (RBC) (abstract). Federation Proceedings 39(3): 391, 1980.

244. Leon*, H.A. and Fleming, J.E. Extremes of urine osmolality: Lack of effect on red blood cell survival. American Journal of Physiology 239: C27-C31, 1980.

245. Leon*, H.A., Landaw*, S.A., and Fleming, J.E. Acute increased hemolysis in post-hypoxia polycythemic rats (abstract). Federation Proceedings 40(3): 609, 1981.

246. Leon*, H.A., Serova, L.V., and Landaw*, S.A. Effect of weightlessness and centrifugation on red cell survival in rats subjected to space flight. Aviation, Space, and Environmental Medicine 51(10): 1091-1094, 1980.

247. Leonard, J.I., Kimzey*, S.L., and Dunn*, C.D.R. Dynamic regulation of erythropoiesis: A computer model of general applicability. Experimental Hematology 9(4): 355-378, 1981.

248. Leonard, J.I., White*, R.J., and Rummel, J.A. An integrative approach to space-flight physiology using systems analysis and mathematical simulation. In: The 11th Space Simulation Conference (Bond, A.C., ed.). NASA, Johnson Space Center, Houston, TX, p. 149-162, 1980. (NASA-CP-2150)

249. Levine, S.P., Sorenson, R., and Raymond, N.M. Exercise-induced platelet secretion in ischemic heart disease (abstract). Clinical Research 29(2): 338A, 1981.

250. Roberts, N.K. and Castleman*, K.R. Computer imaging of the atrioventricular node and bundles. Pediatric Cardiology 1: 275-279, 1980.

251. Suarez, A.J., Levine, S.P., and George*, J.N. Emotional stress, plasma catecholamines, and the activation of circulating platelets (abstract). Clinical Research 29(5): 83A, 1981.

252. White, B.S. and Castleman*, K.R. Estimating cell populations. Pattern Recognition 13(5): 365-370, 1981.

253. White, B.S., Castleman*, K.R., Stern, E., Rosenthal, D.L., and McLatchie, C. Ranking features for cervical cell classification. In: Pattern Recognition in Practice (Gelsema, E.S.; Kanal, L.N., eds.). Amsterdam: North-Holland, p. 427-432, 1980.

Fluid and Electrolyte Changes

254. Abraham, S., Lin, C.Y., Klein*, H.P., Volkmann, C., Tigranyan, R.A., and Vetrova, E.G. Studies of specific hepatic enzymes involved in the conversion of carbohydrates to lipids in rats exposed to prolonged spaceflight aboard Cosmos-1129. In: Advances in Physiological Sciences, Vol. 19. Gravitational Physiology (Hideg, J.; Gazenko, O., eds.). New York: Pergamon, p. 71-77, 1981.

255. Barnes, L.D., Guy, M.N., Lifschitz*, M.D., and Kreisberg, J.I. Angiotensin II receptors in mesangial cells cultured from rat renal glomeruli (abstract). Kidney International 19(1): 163, 1981.

256. Cody, R.J., Burton, J., Evin, G., Poulsen, K., Herd, J.A., and Haber, E. A substrate analog inhibitor of renin that is effective in vivo. Biochemical and Biophysical Research Communications 97(1): 230-235, 1980.

257. Crantz, F.R., Swartz, S.L., Hollenberg*, N.K., Moore, T.J., Dluhy, R.G., and Williams, G.H. Differences in response to the peptidyldipeptide hydrolase inhibitors SQ 20,881 and SQ 14,225 in normal-renin essential hypertension. Hypertension 2(5): 604-609, 1980.

258. Dzau, V.J., Colucci, W.S., Hollenberg*, N.I., and Williams, G.H. Relation of the renin-angiotensin-aldosterone system to clinical state in congestive heart failure. Circulation 63(3): 645-651, 1981.

259. Dzau, V.J., Colucci, W.S., Williams, G.H., Curfman, G., Meggs, L., and Hollenberg*, N.K. Sustained effectiveness of converting-enzyme inhibition in patients with severe congestive heart failure. New England Journal of Medicine 302(25): 1373-1379, 1980.

260. Engeland, W.C., Byrnes, G.J., Presnell, K., and Gann*, D.S. Adrenocortical sensitivity to adrenocorticotropin (ACTH) in awake dogs changes as a function of the time of observation and after hemorrhage independently of changes in ACTH. Endocrinology 108(6): 2149-2153, 1981.

261. Epstein*, M., DeNunzio, A.G., and Loutzenhiser, R.D. Effects of vasopressin administration on diuresis of water immersion in normal humans. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 51(6): 1384-1387, 1981.

262. Epstein*, M., DeNunzio, A.G., and Ramachandran, M. Characterization of renal response to prolonged immersion in normal man. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 49(2): 184-188, 1980.

263. Epstein*, M., Flamenbaum, W., and Loutzenhiser, R. Characterization of the renin-angiotensin system in the isolated perfused rat kidney. Renal Physiology 2: 244-256, 1979/80.

264. Epstein*, M. and Lifschitz, M.D. Volume status as a determinant of the influence of renal PGE on renal function. Nephron 25(4): 157-159, 1980.

265. Epstein*, M., Lifschitz*, M.D., Re, R., and Haber*, E. Dissociation of renin-aldosterone and renal prostaglandin E during volume expansion induced by immersion in normal man. Clinical Science 59: 55-62, 1980.

266. Epstein*, M., Preston, S., and Weitzman, R.E. Isoosmotic central blood volume expansion suppresses plasma arginine vasopressin in normal man. Journal of Clinical Endocrinology and Metabolism 52(2): 256-262, 1981.

267. Epstein*, M., Stone, R.A., DeNunzio, A.G., and Frigon, R.P. Relationship between urinary kallikrein and renal sodium handling during water immersion in normal man. Journal of Clinical Endocrinology and Metabolism 50(1): 122-127, 1980.

268. Fox, R., Keil*, L., Daunton*, N., Thomsen, D., Dictor, M., and Chee, O. Changes in plasma vasopressin during motion sickness in cats (abstract). Society for Neuroscience Abstracts 6: 656, 1980.

269. Halperin, E.S., Summy-Long, J.Y., Keil*, L.C., and Severs*, W.B. Aspects of salt/water balance after cerebroventricular infusion of angiotensin II. Brain Research 205: 219-221, 1981.

270. Hollenberg*, N.K. Set point for sodium homeostasis: Surfeit, deficit, and their implications. Kidney International 17(4): 423-429, 1980.

271. Hollenberg*, N.K. Vasodilators and the renal response to therapy of hypertension. In: Arterial Hypertension (Velasco, M., ed.). Amsterdam: Excerpta Medica, p. 51-56, 1980. (International Congress Series, No. 496)

272. Hollenberg*, N.K. and Williams, G.H. Hypertension, the adrenal and the kidney: Lessons from pharmacologic interruption of the renin-angiotensin system. Advances in Internal Medicine 25: 327-361, 1980.

273. Hollenberg*, N.K., Williams, G.H., and Adams, D.F. Essential hypertension: Abnormal renal vascular and endocrine responses to a mild psychological stimulus. Hypertension 3(1): 11-17, 1981.

274. Jerome, M.L., Keil*, L.C., and Severs*, W.B. Consumatory behavior and urine output during prolonged central vasopressin infusion (abstract). Federation Proceedings 40(3): 272, 1981.

275. Kass, D.A., Sulzman, F.M., Fuller, C.A., and Moore-Ede*, M.C. Are ultradian and circadian rhythms in renal potassium excretion related? Chronobiologia 7(3): 343-356, 1980.

276. Kass, D.A., Sulzman, F.M., Fuller*, C.A., and Moore-Ede*, M.C. Renal responses to central vascular expansion are suppressed at night in conscious primates. American Journal of Physiology 239(4): F343-F351, 1980.

277. Katz, J., Williams, G.H., and Hollenberg*, N.K. Plasma concentration and the depressor response to bradykinin infusion. Life Sciences 27(7): 573-576, 1980.

278. Katzberg, R.W., Meggs, L.G., and Hollenberg*, N.K. Renal vascular responses to hypertonic solutions including roentgen contrast agents (abstract). Kidney International 19(1): 246, 1981.

279. Keller-Wood, M.E., Shinsako, J., Keil*, L., and Dallman, M.F. Insulin-induced hypoglycemia in conscious dogs. I. Dose-related pituitary and adrenal responses. Endocrinology 109: 818-824, 1981.

280. Lifschitz*, M.D. Prostaglandins and renal blood flow: In vivo studies. Kidney International 19: 781-785, 1981.

281. Lilly, M.P., Engeland, W.C., and Gann*, D.S. Catecholamine secretion after repeated hemorrhage (HEM) in the anesthetized dog (abstract). Federation Proceedings 40(3): 255, 1981.

282. Lydic, R. and Moore-Ede*, M.C. Three dimensional structure of the suprachiasmatic nuclei in the diurnal squirrel monkey (Saimiri sciureus). Neuroscience Letters 17: 295-299, 1980.

283. Meggs, L.G. and Hollenberg*, N.K. Converting enzyme inhibition and the kidney. Hypertension 2: 551-557, 1980.

284. Meggs, L.G., Katzberg, R.W., Deleeuw, P.W., and Hollenberg*, N.K. Specific desensitization of the renal vasculature to angiotensin II (AII) despite cyclo-oxygenase inhibition (COI) (abstract). Kidney International 19(1): 172, 1981.

285. Montgomery, L.D. and Goldwater*, D. Body fluid redistribution and volume changes during horizontal and antiorthostatic bed rest. In: Preprints of 1980 Annual Scientific Meeting, Aerospace Medical Association, Anaheim, CA, May 12-15, 1980. Washington, D.C.: Aerospace Medical Association, p. 22-23, 1980.

286. Moore-Ede*, M.C. and Kass, D.A. Chronic central vascular expansion induces hypokalemia in conscious primates. Physiologist 23(6, Suppl): S123-S124, 1980.

287. Moore-Ede*, M.C., Kass, D.A., Sulzman, F.M., and Fuller*, C.A. Chronic central vascular expansion induces hypokalemia in conscious primates. In: Advances in Physiological Sciences, Vol. 19. Gravitational Physiology (Hideg, J.; Gazenko, O., eds.). New York: Pergamon, p. 229-233, 1981.

288. Peraino, R.A. and Suki*, W.N. Urine HCO_3^- augments renal Ca^{2+} absorption independent of systemic acid-base changes. American Journal of Physiology 238(5): F394-F398, 1980.

289. Peraino, R.A., Suki*, W.N., and Stinebaugh, B.J. Renal excretion of calcium and magnesium during correction of metabolic acidosis by bicarbonate infusion in the dog. Mineral and Electrolyte Metabolism 3(2): 87-93, 1980.

290. Perez, G.O., Epstein*, M., Rietberg, B., and Horton, C. Functional adaptation to reduction in renal mass: Renal handling of amino acids by isolated perfused remnant rat kidneys. Renal Physiology 4: 157-164, 1981.

291. Perez, G., Epstein*, M., Reitberg, B., Horton, C., and Loutzenhiser, R. Uptake and release of amino acids by normal and remnant kidneys: Studies in the isolated perfused rat kidney. American Journal of Clinical Nutrition 33(7): 1373-1377, 1980.

292. Raymond, L.W., Raymond, N.S., Frattali, V.P., Sode, J., Leach*, C.S., and Spaur, W.H. Is the weight loss of hyperbaric habitation a disorder of osmoregulation? Aviation, Space, and Environmental Medicine 51(4): 397-401, 1980.

293. Schwartz, J., Keil*, L.C., and Reid, I.A. Role of endogenous vasopressin in cardiovascular regulation and renin secretion in conscious dogs (abstract). Federation Proceedings 40(3): 605, 1981.

294. Severs*, W.B., Keil*, L.C., Deen, K.C., and Klase, P.A. Urethane anesthesia in rats: Altered body hydration (abstract). Federation Proceedings 39(3): 408, 1980.

295. Severs*, W.B., Keil*, L.C., Klase, P.A., and Deen, K.C. Urethane anesthesia in rats: altered ability to regulate hydration. Pharmacology 22: 209-226, 1981.

296. Shvartz, E., Convertino, V.A., Keil*, L.C., and Haines, R.F. Orthostatic fluid-electrolyte and endocrine responses in fainters and nonfainters. Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 51: 1404-1410, 1981.

297. Sterling, G.H., Chee, O., Riggs, R.V., and Keil*, L.C. Effect of chronic intracerebroventricular angiotensin II infusion on vasopressin release in rats. Neuroendocrinology 31(3): 182-188, 1980.

298. Suki*, W.N., Rouse, D., Ng, R.C.K., and Kokko, J.P. Calcium transport in the thick ascending limb of Henle. Journal of Clinical Investigation 66(5): 1004-1009, 1980.

299. Summy-Long, J.Y., Keil*, L.C., Deen, K., Rosella, L., and Severs*, W.B. Endogenous opioid peptide inhibition of the central actions of angiotensin. Journal of Pharmacology and Experimental Therapeutics 217(3): 619-629, 1981.

300. Summy-Long, J., Keil*, L.C., Deen, K., and Severs*, W. Opiate inhibition of angiotensin drinking and vasopressin release (abstract). Federation Proceedings 39(3): 762, 1980.

301. Summy-Long, J.Y., Keil*, L.C., Deen, K., and Severs*, W.B. Opiate regulation of angiotensin-induced drinking and vasopressin release. Journal of Pharmacology and Experimental Therapeutics 217(3): 630-637, 1981.

302. Swartz, S.L., Williams, G.H., Hollenberg*, N.K., Crantz, F.R., Levine, L., Moore, T.J., and Dluhy, R.G. Increase in prostaglandins during converting enzyme inhibition. Clinical Science 59: 133S-135S, 1980.

303. Swartz, S.L., Williams, G.H., Hollenberg*, N.K., Crantz, F.R., Moore, T.J., Levine, L., Sasahara, A.A., and Dluhy, R.G. Endocrine profile in the long-term phase of converting-enzyme inhibition. Clinical Pharmacology and Therapeutics 28(4): 499-508, 1980.

304. Swartz, S.L., Williams, G.H., Hollenberg*, N.K., Levine, L., Dluhy, R.G., and Moore, T.J. Captopril-induced changes in prostaglandin production. Journal of Clinical Investigation 65: 1257-1264, 1980.

305. Vernikos-Danellis*, J. Adrenocortical responses of humans to group hierarchy, confinement and social interaction. In: Coping and Health (Levine, S.; Ursin, H., eds.). New York: Plenum, p. 225-232, 1980. (NATO Conference Series: III, Human Factors, Vol. 12)

306. Vernikos-Danellis*, J. and Heybach, J.P. Psychophysiologic mechanisms regulating the hypothalamic-pituitary-adrenal response to stress. In: Selye's Guide to Stress Research, Vol. 1 (Selye, H., ed.). New York: Van Nostrand Reinhold, p. 206-251, 1980.

307. Wilkes, B.M. and Hollenberg*, N.K. Loss of the glomerular contractile response to angiotensin in rats protected against acute renal failure by prior insult (abstract). Kidney International 19(1): 217, 1981.

308. Wood, C.E., Shinsako, J., Keil*, L.C., Ramsay, D.J., and Dallman, M.F. Hormonal and hemodynamic responses to 15 ml/kg hemorrhage in conscious dogs: Responses correlate to body temperature. Proceedings of the Society for Experimental Biology and Medicine 167: 15-19, 1981.

309. Wright, L.F., Rosenblatt, S.G., and Lifschitz*, M.D. High urine flow rate increases prostaglandin E excretion in the conscious dog. Prostaglandins 22: 21-34, 1981.

310. Zager, P.G., Hsueh, W.A., Luetscher*, J.A., Biglieri, E.G., and Dowdy, A.J. Effect of des-Asp^1-angiotensin II on secretion and metabolism of aldosterone. Journal of Clinical Endocrinology and Metabolism 50(5): 874-878, 1980.

Radiation Effects and Protection

311. Ainsworth*, E.J. Life span studies on mice exposed to heavy charged particles or photons: Preliminary results. In: Biological and Medical Research with Accelerated Heavy Ions at the Bevalac, 1977-1980. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 293-301, Nov. 1980. (LBL-11220)

312. Benton*, E.V., Henke, R.P., Frank, A.L., Johnson, C.S., Cassou, R.M., Tran, M.T., and Etter, E. Space radiation dosimetry aboard Cosmos 1129: US portion of experiment K-309. In: Final Reports of US Plant and Radiation Dosimetry Experiments Flown on the Soviet Satellite Cosmos 1129 (Heinrich, M.R.; Souza, K.A., eds.). NASA, Ames Research Center, Moffett Field, CA, p. 123-188, May 1981. (NASA-TM-81288)

313. Bidasaria, H.B. and Townsend, L.W. Analytic Optical Potentials for Nucleon-Nucleus and Nucleus-Nucleus Collisions Involving Light and Medium Nuclei. NASA, Langley Research Center, Hampton, VA, 20 p., Jan 1982. (NASA-TM-83224)

314. Braby*, L.A. and Metting, N.F. Calculations of radiation quality suitable for a portable REM monitor (abstract). Health Physics 41(6): 866, 1981.

315. Cecil, R.A., Anderson, B.D., Baldwin, A.R., Madey, R., Schimmerling, W., Kast, J.W., and Ortendahl, D. Inclusive neutron production by 337 MeV/nucleon neon ions on carbon, aluminum, copper, and uranium. Physical Review C 24(5): 2013-2029, 1981.

316. Cox, A.B., Keng, P.C., Glass, N.L., and Lett*, J.T. Effects of heavy ions on rabbit tissues: Alopecia. International Journal of Radiation Biology 40: 645-657, 1981.

317. Fine, A.S., Egnor, R.W., Forrester, E., Philpott*, D., and Stahl, S.S. X-ray microanalysis of adenylate cyclase reaction products in palatal mitochondria (abstract). Journal of Dental Research 60(Spec Iss A): 546, 1981.

318. Gruhn, T.A., Li, W.K., Benton*, E.V., Cassou, R.M., and Johnson, C.S. Etching mechanism and behaviour of polycarbonates in hydroxide solution: Lexan and CR-39. In: Solid State Nuclear Detectors (Francois, H., et al., eds.). New York: Pergamon, p. 291, 1980.

319. Heinrich, W., Drechsel, H., Rudat, R., Benton*, E.V., and Hildebrand, D. A method for fragmentation analysis of accelerated high-energy heavy-ion beams. Nuclear Instruments and Methods 190: 369-376, 1981.

320. Henke, R.P., Benton*, E.V., and Cassou, R.M. A method of automated HZE-particle Z-spectra measurement in plastic nuclear track detectors. In: Solid State Nuclear Track Detectors (Francois, H., et al., eds.). New York: Pergamon, p. 509-516, 1980.

321. Hildebrand, D. and Benton*, E.V. The chemical etching behavior of cellulose nitrate. Nuclear Tracks 4: 77-90, 1980.

322. Hildebrand, D., Benton*, E.V., Henke, R.P., and Heinrich, W. Fragmentation of high energy argon ions in water. In: Solid State Nuclear Track Detectors (Francois, H., et al., eds.). New York: Pergamon, p. 855-860, 1980.

323. Johnson, C.S., Benton*, E.V., Cassou, R.M., Henke, R.P., and Hildebrand, D.J. A study of the critical dip angle for track registration in plastic track detectors. In: Solid State Nuclear Track Detectors (Francois, H., et al., eds.). New York: Pergamon, p. 303-310, 1980.

324. Keng, P.C., Lee, A.C., Cox, A.B., Bergtold, D.S., and Lett*, J.T. Effects of heavy ions on rabbit tissues: Cataractogenesis. International Journal of Radiation Biology 41(2): 127-137, 1982.

325. Keng, P.C. and Lett*, J.T. Effects of heavy ions on rabbit tissues: Loss of electroretinogram and DNA repair in retinal photoreceptor cells. International Journal of Radiation Biology 39: 655-664, 1981.

326. Kovalev, E.E., Benton*, E.V., and Marenny, A.M. Measurement of LET spectra aboard Cosmos-936 biological satellite. Radiation Protection Dosimetry 1(3): 169-173, 1981.

327. Lett*, J.T. Measurement of single-strand breaks by sedimentation in alkaline sucrose gradients. In: DNA repair: A laboratory manual of research procedures, Vol. 1 (Friedberg, E.C.; Hanawalt, P.C., eds.). New York: Marcel Dekker, p. 363-378, 1981.

328. Lett*, J.T., Cox, A.B., Keng, P.C., Lee, A.C., Su, C.M., and Bergtold, D.S. Late degeneration in rabbit tissues after irradiation by heavy ions. In: Life Sciences and Space Research, Vol. 18 (Holmquist, R., ed.). New York: Pergamon, p. 131-142, 1980.

329. Madey, R., Cecil, R.A., Anderson, B.D., Baldwin, A.R., Schimmerling, W., Kast, J.W., and Ortendahl, D. Neutral production by relativistic neon ions on carbon, aluminum, copper, and uranium. In: Proceedings of the International Conference on Nuclear Physics. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 617, 1980. (LBL-11118)

330. Madey, R., Cecil, R.A., Anderson, B.D., Baldwin, A.R., Schimmerling, W., Kast, J.W., and Ortendahl, D. Ratios of neutron-to-proton production cross sections for relativistic neon ions on light-, intermediate- and heavy-mass targets (abstract). Paper presented at the 9th International Conference on High Energy Physics and Nuclear Structures, Versailles, France, July 6-10, 1981.

331. Ngo, F.Q.H., Blakely, E.A., Yang, T.C.H., Yezzi, M.J., Tobias, C.A. Cellular damage and repair following heavy-ion irradiation. In: Biological and Medical Research with Accelerated Heavy Ions at the Bevalac, 1977-1980. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 89-101, Nov. 1980. (LBL-11220)

332. Philpott*, D.E., Corbett, R., Turnbill, C., Black, S., Dayhoff, D., McGourty, J., Lee, R., Harrison, G., and Savick, L. Retinal changes in rats flown on Cosmos 936: A cosmic ray experiment. Aviation, Space, and Environmental Medicine 51(6): 556-562, 1980.

333. Schimmerling, W., Benton*, E.V., Hildebrand, D.J., Henke, R.P., Heinrich, W., and Tobias, C.A. Experimental heavy particle physics. In: Biological and Medical Research with Accelerated Heavy Ions at the Bevalac, 1977-1980. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 35-45, Nov. 1980. (LBL-11220)

334. Schimmerling, W., Frankel, K., Rasmussen, J.O., Sullivan, J.P., Murphy, D., Hashimoto, O., Bowman, H., and Ridout, J., et al. Measurements of n-p correlations in the reaction of relativistic neon with uranium (abstract). Bulletin of the American Physical Society 26(8): 1112, 1981.

335. Schimmerling, W., Kast, J.W., Ortendahl, D., Westfall, G., Madey, R., Cecil, R.A., Anderson, B.D., and Baldwin, A.R. Inclusive neutron production by relativistic heavy ions on uranium (abstract). In: Proceedings of the International Conference on Nuclear Physics. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 595, 1980. (LBL-11118)

336. Townsend, L.W. Optical-Model Abrasion Cross Sections for High-Energy Heavy Ions. NASA, Washington, D.C., 15 p., July 1981. (NASA-TP-1893)

337. Townsend, L.W. Projectile-ion fragmentation by abrasion: An optical model approach (abstract). Bulletin of the American Physical Society 26: 596, 1981.

338. Vanderploeg, J.M. and Degioanni*, J.J. Cosmic radiation exposure of NASA WB-57F flight crews. In: Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association, San Antonio, TX, May 4-7, 1981. Washington, D.C.: Aerospace Medical Association, p. 90-91, 1981.

339. Wilson*, J.W. Solar radiation monitoring for high altitude aircraft. Health Physics 41: 607-617, 1981.

340. Wilson*, J.W. and Khandelwal, G.S. Response of large cavity ion chambers to space protons. Nuclear Technology 52: 129-133, 1981.

341. Wilson*, J.W. and Townsend, L.W. An optical model for composite nuclear scattering. Canadian Journal of Physics 59: 1569-1576, 1981.

342. Yang, T.C.H., Ngo, F.Q.H., Howard, J., and Tobias, C.A. Cell transformation and mutagenesis. In: Biological and Medical Research with Accelerated Heavy Ions at the Bevalac, 1977-1980. U California, Lawrence Berkeley Lab, Berkeley, CA, p. 149-157, Nov. 1980. (LBL-11220)

343. Yang, T.C.H. and Tobias, C.A. Radiation and cell transformation in vitro. Advances in Biological and Medical Physics, Vol. 17 (Lawrence, J.H.; Gofman, J.W.; Hayes, T.L., eds.). New York: Academic, p. 417-461, 1980.

344. Yang, T.C.H., Tobias, C.A., Blakely, E.A., Craise, L.M., Madfes, I.S., Perez, C., and Howard, J. Enhancement effects of high-energy neon particles on the viral transformation of mouse C3H10T1/2 cells in vitro. Radiation Research 81(2): 208-223, 1980.

Behavior and Performance

345. Brady*, J.V. Experimental studies of stress and anxiety. In: Handbook on Stress and Anxiety (Kutash, I.L., et al., eds.). San Francisco: Jossey-Bass, p. 207-236, 1980.

346. Emurian, H.H., Emurian, C.S., and Brady*, J.V. Appetitive and aversive reinforcement schedule effects on behavior: A systematic replication. Basic and Applied Social Psychology 3(1): 39-52, 1982.

347. Halberg, F., Scheving, L.E., Powell, E.W., Pasley, J.N., DeRoshia, C., Saleh, M., and Winget*, C. Suprachiasmatic lesion alters rodent rhythm characteristics in different variables and frequency ranges: Suprachiasmatic modulatory polyecchronism (abstract). Chronobiologia 7(1): 134, 1980.

348. Helmreich*, R.L., Spence, J.T., Beane, W.E., Lucker, G.W., and Matthews, K.A. Making it in academic psychology: Demographic and personality correlates of attainment. Journal of Personality and Social Psychology 39(5): 896-908, 1980.

349. Helmreich*, R.L., Spence, J.T., and Thorbecke, W.L. On the stability of productivity and recognition. Personality and Social Psychology Bulletin 7(3): 516-522, 1981.

350. Helmreich*, R.L., Spence, J.T., and Wilhelm, J.A. A psychometric analysis of the Personal Attributes Questionnaire. Sex Roles 7(11): 1097-1108, 1981.

351. Helmreich*, R.L., Wilhelm, J.A., and Runge, T.E. Psychological considerations in future space missions. In: Human Factors of Outer Space Production (Cheston, T.S.; Winter, D.L., eds.). Boulder, CO: Westview, p. 1-23, 1980. (AAAS Selected Symposium 50)

352. Holley, D.C., Winget*, C.M., DeRoshia, C.W., Heinold, M.P., Edgar, D.M., Kinney, N.E., Langston, S.E., Markley, C.L., et al. Effects of Circadian Rhythm Phase Alteration on Physiological and Psychological Variables: Implications to Pilot Performance (Including a Partially Annotated Bibliography). NASA, Ames Research Center, Moffett Field, CA, 538 p., Mar. 1981. (NASA-TM-81277)

353. Lucker, G.W., Beane, W.E., and Helmreich*, R.L. The strength of the halo effect in physical attractiveness research. Journal of Psychology 107: 69-75, 1981.

354. Matthews, K.A., Helmreich*, R.L., Beane, W.E., and Lucker, G.W. Pattern A, achievement striving, and scientific merit: Does pattern A help or hinder? Journal of Personality and Social Psychology 39(5): 962-967, 1980.

355. Wegmann, H.M., Herrmann, R., and Winget*, C.M. Bioinstrumentation for evaluation of workload in payload specialists: Results of ASSESS II. Acta Astronautica 7: 1307-1321, 1980.

356. Wegmann, H.M., Herrmann, R., and Winget*, C.M. Effects of irregular work schedules in a space mission simulation (ASSESS II). Advances in Biosciences 30: 117-124, 1981.

357. Wegmann, H.N., Herrmann, R., and Winget*, C.M. Effects of irregular work schedules in a space mission simulation (ASSESS II) (abstract). Chronobiologia 7(3): 384-385, 1980.

358. Winget*, C.M. and Beljan, J.R. Circadian systems in medicine. Nebraska Medical Journal 65(11): 303-306, 1980.

359. Winget*, C.M. and Beljan, J.R. Circadian systems in medicine. Part II. Nebraska Medical Journal 65(12): 326-329, 1980.

360. Winget*, C.M., Hetherington, N.W., Beljan, J.R., and Rosenblatt, L.S. A statistical thermodynamic model for the estimation of rates of rephasal of biological rhythms (abstract). Biophysical Journal 33: 53A, 1981.

361. Winget*, C.M. and La Dou, J. Rotational shift work. In: Developments in Occupational Medicine (Zenz, C., ed.). Chicago: Year Book Medical, p. 221-234, 1980.

362. Wurtman, J.J. and Wurtman*, R.J. Suppression of carbohydrate (CHO) intake in the obese (abstract). Clinical Research 29(2): 632A, 1981.

363. Wurtman, J.J. and Wurtman*, R.J. Suppression of carbohydrate (CHO) intake in the obese (abstract). American Journal of Clinical Nutrition 34(4): 651, 1981.

General Biomedical Research

364. Abraham, S., Klein*, H.P., Lin, C.Y., and Volkmann*, C. The effects of space flight on some rat liver enzymes regulating carbohydrate and lipid metabolism. In: Life Sciences and Space Research XIX (Advances in Space Research, Vol. 1, No. 14) (Holmquist, W.R., ed.). New York: Pergamon, p. 199-217, 1981.

365. Abraham, S., Klein*, H.P., Lin, C.Y., Volkmann*, C., Tigranyan, R.A., and Vetrova, E.G. Experiment K304: Studies of specific hepatic enzymes and liver constituents involved in the conversion of carbohydrates to lipids in rats exposed to prolonged space flight. In: Final Reports of US Rat Experiments Flown on the Soviet Satellite Cosmos 1129 (Heinrich, M.R.; Souza, K.A., eds.). NASA, Ames Research Center, Moffett Field, CA, p. 35-100, Aug. 1981. (NASA-TM-81289)

366. Abraham, S., Lin, C.Y., Klein*, H.P., Volkmann*, C., Tigranyan, R.A., and Vetrova, E.G. Studies of specific hepatic enzymes involved in the conversion of carbohydrates to lipids in rats exposed to prolonged spaceflight aboard Cosmos 1129. Physiologist 23(6, Suppl): S55-S58, 1980.

367. Agharanya, J.C., Alonso, R., and Wurtman*, R.J. Changes in catecholamine excretion after short-term tyrosine ingestion in normally fed human subjects. American Journal of Clinical Nutrition 34: 82-87, 1981.

368. Agharanya, J.C. and Wurtman*, R.J. Effect of acute administration of large neutral and other amino acids on urinary excretion of catecholamines. Life Sciences 30: 739-746, 1982.

369. Alonso, R., Agharanya, J.C., and Wurtman*, R.J. Tyrosine loading enhances catecholamine excretion by rats. Journal of Neural Transmission 49(1/2): 31-43, 1980.

370. Arnold, M.A. and Fernstrom, J.D. L-tryptophan injection enhances pulsatile growth hormone secretion in the rat. Endocrinology 108(1): 331-335, 1981.

371. Brand, S.N. A mathematical model of calcium metabolism. In: Proceedings of the 34th Annual Conference on Engineering in Medicine and Biology. Bethesda, MD: Alliance for Engineering in Medicine and Biology, p. 240, 1981.

372. Brooks, S.H., Blankenhorn, D.H., Chin, H.P., Sanmarco, M.E., Hanashiro, P.K., Selzer*, R.H., and Selvester, R.H. Design of human atherosclerosis studies by serial angiography. Journal of Chronic Diseases 33: 347-357, 1980.

373. Caren, L.D., Mandel*, A.D., and Nunes, J.A. Effect of simulated weightlessness on the immune system in rats. Aviation, Space, and Environmental Medicine 51(3): 251-255, 1980.

374. Cheung, R.M.C., Chen, Y.D.I., Kraemer, F.B., and Reaven*, G.M. Lipoprotein binding in sucrose induced hypertriglyceridemia in the rat (abstract). Clinical Research 29(2): 403A, 1981.

375. Chiel, H.J. and Wurtman*, R.J. Short-term variations in diet composition change the pattern of spontaneous motor activity in rats. Science 213: 676-678, 1981.

376. Conlay, L., Maher, T., and Wurtman*, R.J. Tyrosine increases blood pressure in hypotensive rats (abstract). Federation Proceedings 40(3): 476, 1981.

377. Conlay, L.A., Maher, T.J., and Wurtman*, R.J. Tyrosine increases blood pressure in hypotensive rats. Science 212: 559-560, 1981.

378. Cornelius, N.H., Selzer*, R.H., and Hsia, S.S. Computer enhancement of intravenous coronary angiograms (abstract). Clinical Research 29(1): 76A, 1981.

379. Fernstrom, J.D. Dietary precursors and brain neurotransmitter formation. Annual Review of Medicine 32: 413-425, 1981.

380. Gelenberg, A.J., Wojcik, J.D., Growdon, J.H., Sved, A.F., and Wurtman*, R.J. Tyrosine for the treatment of depression. American Journal of Psychiatry 137(5): 622-623, 1980.

381. Hefti, F., Melamed, E., and Wurtman*, R.J. Partial lesions of the dopaminergic nigrostriatal system in rat brain: Biochemical characterization. Brain Research 195(1): 123-127, 1980.

382. Hefti, F., Melamed, E., and Wurtman*, R.J. The site of dopamine formation in rat striatum after L-dopa administration. Journal of Pharmacology and Experimental Therapeutics 217(1): 198-197, 1981.

383. Horrigan*, D.J. and Waligora, J.M. The development of effective procedures for the protection of space shuttle crews against decompression sickness during extravehicular activities. In: Preprints of 1980 Annual Scientific Meeting, Aerospace Medical Association, Anaheim, CA, May 12-15, 1980. Washington, D.C.: Aerospace Medical Association, p. 14-15, 1980.

384. Izadkhah, Z., Mandel*, A.D., and Sonnenfeld, G. Effect of treatment of mice with sera containing gamma interferon on the course of infection with Salmonella typhimurium strain LT-2. Journal of Interferon Research 1(1): 137-146, 1980.

385. Kandasamy, S.B. and Williams*, B.A. Central effect of prostacyclin on temperature in the conscious rabbit (abstract). Federation Proceedings 40: 439, 1981.

386. Kobayashi, Y., Loeppky, J.A., Venters, M.D., and Luft*, U.C. Circulation and respiration response to arm exercise and lower body negative pressure. Medicine and Science in Sports and Exercise 12(4): 244-249, 1980.

387. Leonard, J.I. Mathematical models for testing space-flight hypotheses. In: Proceedings of the 34th Annual Conference on Engineering in Medicine and Biology. Bethesda, MD: Alliance for Engineering in Medicine and Biology, p. 242, 1981.

388. Loeppky, J.A., Greene, E.R., and Eldridge, M.W. Reduction in renal artery blood flow impedance during upright tilt in man. Physiologist 24(6, Suppl): S1-S2, 1981.

389. Loeppky, J.A., Greene, E.R., and Eldridge, M.W. Renal blood flow reduction in man during upright tilt (abstract). Pfluegers Archiv 391(Suppl): R58, 1981.

390. Loeppky, J.A., Greene, E.R., Hoekenga, D.E., Venter, M.D., and Eldridge, M.W. Aortic and tibial bloodflow response to lower body negative pressure (LBNP). Physiologist 23(6, Suppl): S141-S144, 1980.

391. Loeppky, J.A. and Luft*, U.C. Effect of lower body negative pressure release on hyperpnea induced by inhaled gas. Respiration Physiology 41: 349-365, 1980.

392. Luft*, U.C., Mostyn, E.M., Loeppky, J.A., and Venters, M.D. Contribution of the haldane effect to the rise of arterial Pco_2 in hypoxic patients breathing oxygen. Critical Care Medicine 9(1): 32-37, 1981.

393. Lund*, G.F. Pocket ECG electrode. US-Patent-Appl-Sn-185865, Sept. 11, 1980.

394. Lund*, G.F. Subcutaneous electrode structure. US-Patent-4,219,027, Aug. 26, 1980.

395. Maher, T.J. and Wurtman*, R.J. L-threonine administration increases glycine concentrations in the rat central nervous system. Life Sciences 26(16): 1283-1286, 1980.

396. Melamed, E., Glaeser, B., Growdon, J.H., and Wurtman*, R.J. Plasma tyrosine in normal humans: Effects of oral tyrosine and protein-containing meals. Journal of Neural Transmission 47(4): 299-306, 1980.

397. Melamed, E., Hefti, F., and Wurtman*, R.J. Decarboxylation of exogenous L-dopa in rat striatum after lesions of the dopaminergic nigrostriatal neurons: The role of striatal capillaries. Brain Research 198(1): 244-248, 1980.

398. Melamed, E., Hefti, F., and Wurtman*, R.J. Diminished decarboxylation of L-dopa in rat striatum after intra-striatal injections of kainic acid. Neuropharmacology 19(4): 409-411, 1980.

399. Melamed, E., Hefti, F., and Wurtman*, R.J. Tyrosine administration increases striatal dopamine release in rats with partial nigrostriatal lesions. Proceedings of the National Academy of Sciences USA 77(7): 4305-4309, 1980.

400. Mondon, C., Economus, A., and Dolkas*, C. Evidence for muscle activity factor in lymph of spontaneously exercised rats (abstract). Clinical Research 28(1): 82A, 1980.

401. Mondon, C.E., Dolkas*, C., and Oyama*, J. Site of enhanced insulin sensitivity in year old rats adapted to hypergravitational force (abstract). Diabetes 29(Suppl 2): 114A, 1980.

402. Mondon, C.E., Dolkas*, C.B., and Reaven*, G.M. Site of enhanced insulin sensitivity in exercise-trained rats at rest. American Journal of Physiology 239: E169-E177, 1980.

403. Morre, M.C., Hefti, F., and Wurtman*, R.J. Regional tyrosine levels in rat brain after tyrosine administration. Journal of Neural Transmission 49(1/2): 45-50, 1980.

404. Morre, M.C. and Wurtman*, R.J. Characteristics of synaptosomal tyrosine uptake in various brain regions: Effect of other amino acids. Life Sciences 28: 65-75, 1981.

405. Parker, M.A., Mandel*, A.D., and Sonnenfeld, G. Modulation of the human in vitro antibody response by human leukocyte interferon (abstract). Federation Proceedings 39(3): 1161, 1980.

406. Parker, M.A., Mandel*, A.D., Wallace, J.H., and Sonnenfeld, G. Modulation of the human in vitro antibody response by human leukocyte interferon preparations. Cellular Immunology 58(2): 464-469, 1981.

407. Penn, P.E., Gerber, R.L., and Williams*, B.A. Changes in body temperature and metabolic rate after injection of calcium into the caudal hypothalamus of the rabbit. In: Thermoregulatory Mechanisms and Their Therapeutic Implications (Cox, B., et al., eds.). New York: S. Karger, p. 212-213, 1980.

408. Sciaraffa, D., Fox, S.C., Stockmann, R., and Greenleaf*, J.E. Human Acclimation and Acclimatization to Heat: A Compendium of Research, 1968-1978. NASA, Ames Research Center, Moffett Field, CA, 102 p., Aug. 1980. (NASA-TM-81181)

409. Selzer*, R.H. Atherosclerosis quantitation by computer image analysis. Paper presented at the Workshop on Quantitative Evaluation of Atherosclerosis, NIH, Silver Spring, MD, Feb. 22-23, 1982, 22 p.

410. Selzer*, R.H. and Blankenhorn, D.H. On the identification of the variation of atherosclerosis plaques, invasive and non-invasive methods. Paper presented at the 4th International Meeting on Atherosclerosis-Clinical Evaluation and Therapy, Bologna, Nov. 1981, 29 p.

411. Sonnenfeld, G., Harned, C.L., Thaniyavarn, S., Huff, T., Mandel*, A.D., and Nerland, D.E. Type II interferon induction and passive transfer depress the murine cytochrome P-450 drug metabolism system. Antimicrobial Agents and Chemotherapy 17(6): 969-972, 1980.

412. Suomalainen, H.A., Goldsby*, R.A., Osborne, B.A., and Schroder, J. Mouse/human T-cell hybrids rosetting with sheep erythrocytes. Scandinavian Journal of Immunology 11(2): 163-168, 1980.

413. Sved, A. and Fernstrom, J. Tyrosine availability and dopamine synthesis in the striatum: Studies with gamma-butyrolactone. Life Sciences 29: 743-748, 1981.

414. Wurtman*, R.J. Nutritional control of brain tryptophan and serotonin. In: Biochemical and Medical Aspects of Tryptophan Metabolism (Hayaishi, O.; Ishimura, Y.; Kido, R., eds.). New York: Elsevier/North-Holland, p. 31-46, 1980.

415. Wurtman*, R.J. The pineal as a neuroendocrine transducer. Hospital Practice 15(1): 82-86, 91-92, 1980.

416. Wurtman*, R.J. and Growdon, J. Food and the brain. In: Food and Health: Science and Technology (Birch, G.G.; Parker, K.J., eds.). London: Applied Science, p. 501-510, 1980.

417. Wurtman*, R.J., Hefti, F., and Melamed, E. Precursor control of neurotransmitter synthesis. Pharmacological Reviews 32: 315-335, 1981.

418. Wurtman*, R.J., Magil, S.G., and Reinstein, D.K. Piracetam diminishes hippocampal acetylcholine levels in rats. Life Sciences 28: 1091-1093, 1981.

419. Zeisel, S.H., Mauron, C., Watkins, C.J., and Wurtman*, R.J. Developmental changes in brain indoles, serum tryptophan and other serum neutral amino acids in the rat. Developmental Brain Research 1: 551-564, 1981.

420. Zeisel, S.H., Story, D.L., Wurtman*, R.J., and Brunengraber, H. Uptake of free choline by isolated perfused rat liver. Proceedings of the National Academy of Sciences USA 77(8): 4417-4419, 1980.

421. Zeisel, S.H. and Wurtman*, R.J. Developmental changes in rat blood choline concentration. Biochemical Journal 198: 565-570, 1981.

422. Zlatkis*, A., Poole, C.F., Brazell, R., Lee, K.Y., Hsu, F., and Singhawangcha, S. Profiles of organic volatiles in biological fluids as an aid to the diagnosis of disease. Analyst 106: 352-360, 1981.

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