
Elizabeth L. Hess, Janice Wallace-Robinson, Katherine J. Dickson, and Janet V. Powers
The George Washington University
Washington, D.C.

Prepared for
NASA Office of Space Science and Applications
under Contract NASW-4324
# TABLE OF CONTENTS

Preface ........................................................................................... v

Introduction .................................................................................... vii

Musculoskeletal Discipline References

- Bone, Mineral, and Connective Tissue ............................................. 3
- Muscle ................................................................................. 41
- General Musculoskeletal ............................................................. 75

General Physiology References .............................................................. 79

Index of Principal Investigators ............................................................. 95

Appendix: List of Principal Investigators and Addresses ......................... 101
PREFACE


This bibliography is divided into four sections: Bone, Mineral, and Connective Tissue; Muscle; General Musculoskeletal; and General Physiology. The last section is included to provide the reader with additional, background material in space physiology research. NASA-funded investigators whose work resulted in these publications are identified by an asterisk. A principal investigator index, as well as a list of investigators and their affiliations, is also included in the bibliography.

As part of our continuing interaction with the scientific and professional community, we are pleased to present this bibliography in an effort to stimulate an exchange of information and ideas among scientists working in this discipline. I would like to thank April Commodore Roy and Audrey Robin Brown for their technical assistance in the production of this bibliography.

Janis H. Stoklosa, Ph.D.
Manager, Space Physiology and Countermeasures Program
The Musculoskeletal Discipline is part of the Space Physiology and Countermeasures Program of the NASA Life Sciences Division. Space life sciences research was initiated in 1960 with the goal of enabling human survival in space. Now, in the late 20th century, the program is evolving to ensure human health and productivity on space missions: on the space shuttle in the 1990s, then on Space Station Freedom, and ultimately on the Moon and missions to Mars.

The goals of the Musculoskeletal Discipline are to understand the musculoskeletal system's adaptation to spaceflight and to ensure the provision of adequate physiological and performance countermeasures. It encompasses two primary research areas: bone, mineral, and connective tissue; and muscle. This multidisciplinary effort incorporates basic, applied, and operational research, both ground-based and in-flight. Research conducted at NASA centers and in universities includes human and animal (rats and non-human primates) subjects and utilizes various ground-based analogs of weightlessness (including horizontal and head-down bedrest, water immersion, immobilization, and hind-limb suspension) as well as actual space shuttle missions.

Specific objectives of the program include: determining the responses and consequences of muscular and skeletal adaptation to microgravity; determining crew performance or mission consequences of muscular and skeletal responses to microgravity; understanding the mechanisms of muscular and skeletal adaptation to microgravity; developing and verifying muscular and skeletal countermeasures that will facilitate a rapid physiological transition from microgravity to gravity; developing and verifying ground-based human and animal models to study musculoskeletal changes; developing and verifying biomechanical models to investigate neuromuscular and musculoskeletal mechanisms during activities in varying gravity environments; and developing and verifying computer models of adaptation to study muscle and bone at the tissue level.

Janis H. Stoklosa, Ph.D.
Manager, Space Physiology and Countermeasures Program
BONE, MINERAL, AND CONNECTIVE TISSUE
Abrams, S.A.; Schanler, R.J.; Sheng, H.-P.; Evans, H.J.; LeBlanc*, A.D.; Garza, C.
Bone mineral content reflects total body calcium in neonatal miniature piglets.

Allen, P.E.; Asling, C.W.; Callahan*, P.X.
A rapid, sensitive, selective radioimmunoassay for osteocalcin.

Allen, P.E.; Shakes, D.C.; Callahan*, P.X.
Age related changes in osteocalcin in fetal and neonatal rats (Abstract).
_Calcified Tissue International_ 33(3): 290, 1981. (GWU 3282)

Altchuler*, S.I.
Dietary protein and calcium loss: A review.

Altchuler*, S.I.
Skeletal metabolism (Abstract).

Altchuler*, S.I.; Brand, S.N.; White, R.J.
A mathematical model of calcium metabolism.

Altchuler*, S.I.; Brand, S.N.; White, R.J.
A mathematical model of calcium metabolism (Abstract).

Altobelli, S.A.; Nerem*, R.M.
An experimental study of coronary artery fluid mechanics.

Amtmann, E.; Oyama*, J.; Potulski, M.
Effect of chronic centrifugation on the cross-sectional shape of long bones in dogs.

Anderson, R.E.; Jee*, W.S.S.; Woodbury, D.M.
Stimulation of carbonic anhydrase in osteoclasts by parathyroid hormone.

Anderson, R.E.; Kemp, J.W.; Jee*, W.S.S.; Woodbury*, D.M.
Effects of cortisol and fluoride on ion-transporting ATPase activities in cultured osteoblastlike cells.

Anderson, R.E.; Kemp, J.W.; Jee*, W.S.S.; Woodbury*, D.M.
Ion-transporting ATPases and matrix mineralization in cultured osteoblastlike cells.

Anderson, R.E.; Woodbury, D.M.; Jee*, W.S.S.
Humoral and ionic regulation of osteoclast acidity.
_Calcified Tissue International_ 39: 252-258, 1986. (GWU 7470)
Anderson, R.E.; Woodbury*, D.M.
Direct effects of diphenylhydantoin (phenytoin) on the ion-transporting ATPases of cultured osteoblast-like cells.

Anderson, S.A.; Cohn, S.H. (Talbot, J.M. = P.I.)

Arnaud*, C.D.
Hormonal regulation of calcium homeostasis.

Arnaud*, C.D.
Mineral and bone homeostasis.

Arnaud*, C.D.
The parathyroid glands, hypercalcemia, and hypocalcemia.

Arnaud*, C.D.
Role of dietary calcium in osteoporosis.
Advances in Internal Medicine 35: 93-106, 1990. (GWU 5996)

Arnaud*, C.D.
The ultimobranchial cells and calcitonin.

Arnaud*, C.D.; Sanchez, S.D.
The role of calcium in osteoporosis.

Arnaud*, C.D.; Teitelbaum, A.P.; Silve, C.; Nyiredy, K.O.
Evidence that homologous desensitization of cultured chick bone cells may involve uncoupling of the parathyroid hormone receptor from adenylate cyclase (Abstract).
Calcified Tissue International 36: 500, 1984. (GWU 7076)

Arnaud*, S.; Mechanic*, G.; Buckendahl, P.; Bromage, T.; Boyde, A.; Elliott, J.; Katz, E.; Durnova, G.
Experiment K-6-01: Distribution and biochemistry of mineral and matrix in the femurs of rats.

Arnaud*, S.B.; Fung, P.; Buckendahl, P.; Vasques, M.; Grindeland*, R.
Alkaline phosphatase and osteocalcin in the blood of two genetic strains of rats (Abstract).

Arnaud*, S.B.; Fung, P.; Popova, I.; Kaplansky, A.
Effects of space flight on serum parathyroid hormone and calcitonin in rats (Abstract).
Arnaud*, S.B.; Holton*, E.M.; Buckendahl, P.P.; Tietjen, G.
Early effects of weightlessness on growing bone.

Arnaud*, S.B.; Jee*, W.S.S.; Minato, I.; Buckendahl, P.; Berry, P.; Young*, D.R.
Effect of dietary calcium on the bone of adult vitamin D deficient rhesus monkeys (Abstract).

Arnaud*, S.B.; Morey-Holton*, E.

Arnaud*, S.B.; Patterson-Buckendahl, P.; Halpryn, B.M.; Maese, C.; Harris, B.A.; Morey-Holton*, E.; Cann*, C.E.
Endogenous cortisol and serum osteocalcin in rhesus monkeys during simulated weightlessness (Abstract).

Arnaud*, S.B.; Powell, M.R.; Vernikos-Danellis*, J.; Buchanan*, P.
Bone mineral and body composition after 30 day head down tilt bed rest (Abstract).

Arnaud*, S.B.; Powell, M.R.; Whalen, R.T.; Vernikos-Danellis*, J.
Bone mineral redistribution during head down tilt bed rest (Abstract).
*ASGSB Bulletin* 2: 54, 1989. (GWU 10752)

Arnaud*, S.B.; Schneider*, V.S.; Morey-Holton*, E.
Effects of inactivity on bone and calcium metabolism.

Arnaud*, S.B.; Sherrard, D.J.; Maloney, N.; Whalen, R.T.; Fung, P.
Reduced bone formation is measureable in the iliac crest of normal men after 7 days in a bed rest model of weightlessness (Abstract).

Arnaud*, S.B.; Silver, B.
A non-invasive measure of minerals and electrolytes in tissue.

Arnaud*, S.B.; Steele, C.; Mauriello, A.
Mechanical response tissue analyzer for estimating bone strength.

Arnaud*, S.B.; Young*, D.R.; Berry, P.; Brown, S.
Normocalcemic and hypocalcemic vitamin D deficiency (-D) in the adult rhesus monkey (Abstract).

Arnaud*, S.B.; Young*, D.R.; Cann*, C.; Reinhardt, T.A.; Henrickson, R.
Is hypervitaminosis D normal in the rhesus monkey?
Banes, A.J.; Link, G.W.; Peterson, H.D.; Yamauchi, M.; Mechanic*, G.L.
Temporal changes in collagen crosslink formation at the focus of trauma and at sites distant to a wound.

Banes, A.J.; Yamauchi, M.; Mechanic*, G.L.
Nonmineralized and mineralized compartments of bone: The role of pyridinoline in nonmineralized collagen.
Biochemical and Biophysical Research Communications 113(3): 975-981, 1983. (GWU 5581)

Baranowski, T.J., Jr.; Black, J.; Brighton*, C.T.
Microenvironmental changes associated with electrical stimulation of osteogenesis by direct current (Abstract).

Barden, H.S.; Mazess*, R.B.; Chesney, R.W.; Rose, P.G.; Chun, R.
Bone status of children receiving anticonvulsant therapy.

Barden, H.S.; Mazess*, R.B.; Rose, P.G.; McAweeney, W.
Bone mineral status measured by direct photon absorptiometry in institutionalized adults receiving long-term anticonvulsant therapy and multivitamin supplementation.

Baylink, D.J.; Morey*, E.R.; Ivey, J.L.; Stauffer, M.E.
Vitamin D and bone.

Beall, P.T.; Misra, L.K.; Young, R.L.; Spjut, H.J.; Evans, H.J.; LeBlanc*, A.
Clomiphene protects against osteoporosis in the mature ovariectomized rat.

Bessman, E.S.; Carter*, D.R.; McCarthy, J.C.; Harris, W.H.
Accuracy enhancement of in-vivo bone strain measurements and analysis.

Bikle*, D.D.; Globus, R.K.; Morey*, E.R.
Calcium transport from the intestine and into bone in a rat model simulating weightlessness.
Physiologist 25(6, Suppl.): S143-S144, 1982. (GWU 3803)

Bikle*, D.D.; Globus, R.K.; Morey*, E.R.
Calcium transport from the intestine and into bone in a rat model simulating weightlessness (Abstract).

Bikle*, D.D.; Halloran*, B.P.; Cone, C.M.; Morey-Holton*, E.
Bone loss during simulated weightlessness: Is it glucocorticoid mediated?
Physiologist 28(6, Suppl.): S123-S124, 1985. (GWU 6904)

Bikle*, D.D.; Halloran*, B.P.; Cone, C.M.; Morey-Holton*, E.
Bone loss during simulated weightlessness: Is it glucocorticoid mediated? (Abstract)

Block, J.E.; Friedlander, A.L.; Brooks, G.A.; Steiger, P.; Stubbs, H.A.; Genant*, H.K.
Determinants of bone density among athletes engaged in weight-bearing and non-weight-bearing activity.
Block, J.E.; Genant*, H.K.; Black, D.
Greater vertebral bone mineral mass in exercising young men.

Block, J.E.; Genant*, H.K.; Brooks, G.; Wilmont, C.; Steiger, P.
Models of bone hypertrophy due to intense physical fitness and bone atrophy due to immobilization (Abstract).

Block, J.E.; Smith, R.; Friedlander, A.; Genant*, H.K.
Preventing osteoporosis with exercise: A review with emphasis on methodology.

Block, J.E.; Smith, R.; Glueer, C.-C.; Steiger, P.; Ettinger, B.; Genant*, H.K.
Models of spinal trabecular bone loss as determined by quantitative computed tomography.

Future advanced CT technology for bone and tissue densitometry: Isotope source and electron beam scanners (Abstract).

Brand, S.N.; Altchuler*, S.I.
Development of a mathematical model of human calcium metabolism.
Paper presented at the Gordon Research Conference, Meriden, NH, July 14-18, 1980, 1 p. (GWU 3702)

Brommage, R.; DeLuca*, H.F.
A maternal defect is responsible for growth failure in vitamin D-deficient rat pups.

Brommage, R.; DeLuca*, H.F.
Regulation of bone mineral loss during lactation.

Brommage, R.; DeLuca*, H.F.
Self-selection of a high calcium diet by vitamin D-deficient lactating rats increases food consumption and milk production (Abstract).
*Calcified Tissue International* 36: 511, 1984. (GWU 7090)

Brown, A.J.; DeLuca*, H.F.
Production of 10-oxo-19-nor-25 hydroxyvitamin D3 by solubilized kidney mitochondria from chick and rat.

Buckendahl, P.E.; Cann*, C.E.; Grindeland*, R.E.; Martin, R.B.; Mechanic*, G.; Arnaud*, S.B.
Osteocalcin (OC) as an indicator of bone metabolism during spaceflight (Abstract).

Bunch*, T.E.; Young*, D.R.; Niklowitz, W.J.
*Calcified Tissue International* 34(Suppl. 1): S3, 1982. (GWU 3933)

Cann*, C.; Rakmanov, A.; Karolkov, V.
Experiment K-6-27: Analysis of radiographs and biosamples from primate studies.
Cann*, C.E.
Bones and stones in space: Integrating the medical and scientific questions.

Cann, C.E. (Genant, H.K. = P.I.)
Low-dose CT scanning for quantitative spinal mineral analysis.
Radiology 140(3): 813-815, 1981. (GWU 2588)

Cann*, C.E.
Quantitative CT for determination of bone mineral density: A review.

Cann*, C.E.; Adachi, R.R.
Bone resorption and mineral excretion in rats during spaceflight.
American Journal of Physiology 244: R327-R331, 1983. (GWU 4163)

Cann*, C.E.; Adachi, R.R.
K-317: Bone resorption in rats during spaceflight.

Cann*, C.E.; Adachi, R.R.; Holton*, E.M.
Bone resorption and calcium absorption in rats during spaceflight.
Physiologist 23(6, Suppl.): S83-S86, 1980. (GWU 2444)

Cann*, C.E.; Adachi, R.R.; Morey-Holton*, E.
Bone resorption and calcium absorption in rats during spaceflight.

Cann*, C.E.; Arnaud*, S.B.
Calcium metabolism and correlated endocrine measurements in nonhuman primates during hypokinesia.

Cann, C.E.; Ettinger, B.; Genant*, H.K.
Normal subjects versus osteoporotics: No evidence using dual energy computed tomography for disproportionate increase in vertebral marrow fat (Abstract).

Cann, C.E.; Faul, D.D.; Couch, J.L.; Boyd, D.P.; Genant*, H.K.
Composition-selective measurement of mineral content in the axial and appendicular skeleton (Abstract).
Investigative Radiology 16: 364, 1981. (GWU 2589)

Cann, C.E.; Genant*, H.K.
Comparison of cancellous and integral spinal mineral loss in oophorectomized women using quantitative computed tomography (Abstract).

Cann, C.E.; Genant*, H.K.
Cross-sectional studies of vertebral mineral using quantitative computed tomography (Abstract).
Cann, C.E.; Genant*, H.K.
Single versus dual energy CT for vertebral mineral quantification (Abstract).

Cann, C.E.; Genant*, H.K.; Ettinger, B.; Kolb, F.O.; Gordan, G.S.; Arnaud*, C.D.
Spinal mineral by computed tomography: Comparison with peripheral mineral in patients and controls (Abstract).
*Calcified Tissue International* 31(1): 60, 1980. (GWU 3075)

Cann, C.E.; Genant*, H.K.; Kolb, F.O.
Male idiopathic osteoporosis: Patterns of bone loss may indicate heterogeneity (Abstract).
*Calcified Tissue International* 34(Suppl. 1): S28, 1982. (GWU 4291)

Cann, C.E.; Genant*, H.K.; Young*, D.R.
Comparison of vertebral and peripheral mineral losses in disuse osteoporosis in monkeys.

Reversible bone loss is produced by the GnRH agonist nafarelin.

Cann, C.E.; Martin, M.C.; Genant*, H.K.; Jaffe, R.B.
Decreased spinal mineral content in amenorrheic women.

Cann*, C.E.; Patterson-Buckendahl, P.; Durnova, G.; Kaplansky, A.
Experiment K-6-04: Trace element balance in rats during spaceflight.

Carter*, D.R.; Caler, W.E.; Harris, W.H.
Resultant loads and elastic modulus calibration of long bone cross sections.

Carter*, D.R.; Fyhrie, D.P.; Whalen, R.T.
Trabecular bone density and loading history: Regulation of connective tissue biology by mechanical energy.

Carter*, D.R.; Fyrhrie, D.P.; Whalen, R.T.; Orr, T.E.; Schurman, D.J.; Rapperport, D.J.
Control of chondro-osseous skeletal biology by mechanical energy (Abstract).

Cavanagh*, P.
Skeletal group.

Cavanagh*, P.R.
Biomechanical perspectives on locomotion in null gravity.
Cavanaugh, D.J.; Cann*, C.E.
Bone mineral content in postmenopausal females before and after a 52 week walking program (Abstract).

Cavanaugh, D.J.; Cann*, C.E.
Brisk walking does not stop bone loss in postmenopausal women.
*Bone 9: 201-204, 1988. (GWU 14688)

Chafetz, N.I.; Genant*, H.K.; Moon, K.L.; Helms, C.A.; Morris, J.M.
Recognition of lumbar disk herniation with NMR.

Chen, T.L.; Cone, C.M.; Morey-Holton*, E.; Feldman, D.
1α,25-dihydroxyvitamin D3 receptors in cultured rat osteoblast-like cells.
*Journal of Biological Chemistry 258(7): 4350-4355, 1983. (GWU 4459)

Chen, T.L.; Cone, C.M.; Morey-Holton*, E.; Feldman, D.
Glucocorticoid regulation of 1,25(OH)2-vitamin D3 receptors in cultured mouse bone cells.
*Journal of Biological Chemistry 257(22): 13564-13569, 1982. (GWU 4398)

Chesney, R.W.; Dabbagh, S.; Uehling, D.T.; DeLuca*, H.F.
Kidney International 28(Suppl. 17): S75-S78, 1985. (GWU 7805)

Chesney, R.W.; Hamstra, A.; Rose, P.; DeLuca*, H.F.
Vitamin D and parathyroid hormone status in children with the nephrotic syndrome and chronic mild glomerulonephritis.

Chesney, R.W.; Hamstra, A.J.; DeLuca*, H.F.
Absence of seasonal fluctuation in serum concentration of 24,25(OH)2-vitamin D in childhood.
*Calcified Tissue International 34: 527-530, 1982. (GWU 4707)

Chesney, R.W.; Hamstra, A.J.; Mazess*, R.B.; Rose, P.; DeLuca*, H.F.
Circulating vitamin D metabolite concentrations in childhood renal diseases.

Chesney, R.W.; Hamstra, A.J.; Phelps, M.; DeLuca*, H.F.
Vitamin D metabolites in renal insufficiency and other vitamin D disorders of children.

Chesney, R.W.; Mazess*, R.B.; DeLuca*, H.F.
Long-term influence of calcitriol (1,25(OH)2D) and supplemental phosphate (PO4) in X-linked hypophosphatemic rickets (Abstract).

Long-term influence of calcitriol (1,25-dihydroxyvitamin D) and supplemental phosphate in X-linked hypophosphatemic rickets.

Vitamin D metabolite concentrations in vitamin D deficiency: Are calcitriol levels normal?
Chow, S.Y.; Chow, Y.C.; Jee*, W.S.S.; Woodbury*, D.M.
Electrophysiological properties of osteoblastlike cells from the cortical endosteal surface of rabbit long bones.
*Calcified Tissue International* 36(4): 401-408, 1984. (GWU 7096)

Localization studies in patients with persistent or recurrent hyperparathyroidism.

Clark, S.A.; Dame, M.C.; Kim, Y.S.; Stumpf, W.E.; DeLuca*, H.F.
1,25-dihydroxyvitamin D3 in teeth of rats and humans: Receptors and nuclear localization.
*Anatomical Record* 212: 250-254, 1985. (GWU 7707)

Curwin, S.L.; Vailas*, A.C.; Wood, J.
Immature tendon adaptation to strenuous exercise.

Hypocalcemia is moderate in a kindred with autosomal dominant hypoparathyroidism, since serum 1,25(OH)2-vitamin D levels are normal (Abstract).
*Calcified Tissue International* 36: 501, 1984. (GWU 7102)

DeLuca*, H.F.
The cardinal role of 1,25-dihydroxyvitamin D3 in mineral homeostasis.
In: *Clinical Disorders of Bone and Mineral Metabolism* (Frame, B., Potts, J.T., Jr., Eds.). Amsterdam, The Netherlands: Excerpta Medica, p. 78-81, 1983. (GWU 5847)

DeLuca*, H.F.
Vitamin D-dependent calcium transport (Abstract).
*Journal of General Physiology* 82(6): 7a-8a, 1983. (GWU 5853)

DeLuca*, H.F.; Schnoes, H.K.
Vitamin D: Recent advances.
*Annual Reviews in Biochemistry* 52: 411-439, 1983. (GWU 5036)

Di Ferrante*, D.T.; Wilson, N.Y.; Leach*, C.S.
Chromatographic method for the measurement of hydroxylysine, hydroxylysine glycosides and 3-methylhistidine in human urine.

Dillaman*, R.M.; Roer, R.D.
Correlated light and electron microscopy of the vasculature of cortical bone in rat femora and tibiae.

Dillaman*, R.M.; Roer, R.D.
Correlated light and electron microscopy of the vasculature of cortical bone in rat femora and tibiae (Abstract).

Dillaman*, R.M.; Roer, R.D.; Rutherford, E.
Fluid dynamics in bone (Abstract).

Dobbins, J.T., III; Mazess*, R.B.; Cameron, J.R.
Scanning-slit X-ray videoabsorptiometry for measurement of bone-mineral content (Abstract).
Bone marrow imaging: Magnetic resonance studies related to age and sex.

Doppelt, S.H.; Neer*, R.M.; Potts, J.T., Jr.
Human parathyroid hormone 1-34-mediated hypercalcemia in a rat model, and its inhibition by dichloromethane diphosphonate.
*Calcified Tissue International* 33: 649-654, 1981. (GWU 4502)

Gut-mediated hypercalcemia in rabbits bearing VX2 carcinoma: New mechanism for tumor-induced hypercalcemia.
*Proceedings of the National Academy of Sciences USA* 79: 640-644, 1982. (GWU 5240)

Dorwart, R.H.; Genant*, H.K.
Anatomy of the lumbosacral spine.

Ellis*, S.
*Stimulation of Body Weight Increase and Epiphyseal Cartilage Growth by Insulin-Like Growth Factor.*

Ettinger, B.; Genant*, H.K.; Cann*, C.E.

Ettinger, B.; Genant*, H.K.; Cann, C.E.
Long-term estrogen replacement therapy prevents bone loss and fractures.

Eurell, J.A.; Kazarian*, L.E.
Quantitative histochemistry of rat lumbar vertebrae following spaceflight.

Faugere, M.C.; Malluche, H.H.; Okamoto, S.; DeLuca*, H.F.
1,25(OH)2D3 reverses bone loss due to oophorectomy (Abstract).
*Calcified Tissue International* 35(Suppl.): A10, 1983. (GWU 4838)

Fiorotto, M.L.; Sheng, H.-P.; Evans, H.J.; LeBlanc*, A.D.; Johnson*, P.C.; Nichols, B.L.
Specific effects of weight loss, protein deficiency and energy deprivation on the water and electrolyte composition of young rats.

France, E.P.; Oloff, C.M.; Kazarian*, L.E.
Bone mineral analysis of rat vertebra following space flight: Cosmos 1129 (Abstract).
*Physiologist* 25(4): 302, 1982. (GWU 3884)

Franceschi, R.T.; DeLuca*, H.F.; Mercado, D.L.
Temperature-dependent inactivation of nucleic acid binding and aggregation of the 1,25-dihydroxyvitamin D3 receptor.
*Archives of Biochemistry and Biophysics* 222(2): 504-517, 1983. (GWU 5081)

Furuta, Y.; Je*, W.S.S.
Effect of 16,16-dimethyl prostaglandin E2 methyl ester on weanling rat skeleton: Daily and systemic administration.
*Anatomical Record* 215: 305-316, 1986. (GWU 7680)
Gallagher, J.C.; Jerpbak, C.M.; Jee*, W.S.S.; Johnson, K.A.; DeLuca*, H.F.; Riggs, B.L.
1,25-dihydroxyvitamin D3: Short- and long-term effects on bone and calcium metabolism in patients with postmenopausal osteoporosis.
Proceedings of the National Academy of Sciences USA 79: 3325-3329, 1982. (GWU 4556)

Genant*, H.; Boyd, D.; Rosenfeld, D.; Abols, Y.; Cann, C.E.
Computed tomography.

Genant*, H.K.
Assessing osteoporosis: CT's quantitative advantage.
Diagnostic Imaging August: 52-57, 1985. (GWU 7123)

Genant*, H.K.
Western Journal of Medicine 139(1): 75-84, 1983. (GWU 4913)

Genant*, H.K. (Ed.)

Genant*, H.K.
Quantitative computed tomography for assessing metabolic bone diseases.

Genant*, H.K.; Block, J.E.; Steiger, P.; Glueer, C.C.; Ettinger, B.; Harris, S.T.
Appropriate use of bone densitometry.
Radiology 170: 817-822, 1989. (GWU 10358)

Genant*, H.K.; Cann, C.E.
Quantitative computed tomography for assessing vertebral bone mineral.

Genant*, H.K.; Cann, C.E.; Boyd*, D.P.; Kolb, F.O.; Ettinger, B.; Gordan, G.S.
Quantitative computed tomography for vertebral mineral determination.

Genant*, H.K.; Cann, C.E.; Chafetz, N.I.; Helms, C.A.
Advances in computed tomography of the musculoskeletal system.

Genant*, H.K.; Cann, C.E.; Ettinger, B.; Gordan, G.S.
Bone mineral determination in the axial and appendicular skeleton of oophorectomized women (Abstract).

Genant*, H.K.; Cann, C.E.; Ettinger, B.; Gordan, G.S.
Determination of bone mineral loss in the axial skeleton of oophorectomized women using quantitative computed tomography (Abstract).
Genant*, H.K.; Cann, C.E.; Ettinger, B.; Gordan, G.S.
Spinal bone mineral loss assessed by quantitative computed tomography (CT) (Abstract).
Abstract of a paper presented at the 15th International Congress of Radiology, Brussels, Belgium, June 24-July 1, 1981, 1 p. (GWU 2590)

Genant*, H.K.; Cann, C.E.; Ettinger, B.; Gordan, G.S.; Kolb, F.O.; Reiser, U.; Arnaud*, C.D.
Quantitative computed tomography for spinal mineral assessment: Current status.

Genant*, H.K.; Cann, C.E.; Faul, D.D.
Quantitative computed tomography for assessing vertebral bone mineral.

Genant*, H.K.; Cann, C.E.; Pozzi-Mucelli, R.S.; Kanter, A.S.
Vertebral mineral determination by quantitative CT: Clinical feasibility and normative data (Abstract).
*Journal of Computer Assisted Tomography* 7(3): 554, 1983. (GWU 5013)

Genant*, H.K.; Ettinger, B.; Cann, C.E.; Reiser, U.; Gordan, G.S.; Kolb, F.O.
Osteoporosis: Assessment by quantitative computed tomography.

Genant*, H.K.; Powell, M.R.; Cann, C.E.; Stebler, B.; Rutt, B.K.; Richardson, M.L.; Kolb, F.O.
Comparison of methods for in vivo spinal bone mineral measurement (Abstract).

Genant*, H.K.; Steiger, P.; Block, J.E.; Glueer, C.C.; Ettinger, B.; Harris, S.T.

Genant*, H.K.; Turski, P.A.; Moss, A.A.
Advances in CT assessment of metabolic and endocrine disorders.
*Advances in Internal Medicine* 28: 409-447, 1983. (GWU 5549)

Gies, A.A.; Carter*, D.R.
Experimental determination of whole long bone sectional properties.

Gillespy, T., III; Contreras, L.N.; Tyrrell, J.B.; Genant*, H.K.
Clinical, biochemical and bone density parameters in Cushing's disease (Abstract).

Gleeson, P.B.; Protas, E.J.; LeBlanc*, A.D.; Schneider*, V.S.; Evans, H.J.
Effects of weight lifting on bone mineral density in premenopausal women.

Globus, A.; Morey-Holton*, E.
Computer-assisted image analysis of cross-sectional bone growth (Abstract).
*Calcified Tissue International* 34(Suppl.): S7, 1982. (GWU 4037)

Skeletal response to dietary calcium in a rat model simulating weightlessness.

Effects of dietary calcium on skeletal response to unweighting (Abstract).
Effects of simulated weightlessness on bone mineral metabolism.

Güler, C.-C.; Reiser, U.J.; Davis, C.A.; Rutt, B.K.; Genant*, H.K.
Vertebral mineral determination by quantitative computed tomography (QCT): Accuracy of single and dual energy measurements.

Güler, C.C.; Steiger, P.; Selvidge, R.; Elliesen-Kliefoth, K.; Hayashi, C.; Genant*, H.K.
Comparative assessment of dual-photon absorptiometry and dual-energy radiography.

Goode, A.W.; Rambaut*, P.C.
The skeleton in space.

Gordan, G.S.; Genant*, H.K.
Ageing of bone in the two sexes.

Gordan, G.S.; Genant*, H.K.
The aging skeleton.

Gould, R.G.; Genant*, H.K.
Quantitative and qualitative comparison of two microfocus-tube imaging systems.

Graham, L.; Mechanic*, G.L.
[14C]Acrylonitrile: Preparation via a stable tosylate intermediate and quantitative reaction with amine residues in collagen.

Hall, G.E.; Kenny*, A.D.
Role of carbonic anhydrase in bone resorption induced by 1,25 dihydroxyvitamin D3 in vitro.
*Calcified Tissue International* 37: 134-142, 1985. (GWU 6490)

Hall, G.E.; Kenny*, A.D.
Role of carbonic anhydrase in bone resorption induced by prostaglandin E2 in vitro.

Chronic 1,25-dihydroxyvitamin D3 administration in the rat reduces the serum concentration of 25-hydroxyvitamin D by increasing metabolic clearance rate.

Halloran*, B.P.; Bikle*, D.D.; Wronski, T.J.; Globus, R.; Levens, M.J.; Morey-Holton*, E.M.
Effect of simulated weightlessness and chronic 1,25(OH)2D administration on bone metabolism (Abstract).

Effect of simulated weightlessness and chronic 1,25-dihydroxyvitamin D administration on bone metabolism.
*Physiologist* 28(6, Suppl.): S127-S128, 1985. (GWU 6900)
Harris, B.A.; Silver, B.; Greenleaf*, J.E.; Arnaud*, S.B.
Alterations in intracellular calcium during bedrest with and without exercise (Abstract).

Harris, S.T.; Neer*, R.M.; Segre, G.V.; Tully, G.; Potts, J.T., Jr.
Secondary hyperparathyroidism complicating dichloromethane diphosphonate treatment of Paget's disease (Abstract).

Helms, C.A.; Cann, C.E.; Brunelle, F.O.; Gilula, L.A.; Chafetz, N.; Genant*, H.K.
Detection of bone-marrow metastases using quantitative computed tomography.
Radiology 140(3): 745-750, 1981. (GWU 4463)

Heuck, A.F.; Block, J.; Glueer, C.-C.; Steiger, P.; Genant*, H.K.
Mild versus definite osteoporosis: Comparison of bone densitometry techniques using different statistical models.

Hill, E.L.; Arnaud*, S.B.; Fung, P.; Cone, C.; Morey-Holton*, E.
The effect of sympathectomy, capsaicin denervation, and tail-suspension on plasma calcitonin levels in rats (Abstract).

Hill, E.L.; Cone, C.M.; Martin*, R.B.; Arnaud*, S.B.; Fung, P.; Morey-Holton*, E.
Effect of sympathectomy and capsaicin denervation on skeletal and calcitonin changes in response to tail-suspension (Abstract).

Holton*, E.
Bone and calcium alterations during spaceflight.

Holton*, E.M.
Effects of weightlessness on bone and muscle of rats.

1α,25-dihydroxyvitamin D3 and 1α-hydroxyvitamin D3 prolong survival time of mice inoculated with myeloid leukemia cells.
Proceedings of the National Academy of Sciences USA 80: 201-204, 1983. (GWU 4615)

Jarnagin, K.; Zeng, S.-Y.; Phelps, M.; DeLuca*, H.F.
Metabolism and pharmacokinetics of 24,25-dihydroxyvitamin D3 in the vitamin D3-replete rat.

Jee*, W.S.S.
Augmentation of bone mass in osteoporosis.

Jee*, W.S.S.
The dynamic nature of the weight-bearing function of the skeleton (Abstract).
Jee*, W.S.S.
Local and systemic factors influencing bone formation.

Jee*, W.S.S.; Inoue, J.; Jee, K.W.; Haba, T.
Histomorphometric assay of the growing long bone.

Jee*, W.S.S.; Kimmel, D.B.; Smith, C.; Dell, R.B.

Jee*, W.S.S.; Li, X.J.
Adaptation of cancellous bone to overloading in the adult rat: A single photon absorptiometry and histomorphometry study.
Anatomical Record 227: 418-426, 1990. (GWU 13452)

Jee*, W.S.S.; Li, X.J.
Small animal models for studying prevention and treatment of osteoporosis.

Jee*, W.S.S.; Miller, S.C.; Black, H.E.
The effects of diphosphonates on bone resorption and corticosteroid-induced bone loss.

Jee*, W.S.S.; Mori, S.; Li, X.J.; Chan, S.
Prostaglandin E₂ enhances cortical bone mass and activates intracortical bone remodeling in intact and ovariectomized female rats.
Bone 11: 253-266, 1990. (GWU 13456)

Jee*, W.S.S.; Parfitt, A.M. (Eds.)

Jee*, W.S.S.; Smith, J.M.
Image analysis of calcified tissues.

Jee*, W.S.S.; Ueno, K.; Deng, Y.P.; Woodbury, D.M.
The effects of prostaglandin E₂ in growing rats: Increased metaphyseal hard tissue and cortico-endosteal bone formation.

The role of bone cells in increasing metaphyseal hard tissue in rapidly growing rats treated with prostaglandin E₂.

Jee*, W.S.S.; Wronski, T.J.; Morey*, E.R.; Kimmel, D.B.
Effects of spaceflight on trabecular bone in rats.
American Journal of Physiology 244: R310-R314, 1983. (GWU 4166)
Jergesen, H.E.; Heller, M.; Genant*, H.K.
Signal variability in magnetic resonance imaging of femoral head osteonecrosis.
*Clinical Orthopaedics and Related Research* 253: 137-149, 1990. (GWU 13994)

Jergesen, H.E.; Lang, P.; Moseley, M.; Genant*, H.K.
Histologic correlation in magnetic resonance imaging of femoral head osteonecrosis.
*Clinical Orthopaedics and Related Research* 253: 150-163, 1990. (GWU 13993)

Importance of measurement of spongious vertebral bone mineral density in the assessment of osteoporosis.
*Bone* 8: 201-206, 1987. (GWU 10352)

Judy, M.M. (Jee, W.S.S. = P.I.)

Measurement of trabecular spacing and orientation by optical diffraction.
*Metabolic Bone Disease and Related Research* 2(Suppl.): 291-295, 1980. (GWU 2606)

Structural properties of the renal parathyroid hormone receptor: Hydrodynamic analysis and protease sensitivity.

The canine renal parathyroid hormone receptor is a glycoprotein: Characterization and partial purification.

Kazarian*, L.; Cann*, C.; Parfitt, M.; Simmons*, D.; Morey-Holton*, E.

Kazarian*, L.E.

Kazarian*, L.E.; von Gierke, H.E.; Eurell, J.A.; Smith-Lagnese, S.D.
Vertebral strength investigations following space flight: Cosmos 1129 (Abstract).
*Pflägers Archiv* 391(Suppl.): R66, 1981. (GWU 1601)

Kenny*, A.D.
Inhibition of disuse atrophy of bone in rats by continuous subcutaneous infusion of benzolamide (Abstract).

Kim, Y.S.; Clark, S.A.; Stumpf, W.E.; DeLuca*, H.F.
Nuclear uptake of 1,25-dihydroxyvitamin D3 in developing rodent teeth: An autoradiographic study.
*Anatomical Record* 212: 301-306, 1985. (GWU 7712)

Kingsley, R.J.; Tsuzaki, M.; Watabe, N.; Mechanic*, G.L.
Collagen in the spicule organic matrix of the gorgonian *Leptogorgia virgulata*.
Krebs, J.; Schneider*, V.; Smith, J.; LeBlanc*, A.; Thornton*, W.; Leach*, C.
Sweat calcium loss during running (Abstract).

Krebs, J.M.; Schneider*, V.S.; Evans, H.; Kuo, M.C.; LeBlanc*, A.D.
Energy absorption, lean body mass, and total body fat changes during 5 weeks of continuous bed rest.

Krebs, J.M.; Schneider*, V.S.; LeBlanc*, A.D.
Zinc, copper, and nitrogen balances during bed rest and fluoride supplementation in healthy adults males.

Kuboki, Y.; Takagi, T.; Shimokawa, H.; Oguchi, H.; Sasaki, S.; Mechanic*, G.L.
Location of an intermolecular crosslink in bovine bone collagen.
Connective Tissue Research 9: 107-114, 1981. (GWU 4789)

Kuttan, R.; Di Ferrante*, N.
Sirius red-collagen interaction: A method for the measurement of collagen and bacterial collagenase activity.

Kuttan, R.; Wilson, N.; Tenni, R. (Di Ferrante, N. = P.I.)
Determination of γ-carboxyglutamic acid excretion in urine.

An improved tungsten-178/tantalum-178 generator system for high volume clinical applications.

Laval-Jeantet, A.M.; Cann, C.E.; Genant*, H.K.
Methods and problems in quantifying bone mineral of appendicular skeleton using commercial CT scanning
(Abstract).

Laval-Jeantet, A.M.; Cann, C.E.; Roger, B.; Dallant, P. (Genant, H.K. = P.I.)
A postprocessing dual energy technique for vertebral CT densitometry.

LeBlanc*, A.; Evans, H.; Jhingran, S.; Johnson*, P.
High resolution bone mineral densitometry with a gamma camera.

LeBlanc*, A.; Marsh, C.; Driscoll*, T.
Skeletal uptake of Tc-99m labelled MDP in rats suspended to simulate spaceflight.

LeBlanc*, A.; Marsh, C.; Spira, M.; Schneider*, V.; Johnson*, P.; Jhingran, S.
The effect of clomiphene on disuse bone loss (Abstract).

LeBlanc*, A.; Schneider*, V.
Bone changes in space.
LeBlanc*, A.; Schneider*, V.
Prevention of bone loss during weightlessness.

LeBlanc*, A.; Schneider*, V.; Engelbreton, D.; Evans, H.; Jhingran, S.
Precision of regional bone mineral analysis from whole body scanning (Abstract).
Journal of Nuclear Medicine 30(5): 775, 1989. (GWU 14669)

LeBlanc*, A.; Schneider*, V.; Krebs, J.; Evans, H.; Jhingran, S.; Johnson*, P.
Spinal bone mineral after 5 weeks of bed rest.

LeBlanc*, A.D.; Evans, H.J.; Johnson*, P.C.; Jhingran, S.
Changes in total body calcium balance with exercise in the rat.

LeBlanc*, A.D.; Evans, H.J.; Johnson*, P.C.; Loeffler, S.H.
Partial body activation analysis using a californium-252 source.

LeBlanc*, A.D.; Evans, H.J.; Marsh, C.; Schneider*, V.; Johnson*, P.C.; Jhingran, S.G.
Precision of dual photon absorptiometry measurements.

LeBlanc*, A.D.; Schneider*, V.S.; Engelbreton, D.A.; Evans, H.J.
Precision of regional bone mineral measurements obtained from total-body scans.

LeBlanc*, A.D.; Schneider*, V.S.; Evans, H.J.; Engelbreton, D.A.; Krebs, J.M.
Bone mineral loss and recovery after 17 weeks of bed rest.

LeBlanc*, A.D.; Schonfeld, E.; Schneider*, V.S.; Evans, H.J.; Taber, K.H.
The spine: Changes in T2 relaxation times from disuse.

Localizing studies in patients with persistent or recurrent hyperparathyroidism.

Li, X.J.; Jee*, W.S.S.; Chow, S.-Y.; Woodbury, D.M.
Adaptation of cancellous bone to aging and immobilization in the rat: A single photon absorptiometry and histomorphometry study.

Li, X.J.; Jee*, W.S.S.; Li, Y.L.
Flurbiprofen enhances growth and cancellous and cortical bone accumulation in rapidly growing long bones.
Bone 10: 35-44, 1989. (GWU 13409)

Li, X.J.; Jee*, W.S.S.; Li, Y.L.; Patterson-Buckendahl, P.
Transient effects of subcutaneously administered prostaglandin E2 on cancellous and cortical bone in young adult dogs.


Marcus, R.; Cann, C.; Madvig, P.; Minkoff, J.; Goddard, M.; Bayer, M.; Martin, M.; Gaudiani, L.; Haskell, W.; Genant*, H.
Menstrual function and bone mass in elite women distance runners: Endocrine and metabolic features.  

Markowitz, M.E.; Arnaud*, S.; Rosen, J.F.; Thorpy, M.; Laxminarayan, S.
Temporal interrelationships between the circadian rhythms of serum parathyroid hormone and calcium concentrations.  

Markowitz, M.E.; Rosen, J.F.; Arnaud*, S.; Thorpy, M.
Interrelationships between circadian rhythms of serum parathyroid hormone (PTH), ionized calcium (Ca), total calcium (CaT) and phosphate (P) concentrations (Abstract).  

Markowitz, M.E.; Rosen, J.F.; Smith, C.; DeLuca*, H.F.
1,25-dihydroxyvitamin D3-treated hypoparathyroidism: 35 patient years in 10 children.  

A new technique for measuring intestinal calcium absorption in the rat.  

Martin*, R.B.
The bending strength of rat femurs is inversely dependent on the degree of mineralization.  

Martin*, R.B.
Effects of simulated weightlessness on bone properties in rats.  

Martin*, R.B.; Arnaud*, S.B.; Burr, D.B.
Non-invasive prediction of bone strength: Comparison of photon absorptiometry with x-ray densitometry.  

Martin*, R.B.; Morey-Holton*, E.R.; Sharkey, N.A.; Maese, A.C.
Spacelab 3 simulation: Bone strength study (Abstract).  

Martin*, R.B.; Papamichos, T.; Dannucci, G.A.
Linear calibration of radiographic mineral density using video-digitizing methods.  
*Calcified Tissue International* 47(2): 82-91, 1990.  (GWU 13700)

Martin*, R.B.; Paul, H.A.; Bargar, W.L.; Dannucci, G.A.; Sharkey, N.A.
Effects of estrogen deficiency on the growth of tissue into porous titanium implants.  

Martinez, D.; Grindeland*, R.; Vailas*, A.C.
Acute adaptation of the cortical bone matrix to weightlessness (Abstract).  
Martinez, D.A.; Vailas*, A.C.; Grindeland*, R.E.
Growth hormone modification of cortical bone to hindlimb suspension in hypophysectomized rats
(Abstract).

Mathews, C.H.E.; Brommage, R.; DeLuca*, H.F.
Skeletal defects observed in vitamin D-deficient rat pups result from decreased milk consumption and not
directly from vitamin D deficiency (Abstract).
*Calcified Tissue International* 36: 520, 1984. (GWU 7183)

Structural and mechanical adaptation of immature bone to strenuous exercise.

Matthews*, J.L.
K-305: Quantitative analysis of selected bone parameters. Supplemental Report 3B: Mineralization in the
long bones.
In: *Final Reports of U.S. Rat Experiments Flown on the Soviet Satellite Cosmos 1129* (Heinrich, M.R.,
81289) (GWU 2427)

Mazess*, R.B.
Alternatives to CT measurement of bone (Abstract).

Mazess*, R.B.
Errors in measuring trabecular bone by computed tomography due to marrow and bone composition.
*Calcified Tissue International* 35: 148-152, 1983. (GWU 4602)

Mazess*, R.B.
Noninvasive measurement of local bone in osteoporosis.
In: *Osteoporosis: Recent Advances in Pathogenesis and Treatment* (DeLuca, H.F., Frost, H.M., Jee,
(GWU 2779)

Mazess*, R.B.
The noninvasive measurement of skeletal mass.
Medica, p. 223-279, 1983. (GWU 4230)

Mazess*, R.B.
On aging bone loss.
*Clinical Orthopaedics and Related Research* 165: 239-252, 1982. (GWU 2963)

Mazess*, R.B.
Photon absorptiometry.
In: *Non-Invasive Measurements of Bone Mass and Their Clinical Application* (Cohn, S.H., Ed.). Boca

Mazess*, R.B.
Problems in measurement of trabecular bone.
In: *Clinical Disorders of Bone and Mineral Metabolism* (Frame, B., Potts, J.T., Jr., Eds.). Amsterdam,
The Netherlands: Excerpta Medica, p. 30-33, 1983. (GWU 5860)

Mazess*, R.B.
Spinal mineral by 153-Gd absorptiometry in osteoporosis (Abstract).
*Calcified Tissue International* 35(Suppl.): A60, 1983. (GWU 5122)
Mazess*, R.B.
Total body and regional bone mineral by dual-photon absorptiometry (Abstract).
*Calcified Tissue International* 33(3): 328, 1981. (GWU 3423)

Mazess*, R.B.; Christiansen, C.
A comparison of bone mineral results from Denmark and the U.S.

Does bone measurement on the radius indicate skeletal status? Concise communication.

Total body and regional bone mineral by dual-photon absorptiometry in metabolic bone disease.
*Calcified Tissue International* 36: 8-13, 1984. (GWU 5495)

Mazess*, R.B.; Peppler, W.W.; Chesnut, C.H., III; Nelp, W.B.; Cohn, S.H.; Zanzi, I.
Total body bone mineral and lean body mass by dual-photon absorptiometry. II. Comparison with total body calcium by neutron activation analysis.

Mazess*, R.B.; Peppler, W.W.; Gibbons, M.
Total body composition by dual-photon (153Gd) absorptiometry.

Mazess*, R.B.; Peppler, W.W.; Harrison, J.E.; McNeill, K.G.
Total body bone mineral and lean body mass by dual-photon absorptiometry. III. Comparison with trunk calcium by neutron activation analysis.

Mazess*, R.B.; Vetter, J.
The influence of marrow on measurement of trabecular bone using computer tomography.
*Bone* 6: 349-351, 1985. (GWU 7321)

Mazess*, R.B.; Whedon, G.D.
Immobilization and bone.
*Calcified Tissue International* 35: 265-267, 1983. (GWU 4690)

Mazess*, R.B.; Young*, D.
Measurement of spine and total body mineral by dual-photon absorptiometry.

McDonald, J.; Schneider*, V.; Rambaut*, P.; Dietlein*, L.; Whedon, G.D.
Prevention of disuse osteoporosis: Clodronate therapy (Abstract).

Mechanic*, G.L.; Arnaud*, S.B.; Boyce, A.; Bromage, T.G.; Buckendahl, P.; Elliott, J.C.; Katz, E.P.; Durnova, G.N.
Regional distribution of mineral and matrix in the femurs of rats flown on Cosmos 1887 biosatellite.

Mechanic*, G.L.; Arnaud*, S.B.; Boyce, A.; Buckendahl, P.; Bromage, T.G.; Elliott, J.; Katz, E.P.; Durnova, G.N.
Regional changes in mineral and matrix in rat femoral diaphysis after space flight (Abstract).
Mechanic*, G.L.; Banes, A.J.
The role of 3-hydroxyprolidinium in bone collagen (Abstract).
*Calcified Tissue International* 36: 495, 1984. (GWU 7188)

Mechanic*, G.L.; Banes, A.J.; Henmi, M.; Yamauchi, M.
Possible collagen structural control of mineralization.
In: *The Chemistry and Biology of Mineralized Connective Tissue* (Butler, W.T., Ed.).

Mechanic*, G.L.; Farb, R.M.; Henmi, M.; Ranga, V.; Bromberg, P.A.; Yamauchi, M.
Structural crosslinking of lung connective tissue collagen in the Blotchy mouse.

Mechanic*, G.L.; Katz, E.P.; Henmi, M.; Noyes, C.; Yamauchi, M.
Locus of a histidine-based, stable trifunctional, helix to helix collagen cross-link: Stereospecific collagen
structure of type I skin fibrils.

Mechanic*, G.L.; Katz, E.P.; Yamauchi, M.
Structure of type I collagen in skin & skeletal tissues (Abstract).
*Connective Tissue Research* 22: 267, 1989. (GWU 14577)

Mechanic*, G.L.; Young*, D.R.; Banes, A.J.; Yamauchi, M.
Nonmineralized and mineralized bone collagen in bone of immobilized monkeys.
*Calcified Tissue International* 39: 63-68, 1986. (GWU 7474)

Messier, A.A.; Cohn, S.H.; Neer*, R.M.; Vaswani, A.; Tappen, D.V.; Bondi, K.R.
Assessment of bone and body composition in recently retired and active duty submariners (Abstract).

Miller, S.; Bowman, M.; Smith, J.; Jee*, W.
Morphometry of bone-lining cells and microvascular ultrastructure of fatty marrow bone sites in adult
beagles (Abstract).
*Metabolic Bone Disease and Related Research* 2(Suppl.): 498-499, 1980. (GWU 4225)

Miller, S.C.; Jee*, W.S.S.
The bone forming cells: Origin, distribution, proliferation and differentiation.
In: *Bone Morphometry* (Takahashi, H.E., Ed.).
Niigata, Japan: Nishimura Co., p. 29-36, 1990. (GWU 13569)

Miller, S.C.; Jee*, W.S.S.
The bone lining cell: A distinct phenotype?

Effects of N,N,N',N'-ethylenediaminetetramethylene phosphonic acid and 1-hydroxyethylidene-1,1-
bisphosphonic acid on calcium absorption, plasma calcium, longitudinal bone growth, and bone histology
in the growing rat.

Use of impedance plethysmography to continually monitor bone marrow blood flow.

Morey*, E.R.; Wronski, T.J.; Cann*, C.E.
Bone turnover and space flight.
In: *Preprints of 1981 Annual Scientific Meeting, Aerospace Medical Association*,

25
Morey-Holton*, E.
A 14-day ground-based hypokinesia study in nonhuman primates: A compilation of results.
In: A 14-Day Ground-Based Hypokinesia Study in Nonhuman Primates: A Compilation of Results
(Kazarian, L., Cann, C., Parfitt, M., Simmons, D., Morey-Holton, E., Eds.). Moffett Field, CA: NASA,

Morey-Holton*, E.; Arnaud*, S.B.
Spaceflight and bone dynamics (Abstract).

Morey-Holton*, E.R.
Effect of space flight on bone (Abstract).
In: Space-Environment Workshop for Life Scientists. Washington, DC: NASA Headquarters, p. 20-21,
1980. (GWU 4940)

Morey-Holton*, E.R.; Arnaud*, S.B.
Spaceflight and calcium metabolism.
Physiologist 28(6, Suppl.): S9-S12, 1985. (GWU 6583)

Is suppression of bone formation during simulated weightlessness related to glucocorticoid levels?
Physiologist 25(6, Suppl.): S145-S146, 1982. (GWU 3804)

Morey-Holton*, E.R.; Bomalaski, M.D.; Wronski, T.J.
Is suppression of bone formation during simulated weightlessness gradual and related to glucocorticoid
levels? (Abstract)

Morey-Holton*, E.R.; Maese, C.A.; Wronski, T.J.
Comparison of back harness and tail suspension techniques on bone parameters in growing rats (Abstract).

Arnaud*, C.D.
Vitamin D metabolites and bioactive parathyroid hormone levels during Spacelab 2.

Mori, S.; Jee*, W.S.S.; Li, X.J.; Chan, S.; Kimmel, D.B.
Effects of prostaglandin E2 on production of new cancellous bone in the axial skeleton of ovariectomized
rats.
Bone 11: 103-113, 1990. (GWU 13455)

Nguyen, N.Y.; Grindeland*, R.E.; Chrambach, A.
Isolation of human growth hormone isohormones D and E in milligram amounts (II), using isoelectric
focusing on polyacrylamide gel.

Niklowitz, W.J.; Bunch*, T.E.; Young*, D.R.
The effects of immobilization on cortical bone in monkeys (M. nemestrina).

Covalent labeling of a high-affinity, guanyl nucleotide sensitive parathyroid hormone receptor in canine
renal cortex.
Norrdin, R.W.; Jee*, W.S.S.; High, W.B.
The role of prostaglandins in bone in vivo.
Prostaglandins Leukotrienes and Essential Fatty Acids 41: 139-149, 1990. (GWU 13451)

Ono, S.; Mechanic*, G.L.; Yamauchi, M.
Amyotrophic lateral sclerosis: Unusually low content of collagen in skin.
Journal of the Neurological Sciences 100: 234-237, 1990. (GWU 13946)

Pahuja, D.N.; DeLuca*, H.F.
Role of the hypophysis in the regulation of vitamin D metabolism.
Molecular and Cellular Endocrinology 23: 345-350, 1981. (GWU 4874)

Pahuja, D.N.; DeLuca*, H.F.
Thyroid hormone and vitamin D metabolism in the rat.
Archives of Biochemistry and Biophysics 213(1): 293-298, 1982. (GWU 4429)

Structure and vascular activity relationship of parathyroid hormone and some hypotensive peptides.

Parker, D.L.; Smith, V.; Stanley*, J.H.
Optimal noise and dose considerations in the reduction of patient motion artifacts by overscanning (Abstract).

Patterson-Allen, P.; Brautigam, C.E.; Grindeland*, R.E.; Asling, C.W.; Callahan*, P.X.
A specific radioimmunoassay for osteocalcin with advantageous species crossreactivity.
Analytical Biochemistry 120: 1-7, 1982. (GWU 3931)

Patterson-Allen, P.E.; Callahan*, P.X.; Young*, D.R.
Identification of osteocalcin in urine, and its elevation in primate immobilization (Abstract).
Calcified Tissue International 34(Suppl. 1): 12, 1982. (GWU 4702)

Effects of stress and immobilization on serum osteocalcin in rats (Abstract).
Calcified Tissue International 35: 647, 1983. (GWU 5467)

Patterson-Buckendahl, P.; Arnaud*, S.B.; Mechanic*, G.L.; Martin*, R.B.; Grindeland*, R.E.; Cann*, C.E.
Fragility and composition of growing rat bone after one week in spaceflight.

Patterson-Buckendahl, P.; Globus, R.K.; Bikle*, D.D.; Cann*, C.E.; Morey-Holton*, E.
Effects of simulated weightlessness on rat osteocalcin and bone calcium.
American Journal of Physiology 257: R1103-R1109, 1989. (GWU 12884)

Patterson-Buckendahl, P.; Ortiz, C.L.; Cann*, C.E.
Skeletal growth and development in fasting Northern elephant seals (Abstract).
Physiologist 33(4): A76, 1990. (GWU 12108)

Patterson-Buckendahl, P.E.; Grindeland*, R.E.; Martin, R.B.; Cann*, C.E.; Arnaud*, S.B.
Osteocalcin as an indicator of bone metabolism during spaceflight.
Physiologist 28(6, Suppl.): S227-S228, 1985. (GWU 6888)

Patterson-Buckendahl, P.E.; Grindeland*, R.E.; Shakes, D.C.; Morey-Holton*, E.R.; Cann*, C.E.
Circulating osteocalcin in rats is inversely responsive to changes in corticosterone.
Paulson, S.K.; DeLuca*, H.F.; Battaglia, F.C.; Meschia, G.
Maternal turnover and transfer rates of 1,25-dihydroxyvitamin D in the pregnant ewe (Abstract).
*Calcified Tissue International* 36: 522, 1984. (GWU 7693)

Peppier, W.W.; Mazess*, R.B.
Total body bone mineral and lean body mass by dual-photon absorptiometry. I. Theory and measurement procedure.
*Calcified Tissue International* 33(4): 353-359, 1981. (GWU 2536)

Polig, E.; Jee*, W.S.S.
Automated trabecular bone histomorphometry.
*Bone* 6: 357-359, 1985. (GWU 7322)

Polig, E.; Jee*, W.S.S.
A model of osteon closure in cortical bone.
*Calcified Tissue International* 47: 261-269, 1990. (GWU 13461)

Polig, E.; Jee*, W.S.S.; Dell, R.B.; Johnson, F.
Microdistribution and local dosimetry of $^{266}$Ra in trabecular bone of the beagle.

Powell, M.R.; Kolb, F.O.; Genant*, H.K.; Cann, C.E.; Stebler, B.G.
Comparison of dual photon absorptiometry and quantitative computed tomography of the lumbar spine in the same subjects.

Quantitative bone mineral analyses in primary hyperparathyroidism.
*Journal of Computer Assisted Tomography* 7(3): 555, 1983. (GWU 5012)

Quantitative bone mineral analyses in primary hyperparathyroidism (Abstract).
*Calcified Tissue International* 35(Suppl.): A43, 1983. (GWU 5121)

Warfarin-treatment accelerates bone resorption in the metaphysis of 1,25 dihydroxyvitamin D$_3$-treated rats (Abstract).
*Calcified Tissue International* 36: 523, 1984. (GWU 7696)

Excessive mineralization with growth plate closure in rats on chronic warfarin treatment.
*Proceedings of the National Academy of Sciences USA* 79: 7734-7738, 1982. (GWU 4374)

Puzas, J.E.; Drivdahl, R.H.; Howard, G.A.; Baylink, D.J. (Morey-Holton, E.R. = P.I.)
Evidence for local regulation of bone metabolism: A potent inhibitor of bone cell proliferation (Abstract).

Rakhmanov, A.S.; Oganov, V.S.; Ternovoy, S.K.; Cann*, C.; Genant*, H.
Mineral density of man's skeletal bones during antithorostatic hypokinesia (Abstract).

Rambaut*, P.C.
Weightlessness and bone loss in man.
In: *Space Physiology*. Toulouse, France: Centre Nationale d'Etudes Spatiales, p. 201-208, 1983. (GWU 5568)
Rambaut*, P.C.; Goode, A.W.
Skeletal changes during space flight.

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. (GWU 2602)

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: 233-237, 1980. (GWU 2605)

Reeve, J.; Meunier, P.J.; Parsons, J.A.; Bernat, M.; Bijvoet, O.L.M.; Courpron, P.; Edouard, C.;
Anabolic effect of human parathyroid hormone fragment on trabecular bone in involutional osteoporosis: A
multicentre trial.

Reinbold, W.-D.; Genant*, H.K.; Reiser, U.J.; Harris, S.T.; Ettinger, B.
Bone mineral content in early-postmenopausal and postmenopausal osteoporotic women: Comparison of
measurement methods.

Richards, T.L.; Davis, C.A.; Barker, B.R.; Beinert, W.D.; Genant*, H.K.
Lipid/water ratio of bone marrow measured by phase-encoded proton nuclear magnetic resonance
spectroscopy.

Richardson, M.L.; Genant*, H.K.; Cann, C.E.; Ettinger, B.; Gordan, G.S.; Kolb, F.O.; Reiser, U.J.
Assessment of metabolic bone diseases by quantitative computer tomography.
*Clinical Orthopaedics and Related Research* 195: 224-238, 1985. (GWU 7681)

Richardson, M.L.; Genant*, H.K.; Cann, C.E.; Kolb, F.O.; Ettinger, B.; Gordan, G.S.
Noninvasive assessment of skeletal mass.

Riggs, B.L.; Wahner, H.W.; Dunn, W.L.; Mazess*, R.B.; Offord, K.P.; 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. (GWU 563)

Riggs, L.; Hamstra, A.; DeLuca*, H.F.
Assessment of 25-hydroxyvitamin D 1α-hydroxylase reserve in postmenopausal osteoporosis by
administration of parathyroid extract.

Risser, W.L.; Lee, E.J.; LeBlanc*, A.; Poindexter, H.B.W.; Risser, J.M.H.; Schneider*, V.
Bone density in eumenorrheic female college athletes.

Roberts, W.E.; Garetto, L.P.; Jee*, W.S.S.
Differential glucorticoid influence on osteoblast histogenesis during mechanically induced osteogenesis
(Abstract).
*Calcified Tissue International* 44(Suppl.): S98, 1989. (GWU 12808)
Roer, R.D.; Dillaman*, R.M.
Bone growth and calcium balance during simulated weightlessness in the rat. 

Roer, R.D.; Dillaman*, R.M.
Changes in marker distribution with tail suspension in the rat (Abstract).

Roer, R.D.; Dillaman*, R.M.; Rutherford, E.
Effects of tail suspension on bone growth and calcium balance in juvenile rats (Abstract).

Roer, R.D.; Dillaman*, R.M.; Rutherford, E.
Molecular marker distribution and computer modeling of rat bone fluid dynamics (Abstract).

Rutt, B.K.; Stebler, B.G.; Cann, C.E.; Boyd*, D.P.; Genant*, H.K.; Manatt*, S.L.
Whole-body CT scanner for ultra precise, ultra accurate determination of bone density.

Sabelman, E.E.; Holton*, E.M.; Arnaud*, C.D.
Experiment K-314: Fetal and neonatal rat bone and joint development following in utero space flight.

Salem, G.; Zernicke, R.; Vailas*, A.; Martinez, D.
Biomechanical and biochemical changes in lumbar vertebrae of rapidly growing rats (Abstract).

Salem, G.J.; Zernicke, R.F.; Vailas*, A.C.; Martinez, D.A.
Biomechanical and biochemical changes in lumbar vertebrae of rapidly growing rats.

Schneider*, V.S.
Space medicine considerations: Skeletal and calcium homeostasis.

Schneider*, V.S.; LeBlanc*, A.; Huntoon*, C.L.
Prevention of space flight induced soft tissue calcification and disuse osteoporosis.
Paper presented at the 41st Congress of the International Astronautical Federation, Dresden, Germany, October 6-12, 1990, 2 p. (IAF/IAA-90-512) (GWU 14266)

Schneider*, V.S.; LeBlanc*, A.; Rambaut*, P.C.
Bone and mineral metabolism.

Schneider*, V.S.; McDonald, J.
Skeletal calcium homeostasis and countermeasures to prevent disuse osteoporosis.
*Calcified Tissue International* 36: S151-S154, 1984. (GWU 7352)

Searle, G.; Hsu, F.; Arnaud*, C.; Clark, O.; Feingold, K.
Lactate kinetics in hyperparathyroidism (Abstract).
Segre, G.V.; Harris, S.T.; Neer*, R.; Potts, J.T., Jr.
Sigmoidal relationship between plasma parathyroid hormone and calcium concentration in man (Abstract).
*Calcified Tissue International* 35(3): 317, 1981. (GWU 4158)

Effects of a 1-wk spaceflight on morphological and mechanical properties of growing bone.

Mechanical, morphological, and biochemical adaptations of bone to hindlimb suspension and exercise (Abstract).
*Medicine and Science in Sports and Exercise* 18(2, Suppl.): S5, 1986. (GWU 7460)

Sheng, H.P.; Abrams, S.A.; Schanler, R.J.; Judge, D.; Evans, H.J.; LeBlanc*, A.; Garza, C.
Total body calcium and bone mineralization are compromised in calcium-restricted piglets (Abstract).

Sheng, H.P.; Huggins, R.A.; Garza, C.; Evans, H.J.; LeBlanc*, A.D.; Nichols, B.L.; Johnson*, P.C.
Total body sodium, calcium, and chloride measured chemically and by neutron activation in guinea pigs.

Silve, C.M.; Hradek, G.T.; Jones, A.L.; Arnaud*, C.D.
Parathyroid hormone receptor in intact embryonic chicken bone: Characterization and cellular localization.

Silver, B.B.; Harris, B.A.; Arnaud*, S.B.
A sensitive technique for monitoring intracellular calcium and electrolytes (Abstract).

Simmons*, D.J.; Grazman, B.; Russell, J.E.; Walker, W.V.; Bikle*, D.D.; Morey*, E.R.
Simulating certain aspects of hypogravity: Effects on bone maturation in the non-weight bearing skeleton.
*Aviation, Space, and Environmental Medicine* 54(12): 1080-1084, 1983. (GWU 5234)

Simmons*, D.J.; Parvin, C.; Smith, K.C.; France, P.; Kazarian*, L.
Effect of rotopositioning on the growth and maturation of mandibular bone in immobilized rhesus monkeys.
*Aviation, Space, and Environmental Medicine* 57(2): 157-161, 1986. (GWU 8725)

Simmons*, D.J.; Russell, J.E.; Walker, W.V.; Grazman, B.; Oloff, C.; Kazarian*, L.
Growth and maturation of mandibular bone in otherwise totally immobilized rhesus monkeys.

Simmons*, D.J.; Russell, J.E.; Winter, F.; Rosenberg, G.D.; Walker, W.V.
K-310: The effect of spaceflight on osteogenesis and dentinogenesis in the mandibles of rats.

Parathyroid hormone (PTH) infusion inhibits type I collagen synthesis in humans (Abstract).

Simpson, R.U.; DeLuca*, H.F.
Purification of chicken intestinal receptor for 1α,25-dihydroxyvitamin D₃ to apparent homogeneity.
*Proceedings of the National Academy of Sciences USA* 79: 16-20, 1982. (GWU 4555)
Purification of the receptor for 1α,25-dihydroxyvitamin D$_3$ from chicken intestine.  
*Biochemistry* 22(10): 2586-2594, 1983. (GWU 5425)

Sjöden, G.; Lindgren, J.U.; DeLuca*, H.F.  
Antirachitic activity of 1α-hydroxyergocalciferol and 1α-hydroxycholecalciferol in rats.  

Slovik, D.M.; Neer*, R.M.; Ohman, J.L.; Lowell, F.C.; Clark, M.B.; Segre, G.V.; Potts, J.T., Jr.  
Parathyroid hormone and 25-hydroxyvitamin D levels in glucocorticoid-treated patients.  

Slovik, D.M.; Neer*, R.M.; 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. (GWU 2604)

Spector, M.; Turner, R.T.; Morey-Holton*, E.; Baylink, D.J.; Bell, N.H.  
Arrested bone formation during space flight results in a hypomineralized skeletal defect.  
*Physiologist* 26(6, Suppl.): S110-S111, 1983. (GWU 5262)

Spengler, D.M.; Morey*, E.R.; Carter, D.R.; Turner, R.T.; Baylink, D.J.  
Effects of spaceflight on structural and material strength of growing bone.  

Sprague, E.A.; Steinbach, B.L.; Nerem*, R.M.; Schwartz, C.J.  
Influence of a laminar steady-state fluid-imposed wall shear stress on the binding, internalization, and degradation of low-density lipoproteins by cultured arterial endothelium.  

Stalp, J.T.; Mazess*, R.B.  
Determination of bone density by coherent-Compton scattering.  

Steele*, C.R.  
Instrument for assessment of bone properties.  

Noninvasive determination of ulnar stiffness from mechanical response: In vivo comparison of stiffness and bone mineral content in humans.  

Spinal bone mineral density measured with quantitative CT: Effect of region of interest, vertebral level, and technique.  

Steiger, P.; enant*, H.K.; Steiger, S.; Block, J.E.; Smith, R.  
Quantitative imaging evaluation techniques for quantitative computed tomography in longitudinal studies (Abstract).  
Steiger, P.; Steiger, S.; Ruegsegger, P.; Genant*, H.K. 
Two- and three-dimensional quantitative image evaluation techniques for densitometry and volumetrics in 
longitudinal studies.

Steinherz, R.; Chesney, R.W.; Schulman, J.D.; DeLuca*, H.F.; Phelps, M. 
Circulating vitamin D metabolites in nephopathic cystinosis.

Stern, P.H.; Halloran*, B.P.; DeLuca*, H.F.; Hefley, T.J. 
Responsiveness of vitamin D-deficient fetal rat limb bones to parathyroid hormone in culture.

Fluoride substitution of vitamin D analogs at C-26 and C-27: Enhancement of activity of 25-
hydroxyvitamin D but not of 1,25-dihydroxyvitamin D on bone and intestine in vitro.

Stern, P.H.; Tanaka, Y.; DeLuca*, H.F.; Ikekawa, N.; Kobayashi, Y. 
Bone resorptive activity of side-chain fluoro derivatives of 25-hydroxy- and 1α,25-dihydroxyvitamin D3 in 
culture.
Molecular Pharmacology 20: 460-462, 1981. (GWU 4288)

Autoradiographic studies with 3H 1,25 (OH) 2 vitamin D3 and 3H 25 (OH) vitamin D3 in rat parathyroid 
glands.
Cell and Tissue Research 2221: 333-338, 1981. (GWU 4768)

Suki*, W.; Johnson*, P.C.; LeBlanc*, A.; Evans, H.J. 
Analysis of Body Calcium (Regional Changes in Body Calcium by In Vivo Neutron Activation Analysis). 

Teitelbaum, A.P.; Silve, C.M.; Nyiredy, K.O.; Arnaud*, C.D. 
Down-regulation of parathyroid hormone (PTH) receptors in cultured bone cells is associated with agonist-
specific intracellular processing of PTH-receptor complexes.

 Cultured fibroblasts of juvenile diabetics have excessively soluble pericellular collagen.
Biochemical and Biophysical Research Communications 92(4): 1071-1075, 1980. (GWU 646)

Tilton, F.E.; DeGioanni*, J.J.C.; Schneider*, V.S. 
Long-term follow-up of Skylab bone demineralization.
Aviation, Space, and Environmental Medicine 51(11): 1209-1213, 1980. (GWU 1271)

Tipton*, C.M.; Vailas*, A.C. 
Bone and connective tissue adaptations to physical activity.
In: Exercise, Fitness and Health (Bouchard, C., Shephard, R.J., Stephens, T., Sutton, J.R., McPherson, 

Tran Van, P.; Vignery, A.; Baron, R. 
K-310: The effect of space flight on osteogenesis and dentinogenesis in the mandible of rats. Supplement 
1: The effects of space flight on alveolar bone modeling and remodeling in the rat mandible. 
In: Final Reports of U.S. Rat Experiments Flown on the Soviet Satellite Cosmos 1129 (Heinrich, M.R., 
81289) (GWU 2424)
Tsuzaki, M.; Yamauchi, M.; Mechanic*, G.L.
Bovine dental pulp collagens: Characterization of types III and V collagen.

Turner, R.T.; Bell, N.H.; Duvall, P.; Bobyn, J.D.; Spector, M.; Holton*, E.M.; Baylink, D.J.
Spaceflight results in formation of defective bone.

The effects of prostaglandin E2 in rapidly growing rats: Depressed longitudinal and radial growth and increased metaphyseal hard tissue mass.
Bone 6: 79-86, 1985. (GWU 7465)

Increased metaphyseal hard tissue mass in growing long bone following prostaglandin E2 administration.

Underwood, J.L.; Arnaud*, S.B.; Fung, P.; Young*, D.R.
25 hydroxyvitamin D, 1xhydroxylase (1-OH-lase) activity in rhesus monkeys.

Vailas*, A.C.; DeLuna, D.; Edgerton*, V.R.; Roy, R.R.
Evidence for bone modelling during prolonged hindlimb suspension (Abstract).

Adaptation of bone and tendon to prolonged hindlimb suspension in rats.

Biochemical, morphological and mechanical characteristics of cortical bone in young growing rats exposed to 7 days of spaceflight: Results from the SL-3 flight mission (Abstract).

Vailas*, A.C.; Zernicke, R.F.; Grindeland*, R.E.; Kaplansky, A.; Durnova, G.N.; Li, K.-C.; Martinez, D.A.
Effects of spaceflight on rat humerus geometry, biomechanics, and biochemistry.

Suspension effects on morphological and mechanical properties of the bone-ligament junction (Abstract).
Medicine and Science in Sports and Exercise 21(2, Suppl.): S88, 1989. (GWU 14659)

Vailas*, A.C.; Zernicke, R.F.; Grindeland*, R.E.; Li, K.-C.
Suspension effects on rat femur-medial collateral ligament-tibia unit.

Vailas*, A.C.; Zernicke, R.F.; Matsuda, J.; Curwin, S.; Durivage, J.
Adaptation of rat knee meniscus to prolonged exercise.

Vanderby, R., Jr.; Vailas*, A.C.; Graf, B.K.; Thielke, R.J.; Ulm, M.J.; Kohles, S.S.; Kunz, D.N.
Acute modification of biomechanical properties of the bone-ligament insertion to rat limb unweighting.
Vincenti, F.; Arnaud*, S.B.; Recker, R.; Genant*, H.; Amend, W.J.C., Jr.; Feduska, N.J.; Salvatiera, O., Jr.
Parathyroid and bone response of the diabetic patient to uremia.

Vogler, J.B.; Genant*, H.K.
Metabolic and endocrine disease.

The normal sacroiliac joint: A CT study of asymptomatic patients.

Wang, T.M.; Jee*, W.S.S.; Woodbury, L.A.; Matthews, J.L.
Effects of phytohemagglutinin-P (PHA-P) on bone of the growing rat.
*Metabolic Bone Disease and Related Research* 4: 193-199, 1982. (GWU 4389)

Weinstein, R.S.; Underwood, J.L.; Hutson, M.S.; DeLuca*, H.F.
Mineralization in normocalcemic, normophosphatemic vitamin D-deficient rats (Abstract).
*Clinical Research* 31(5): A853, 1983. (GWU 5850)

Whalen, R.T.; Carter*, D.R.; Steele*, C.R.
Influence of physical activity on the regulation of bone density.

Wiles, H.; Lacy, J.; Watson, E.; Stabin, M.; LeBlanc*, A.; Bricker, J.
Radiation dose estimates for adults and newborns from tungsten-178: Based on distribution data in adult and infant animals.

Winter, D.C.; Nerem*, R.M.
Turbulence in pulsatile flows.
*Annals of Biomedical Engineering* 12: 357-369, 1984. (GWU 7302)

Woodard, J.C.; Jee*, W.S.S.
Effect of diet and intranephronic calculus on bone modeling and parathyroid volume in rats.

Woodard, J.C.; Jee*, W.S.S.
Effects of dietary calcium, phosphorus and magnesium on intranephronic calculus in rats.

Wronski, T.J.; Morey*, E.R.
Alterations in calcium homeostasis and bone during actual and simulated space flight.

Wronski, T.J.; Morey*, E.R.
Effect of spaceflight on periosteal bone formation in rats.

Wronski, T.J.; Morey*, E.R.
Inhibition of cortical and trabecular bone formation in the long bones of immobilized monkeys.
*Clinical Orthopaedics and Related Research* 181: 269-276, 1983. (GWU 5739)
Wronski, T.J.; Morey*, E.R.
Recovery of the rat skeleton from the adverse effects of simulated weightlessness.
*Metabolic Bone Disease and Related Research* 4: 347-352, 1983. (GWU 5488)

Wronski, T.J.; Morey*, E.R.
Skeletal abnormalities in rats induced by simulated weightlessness.
*Metabolic Bone Diseases and Related Research* 4: 69-75, 1982. (GWU 3574)

Wronski, T.J.; Morey-Holton*, E.; Cann*, C.E.; Arnaud*, C.D.; Baylink, D.J.; Turner, R.T.; Jee*, W.S.S.
K305: Quantitative analysis of selected bone parameters.

Wronski, T.J.; Morey-Holton*, E.; Jee*, W.S.S.
Cosmos 1129: Spaceflight and bone changes.
*Physiologist* 23(6, Suppl.): S79-S82, 1980. (GWU 2442)

Wronski, T.J.; Morey-Holton*, E.R.
Alterations in calcium metabolism and bone structure during space flight in man and rats (Abstract).

Wronski, T.J; Morey-Holton*, E.R.
Skeletal response to simulated weightlessness: A comparison of suspension techniques.

Wronski, T.J.; Morey-Holton*, E.R.; Maese, A.C.; Walsh, C.C.
Space Lab 3: Histomorphometric analysis of the rat skeleton (Abstract).

Wronski, T.J.; Smith, J.M.; Jee*, W.S.S.
Variations in mineral apposition rate of trabecular bone within the beagle skeleton.

Wunder*, C.C.; Matthes, R.D.; Tipton, C.M.
Knee-ligament loading properties as influenced by gravity: I. Junction with bone of 3-G rodents.
*Aviation, Space, and Environmental Medicine* 53(11): 1098-1104, 1982. (GWU 3598)

Wunder*, C.C.; Matthes, R.D.; Tipton, C.M.
Knee-ligament loading properties as influenced by gravity: II. Junctional capacity vs. femur length.

Yamauchi, M.; Banes, A.J.; Mechanic*, G.L.
Purification of a pyridinoline-containing peptide fraction from avian osteoblastoma bone (Abstract).
*Calcified Tissue International* 36: 487, 1984. (GWU 7310)

Yamauchi, M.; Katz, E.P.; Mechanic*, G.L.
Intermolecular cross-linking and stereospecific molecular packing in type I collagen fibrils of the periodontal ligament.
*Biochemistry* 25: 4907-4913, 1986. (GWU 7722)

Yamauchi, M.; Katz, E.P.; Otsubo, K.; Teraoka, K.; Mechanic*, G.L.
Cross-linking and stereospecific structure of collagen in mineralized and nonmineralized skeletal tissues.
*Connective Tissue Research* 21: 159-169, 1989. (GWU 13942)
Yamauchi, M.; Kuboki, Y.; Sasaki, S.; Mechanic*, G.L.
New pepsin-solubilized low molecular weight collagenous component possibly unique to periodontal ligament.

Structure and formation of a stable histidine-based trifunctional cross-link in skin collagen.

Yamauchi, M.; Mechanic*, G.L.
Cross-linking and bone collagen synthesis in immobilized and recovering primate osteoporosis (Abstract).
*Calcified Tissue International* 44: S34, 1989. (GWU 14675)

Yamauchi, M.; Mechanic*, G.L.
Cross-linking of collagen.

Yamauchi, M.; Teraoka, K.; Otsubo, K.; Katz, E.P.; Mechanic*, G.L.
Cross-linking and stereospecific structure of collagen in mineralized and non-mineralized tissues (Abstract).
*Calcified Tissue International* 44: S95, 1989. (GWU 14576)

Yamauchi, M.; Woodley, D.T.; Mechanic*, G.L.
Aging and cross-linking of skin collagen.
*Biochemical and Biophysical Research Communications* 152(2): 898-903, 1988. (GWU 10770)

Yamauchi, M.; Young*, D.R.; Chandler, G.S.; Mechanic*, G.L.
Cross-linking and new bone collagen synthesis in immobilized and recovering primate osteoporosis.

Yen-Chow, Y.C.; Chow, S.Y.; Jee*, W.S.S.; Woodbury*, D.M.
Membrane potentials, electrolyte contents, cell pH, and some enzyme activities of fibroblasts.

Young*, D.R.
Reversible osteoporosis in a primate model.
In: *Third International Symposium on Osteoporosis*, Copenhagen, Denmark, June 3-8, 1984, p. 475-479. (GWU 7882)

Young*, D.R.; Niklowitz, W.J.; Brown, R.J.; Jee*, W.S.S.
Immobilization-associated osteoporosis in primates.

Young*, D.R.; Niklowitz, W.J.; Steele*, C.R.
Tibial changes in experimental disuse osteoporosis in the monkey.
*Calcified Tissue International* 35: 304-308, 1983. (GWU 4610)

Young*, D.R.; Schneider*, V.S.
Radiographic evidence of disuse osteoporosis in the monkey (*M. nemestrina*).

Young*, D.R.; Swenson, R.S.
Acid-base status during short-term immobilization in monkeys (*M. nemestrina*) (Abstract).

Young*, D.R.; Swenson, R.S.
Metabolic alkalosis during immobilization in monkeys (Abstract).
*Federation Proceedings* 41(3): 1012, 1982. (GWU 4517)
Young*, D.R.; Yeh, I.; Swenson, R.S.
Metabolic alkalosis during immobilization in monkeys (*M. nemestrina*).
*Calcified Tissue International* 35: 472-476, 1983. (GWU 5462)

Changes in geometrical and biomechanical properties of immature male and female rat tibia.
*Aviation, Space, and Environmental Medicine* 61(9, Section 1): 814-820, 1990. (GWU 11720)

Spaceflight effects on biomechanical and biochemical properties of rat vertebrae.

Zernicke, R.F.; Vailas*, A.C.; Grindeland*, R.E.; Li, K.-C.; Salem, G.J.
Interactive effects of nutrition, environment, and rat-strain on cortical and vertebral bone geometry and biomechanics.

Zernicke, R.F.; Vailas*, A.C.; Grindeland*, R.E.; Li, K.-C.; Salem, G.J.
Interactive effects of nutrition, environment, and rat-strain on cortical and vertebral bone geometry and biomechanics (Abstract).
*Journal of Biomechanics* 22(10): 1108, 1989. (GWU 14637)

Zernicke, R.F.; Vailas*, A.C.; Salem, G.J.
Biomechanical response of bone to weightlessness.
MUSCLE
Alford, E.K.; Roy, R.R.; Chiang, P.C.; Edgerton*, V.R.
Hindlimb suspension effects on integrated electromyographic activity in selected rat hindlimb muscles (Abstract).

Electromyography of rat soleus, medial gastrocnemius, and tibialis anterior during hind limb suspension.

Almon*, R.R.; Dubois, D.C.
Are there conditions in which adrenalectomy impedes the atrophying effects of denervation?
Physiologist 28(6, Suppl.): S69-S70, 1985. (GWU 6572)

Almon*, R.R.; DuBois, D.C.
Glucocorticoid sensitivity, disuse, and the regulation of muscle mass.
Physiologist 26(6, Suppl.): S92-S93, 1983. (GWU 5261)

Babij, P.; Booth*, F.W.
α-Actin and cytochrome c mRNAs in atrophied adult rat skeletal muscle.

Babij, P.; Booth*, F.W.
Biochemistry of exercise: Advances in molecular biology relevant to adaptation of muscle to exercise.

Babij, P.; Booth*, F.W.
Clenbuterol prevents or inhibits loss of specific mRNAs in atrophying rat skeletal muscle.

Babij, P.; Booth*, F.W.
Sculpturing new muscle phenotypes.
News in Physiological Sciences 3: 100-102, 1988. (GWU 10612)

Baldwin*, K.; Herrick, R.; Oganov, V.
Experiment K-6-10: Effects of zero gravity on myofibril protein content and isomyosin distribution in rodent skeletal muscle.

Effects of zero gravity on myofibril content and isomyosin distribution in rodent skeletal muscle.

Effect of limb immobilization on metabolic enzymes and fatigue properties of skeletal muscle (Abstract).

Relative independence of metabolic enzymes and neuromuscular activity.

Baldwin*, K.M.; Valdez, V.; Herrick, R.E.; MacIntosh, A.M.
Biochemical properties of functionally overloaded skeletal muscle (Abstract).
Baldwin*, K.M.; Valdez, V.; Herrick, R.E.; MacIntosh, A.M.; Roy, R.R.
Biochemical properties of overloaded fast-twitch skeletal muscle.

Effect of functional overload on substrate oxidation capacity of skeletal muscle.

Bangsbo, J.; Gollnick*, P.D.; Graham, T.E.; Juel, C.; Kiens, B.; Mizuno, M.; Saltin, B.
Anaerobic energy production and O2 deficit-debt relationship during exhaustive exercise in humans.
Journal of Physiology 422: 539-559, 1990. (GWU 13690)

Barnett, J.G.; Ellis*, S.
Prostaglandin E2 and the regulation of protein degradation in skeletal muscle.

Bello, M.A.; Roy, R.R.; Edgerton*, V.R.
Hindlimb suspension effects on the morphologic and metabolic properties of rat medial gastrocnemius (Abstract).

Bernard, P.A.; Rance, N.E.; Fishman, P.S.; Max*, S.R.
Increased cytosolic androgen receptor binding in rat striated muscle following denervation and disuse.

Berry, P.; Berry, I.; Arnaud*, S.B.; Moseley, M.E.
Spectroscopie par resonance magnetique (SRM) des muscles des membres dans le cadre d'un modele simulant lapesanteur chez l'homme (P-31 magnetic resonance spectroscopy (MRS) of calf and forearm muscles during repetitive exercises) (Abstract). (French)

Blankenhorn*, D.H.
Noninvasive methods for evaluation of atherosclerosis in man.
Metabolism 34(12, Suppl. 1): 78-81, 1985. (GWU 7700)

Block, J.E.; Steinbach, L.S.; Friedlander, A.L.; Steiger, P.; Ellis, W.; Morris, J.M.; Genant*, H.K.
Electrically-stimulated muscle hypertrophy in paraplegia: Assessment by quantitative CT.

Bodine-Fowler, S.; Garfinkel, A.; Roy, R.R.; Edgerton*, V.R.
An analysis of the spatial distribution of muscle fibers within the territory of a motor unit (Abstract).

Bodine-Fowler, S.; Garfinkel, A.; Roy, R.R.; Edgerton*, V.R.
Spatial distribution of muscle fibers within the territory of a motor unit.

Response of hindlimb muscles of the rhesus monkey to a 14-day space flight (Cosmos 2044) as determined by muscle biopsies (Abstract).
Physiologist 33(4): A76, 1990. (GWU 13284)
Booth*, F.W.
Effect of limb immobilization on skeletal muscle.

Booth*, F.W.
Enzymatic capacities of skeletal muscle: Effects of different types of training.

Booth*, F.W.
Physiologic and biochemical effects of immobilization on muscle.
*Clinical Orthopaedics and Related Research* 219: 15-20, 1987. (GWU 9530)

Booth*, F.W.; Babij, P.; Morrison, P.R.
Molecular events occurring during exercise which may alter gene expression in skeletal muscle.

Booth*, F.W.; Babij, P.; Muller, G.; Morrison, P.R.
Skeletal muscle gene expression in either suspended or immobilized rat hindlimbs (Abstract).

Booth*, F.W.; Babij, P.; Thomason, D.B.; Wong, T.S.; Morrison, P.R.
Adaptation of muscle gene expression to changes in contractile activity.
*Advances in Myochemistry* 1: 205-216, 1987. (GWU 12051)

Booth*, F.W.; Biggs, R.B.
Effect of age and triiodothyronine on myocardial protein synthesis rates in rats (Abstract).

Insulin resistance for protein synthesis does not occur in muscles of immobilized rat hindlimbs (Abstract).

Booth*, F.W.; Gollnick, P.D.
Effects of disuse on the structure and function of skeletal muscle.

Booth*, F.W.; Morrison, P.R.; Thomason, D.B.; Oganov, V.S.
Experiment K-6-11: Actin mRNA and cytochrome c mRNA concentrations in the triceps brachia muscle of rats.

Booth*, F.W.; Nicholson, W.F.; Watson, P.A.
Influence of muscle use on protein synthesis and degradation.

Booth*, F.W.; Seider, M.J.; Hugman, G.R.
Effects of disuse by limb immobilization on different muscle fiber types.
Booth*, F.W.; Tucker, K.R.; Nicholson, W.F.  
Effect of adrenalectomy on the immobilization-induced decrease in muscle protein synthesis rate (Abstract).  

Booth*, F.W.; Tucker, K.R.; Nicholson, W.F.  
Modified methodology to estimate muscle protein synthesis rate (Abstract).  

Booth*, F.W.; Watson, P.A.  
Control of adaptations in protein levels in response to exercise.  

Bouissou, P.; Roy, R.R.; Edgerton*, V.R.  
Hindlimb suspension effects on the size and enzymatic profile of rat tibialis anterior muscle fibers (Abstract).  

Buchanan*, P.  
An approach to preventing loss of muscle strength and mass in long duration space missions.  
In: *Aerospace Science* (Yojima, K., Ed.). Tokyo, Japan: Nihon University, p. 75-84, 1989. (GWU 13639)

Buchanan*, P.; Convertino*, V.; Dudley, G.; Flores, J.F.; Frey*, M.A.B.; Duvoisin, M.  
Electrical stimulation to leg muscles in ambulatory and leg casted subjects (Abstract).  

Buchanan*, P.; Convertino*, V.A.  
A study of the effects of prolonged simulated microgravity on the musculature of the lower extremities in man: An introduction.  
*Aviation, Space, and Environmental Medicine* 60(7): 649-652, 1989. (GWU 11269)

Buchanan*, P.; Flores, J.F.; Frey*, M.A.B.; Duvoisin, M.  
Electrical stimulation to leg muscles in ambulatory subjects (Abstract).  

Butler, D.T.; Booth*, F.W.  
Muscle atrophy by limb immobilization is not caused by insulin resistance.  

Altered calcium uptake and release from sarcoplasmic reticulum in muscular fatigue (Abstract).  
*Advances in Myochemistry* 2: 365, 1989. (GWU 14684)

Effects of exercise on the ATP binding site of the sarcoplasmic reticulum (SR) ATPase.  

Byrd, S.K.; McCutcheon, L.J.; Hodgson, D.R.; Gollnick*, P.D.  
Altered sarcoplasmic reticulum function after high-intensity exercise.  

Caiozzo, V.J.; Baldwin*, K.M.  
The influence of hyperthyroidism on maximal shortening velocity of slow and fast skeletal muscle (Abstract).  
Callister, R.; Callister, R.J.; Fleck, S.J.; Dudley*, G.A.
Blood chemistry responses to overtraining in elite judo athletes (Abstract).

Callister, R.; Callister, R.J.; Fleck, S.J.; Dudley*, G.A.
Physiological and performance responses to overtraining in elite judo athletes.

Callister, R.; Callister, R.J.; Staron, R.S.; Fleck, S.J.; Dudley*, G.A.
Physiological characteristics of elite judo athletes (Abstract).

Cann*, C.E.; Oganov, V.S.
Direct measurement of spinal muscle atrophy in long term spaceflight (Abstract).

Castleman*, K.R.; Chui, L.A.; Martin, T.P.; Edgerton*, V.R.
Quantitative muscle biopsy analysis.

Castleman*, K.R.; Chui, L.A.; Van Der Meulen, J.P.
Experiment K-308: Automatic analysis of muscle fibers from rats subjected to spaceflight.

Cavanaugh, D.J.; Cann*, C.E.
Training affects phosphorus metabolism of elite swimmer (Abstract).
*Medicine and Science in Sports and Exercise* 21(2, Suppl.): S72, 1989. (GWU 14657)

Cavanaugh, D.J.; Kurhanewicz, J.; Cann*, C.E.
Innate muscle differences between elite and recreational athletes (Abstract).

Chalmers, G.R.; Edgerton*, V.R.
Marked and variable inhibition by chemical fixation of cytochrome oxidase and succinate dehydrogenase in single motoneurons.

Chalmers, G.R.; Edgerton*, V.R.
Single motoneuron succinate dehydrogenase activity.

Chalmers, G.R.; Roy, R.R.; Edgerton*, V.R.
Coordination of succinate dehydrogenase activity between motoneurons and muscle fibers in the normal and functionally overloaded cat plantaris (Abstract).

Chalmers, G.R.; Roy, R.R.; Edgerton*, V.R.
Effect of quantity of action potentials on motoneuron oxidative capacity (Abstract).
*Society for Neuroscience Abstracts* 15: 919, 1989. (GWU 13663)

Chalmers, G.R.; Roy, R.R.; Edgerton*, V.R.
Normal succinate dehydrogenase activity in motoneurons six months after spinal isolation (Abstract).
Chui, L.A.; Castleman*, K.R.
Morphometric analysis of rat muscle fibers following space flight and hypogravity.
*Physiologist* 23(6, Suppl): S76-S78, 1980. (GWU 2309)

Chui, L.A.; Castleman*, K.R.; Van Der Meulen, J.P.
Morphometric analysis of rat muscle fibers following space flight.

Colliander, E.B.; Dudley, G.A.; Tesch, P.A. (Convertino, V.A. = P.I.)
Skeletal muscle fiber type composition and performance during repeated bouts of maximal, concentric contractions.

Convertino*, V.A.; Doerr, D.F.; Mathes, K.L.; Stein, S.L.; Buchanan*, P.
Changes in volume, muscle compartment, and compliance of the lower extremities in man following 30 days of exposure to simulated microgravity.
*Aviation, Space, and Environmental Medicine* 60(7): 653-658, 1989. (GWU 11268)

Cope, T.C.; Bodine, S.C.; Fournier, M.; Edgerton*, V.R.
Soleus motor units in chronic spinal transected cats: Physiological and morphological alterations.

Alterations in sarcoplasmic and mitochondrial enzymes during immobilization of fast and slow muscle (Abstract).

D'Amelio, F.; Daunton*, N.G.; Fast, T.; Grindeland*, R.
Preliminary findings in the neuromuscular junctions of the soleus muscle of adult rats subjected to simulated weightlessness. Light and electron microscopy (Abstract).

D'Aunno, D.S.; Thomason, D.B.; Booth*, F.W.
Centrifugal intensity and duration as countermeasures to soleus muscle atrophy.

Day, L.J.; 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. (GWU 1846)

de Guzman, C.P.; Roy, R.R.; Hodgson, J.A.; Edgerton*, V.R.
EMG amplitude relationships in hindlimb muscles of adult spinal cats during locomotion (Abstract).

de Leon, R.D.; Roy, R.R.; Hodgson, J.A.; Edgerton*, V.R.
EMG amplitude relationships between rectus femoris and vastus lateralis during treadmill locomotion in rats (Abstract).

Dekhuijzen, A.J.; Roy, R.R.; Edgerton*, V.R.
Spatial distribution of motor units: A general pattern? (Abstract)
DuBois, D.C.; Almon*, R.R.
Glucocorticoid sites in skeletal muscle: Adrenalectomy, maturation, fiber type, and sex.

DuBois, D.C.; Almon*, R.R.
Perineal muscles: Possible androgen regulation of glucocorticoid receptor sites in the rat.

DuBois, D.C.; Max*, S.R.
Effect of denervation and reinnervation on oxidation of [6-14C] glucose by rat skeletal muscle homogenates.

Dudley*, G.; Buchanan*, P.; Tesch, P.
Value of eccentric actions in loading muscle during resistance exercise (Abstract).

Dudley*, G.; Tesch, P.; Duvoisin, M.; Hather, B.; Harris, R.
Force and integrated electromyographic (IEMG) responses to "all-out" eccentric or concentric muscle actions (Abstract).

Dudley, G.A. (Convertino, V.A. = P.I.)
Metabolic consequences of resistive-type exercise.

Dudley*, G.A.; Duvoisin, M.R.; Convertino*, V.A.; Buchanan*, P.
Alterations of the in vivo torque-velocity relationship of human skeletal muscle following 30 days exposure to simulated microgravity.
*Aviation, Space, and Environmental Medicine* 60(7): 659-663, 1989. (GWU 11267)

Dudley*, G.A.; Duvoisin, M.R.; Tesch, P.A.
Force and EMG power spectrum in response to concentric and eccentric exercise.

Dudley*, G.A.; Gollnick*, P.D.; Convertino*, V.A.; Buchanan*, P.
Changes of muscle function and size with bedrest.
*Physiologist* 32(1, Suppl.): S65-S66, 1989. (GWU 13395)

Dudley, G.A.; Gollnick, P.D.; Convertino*, V.A.; Buchanan*, P.
Changes of muscle function and size with bedrest (Abstract).

Dudley*, G.A.; Harris, R.T.; Duvoisin, M.R.; Hather, B.M.; Buchanan*, P.
Effect of voluntary vs. artificial activation on the relationship of muscle torque to speed.

Characteristics and preliminary observations of the influence of electromyostimulation on the size and function of human skeletal muscle during 30 days of simulated microgravity.
*Aviation, Space, and Environmental Medicine* 60(7): 671-678, 1989. (GWU 11271)

Duvoisin, M.R.; Reed, H.E.; Doerr, D.F.; Dudley, G.A.; Buchanan*, P.
A newly developed EMS unit: Some preliminary results demonstrating its efficacy.

47
Edgerton*, R.
Exercise issues related to the neuromuscular function and adaptation to microgravity.

Edgerton*, R.
Muscle group.

Edgerton*, R.; Miu, B.; Martin, T.P.; Roy, R.; Marini, J.; Leger, J.J.; Oganov, V.; Ilyina-Kakueva, E.
Experiment K-6-07: Metabolic and morphologic properties of muscle fibers after spaceflight.

Edgerton*, V.R.; Roy, R.
Possible causes of muscle atrophy associated with spaceflight (Abstract).

Some factors that influence the neuromuscular response to spaceflight and simulation models of spaceflight (Abstract).

Eldred, E.; Ounjian, M.; Roy, R.R.; Edgerton*, V.R.
Geometric pattern of tapering in fast muscle fibers of cat tibialis anterior (Abstract).
*Society for Neuroscience Abstracts* 15: 521, 1989. (GWU 13665)

Ellis*, S.; Giometti, C.S.; Riley*, D.A.
Changes in muscle protein composition induced by disuse atrophy: Analysis by two-dimensional electrophoresis.
*Physiologist* 28(6, Suppl.): S159-S160, 1985. (GWU 6758)

Ellis*, S.; Goimetti, C.S.; Riley*, D.A.
Changes in muscle protein composition induced by disuse atrophy: Analysis by two-dimensional electrophoresis (Abstract).

Ellis*, S.; Lee, P.; Selzer*, R.
Muscle magnetic resonance imaging.

Ellis*, S.; Nagainis, P.A.
Activity of calcium activated protease in skeletal muscles and its changes in atrophy and stretch.
*Physiologist* 27(6, Suppl.): S73-S74, 1984. (GWU 6222)

Ellis*, S.; Riley*, D.A.; Bain, J.L.W.; Barnett, J.G.
Consideration of proteolytic mechanisms of myofilament deletion observed in rat soleus muscle after real and simulated microgravity (Abstract).
Etlinger*, J.D.; Gu, M.; Li, X.; Weitman, D.; Rieder, R.F.
Protease/inhibitor mechanisms involved in ATP-dependent proteolysis.
In: Current Trends in the Study of Intracellular Protein Degradation (Grisolia, S., Knecht, E., Eds.).

Fahlman, C.S.; Riley*, D.A.
Colchicine-induced sprouting of the neuromuscular junction in the pigeon extensor digitorum longus muscle.

Fell, R.D.; Gladden, L.B.; Steffen, J.M.; Musacchia*, X.J.
Fatigue and contraction of slow and fast muscles in hypokinetic/hypodynamic rats.

Fell, R.D.; Steffen, J.M.; Mook, K.A.; Musacchia*, X.J.
Effect of exercise on rat skeletal muscle exposed to disuse (Abstract).

Fell, R.D.; Steffen, J.M.; Musacchia*, X.J.
Effect of hypokinesia-hypodynamic on rat muscle oxidative capacity and glucose uptake.

Fell, R.D.; Steffen, J.M.; Musacchia*, X.J.
Whole body suspension in the rat: Muscle, fluid and cardiovascular effects (Abstract).

Feller*, D.D.; Ginoza*, H.S.; Morey*, E.R.
Atrophy of rat skeletal muscles in simulated weightlessness.
Physiologist 24(6, Suppl.): S9-S10, 1981. (GWU 2318)

Feller*, D.D.; Ginoza*, H.S.; Morey*, E.R.
Atrophy of rat skeletal muscles in simulated weightlessness (Abstract).
Pflügers Archiv 391(Suppl.): R60, 1981. (GWU 2480)

Proteolytic activity of atrophied and hypertrophied soleus muscle from rats (Abstract).

Fitts*, R.H.; Brimmer, C.J.
Recovery in skeletal muscle contractile function after prolonged hindlimb immobilization.

Fitts*, R.H.; Brimmer, C.J.; Heywood-Cooksey, A.; Timmerman, R.J.
Single muscle fiber enzyme shifts with hindlimb suspension and immobilization.

Fitts*, R.H.; Costill, D.L.; Gardetto, P.R.
Effect of swim exercise training on human muscle fiber function.

Fitts*, R.H.; Courtright, J.B.; Kim, D.H.; Witzmann, F.A.
Muscle fatigue with prolonged exercise: Contractile and biochemical alterations.
Fitts*, R.H.; Gardetto, P.R.; Heywood-Cooksey, A.; McDonald, K.S.; Schluter, J.M.
Single muscle fiber: Physiological and enzyme shifts with hindlimb suspension (Abstract).
*ASGSB Bulletin* 3(1): 72, 1989. (GWU 12077)

Functional changes in single muscle fibers with disuse atrophy (Abstract).

Fitts*, R.H.; Heywood-Cooksey, A.L.
Single fiber enzyme shifts with muscle atrophy (Abstract).

Fitts*, R.H.; Metzger, J.M.; Riley*, D.A.; Unsworth, B.R.
Models of disuse: A comparison of hindlimb suspension and immobilization.

Fitzsimons, D.P.; Bodell, P.W.; Baldwin*, K.M.
Myocardial functional correlates of cardiac myosin light chain 2 phosphorylation.

Fitzsimons, D.P.; Diffee, G.M.; Herrick, R.E.; Baldwin*, K.M.
Effects of endurance exercise on isomyosin patterns in fast- and slow-twitch skeletal muscles.

Flynn, D.E.; Max*, S.R.
Effects of suspension hypokinesia/hypodynamia on rat skeletal muscle.

Frey*, M.A.
Discussion with query and answer.

Fujii*, M.D.; Greenisen, M.; Schneider*, V.
Satellite manloads testing, Phase II. Grip strength and grasp breakaway testing (Abstract).

Fujii*, M.D.; Greenisen, M.C.; Siconolfi, S.; Harris, B.M.
Neuromuscular activity after seven days of bedrest (Abstract).

Physiological cross-sectional areas and volumes of the muscles in the human leg (Abstract).

Gardetto, P.R.; Schluter, J.M.; Fitts*, R.H.
Contractile function of single muscle fibers after hindlimb suspension.

Gardetto, P.R.; Schluter, J.M.; Fitts*, R.H.
Single muscle fiber function following hindlimb suspension (Abstract).

Spatial distribution of dark ATPase fibers in the adult cat soleus muscle six months after spinal transection
(abstract).
*Society for Neuroscience Abstracts* 15: 66, 1989. (GWU 13659)


Rodent body, organ, and muscle weight responses to seven days of microgravity (Abstract).

Grindeland*, R.E.; Fast, T.N.; Vasques, M.; Satyanaranyana, T.; Ruder, M.
Does altered growth hormone physiology play a role in muscle atrophy of simulated weightlessness?
(Abstract)

Harris, B.A., Jr.; Fujii, M.; Schneider*, V.
Exercise and the musculoskeletal system: Future considerations for extended space flight (Abstract).

Hatfaludy, S.; Shansky, J.; Vandenburgh*, H.H.
Glucose uptake and lactate efflux during stretch-relaxation activity of cultured skeletal myotubes (Abstract).

Hatfaludy, S.; Shansky, J.; Vandenburgh*, H.H.
Skeletal muscle cell growth and creatine kinase release during stretch/relaxation activity in tissue culture (Abstract).

Hather, B.; Dudley*, G.
Demonstration of muscle fiber types and capillarity on the same transverse section (Abstract).
Medicine and Science in Sports and Exercise 22(2, Suppl.): S71, 1990. (GWU 13243)

Hather, B.; Duvoisin, M.; Harris, R.; Buchanan*, P.; Dudley*, G.
Mechanics of voluntary and involuntary muscle actions (Abstract).
Medicine and Science in Sports and Exercise 21(2, Suppl.): S68, 1989. (GWU 13250)

Hauschka, E.; Roy, R.R.; Edgerton*, V.R.
Hindlimb suspension effects on the morphologic and metabolic properties of the rat soleus (Abstract).

Hauschka, E.O.; Roy, R.R.; Edgerton*, V.R.
Periodic weight support effects on rat soleus fibers after hindlimb suspension.

Hauschka, E.O.; Roy, R.R.; Edgerton*, V.R.
Size and metabolic properties of single muscle fibers in rat soleus after hindlimb suspension.

Hayes, J.C.; Roper, M.L.; Mazzocca, A.D.; Charles*, J.B.; Siconolfi, S.F.
Effects of simulated weightlessness on postural muscle performance (Abstract).

Herbert, M.E.; Roy, R.R.; Edgerton*, V.R.
Influence of one-week hindlimb suspension and intermittent high load exercise on rat muscles.

Herbert, M.E.; Roy, R.R.; Hodgson, J.A.; Edgerton*, V.R.
Influence of one week hindlimb suspension and intermittent high load exercise on rat muscles (Abstract).
Herbison, G.J.; Talbot*, J.M. (Eds.)  

Herbison, G.J.; Talbot*, J.M. (Eds.)  

Hikida, R.S.; Gollnick*, P.D.; Dudley*, G.A.; Convertino*, V.A.; Buchanan*, P.  
Structural and metabolic characteristics of human skeletal muscle following 30 days of simulated microgravity.  
*Aviation, Space, and Environmental Medicine* 60(7): 664-670, 1989. (GWU 11270)

Hoar, P.E.; Kerrick*, W.G.L.  
Differentiation of cat muscle fiber types: Use of skinned fibers (Abstract).  
*Biophysical Journal* 37: 128a, 1982. (GWU 2586)

Hodgson, J.A.; Balnave, R.; Roy, R.R.; Gregor, R.G.; Edgerton*, V.R.  
Potential mechanisms for enhancement of muscle force-velocity relationships during movement (Abstract).  
*Journal of Biomechanics* 22(10): 1024, 1989. (GWU 14646)

Hodgson, J.A.; Garfinkel, A.; Roy, R.R.; Gregor, R.G.; Edgerton*, V.R.  
A mathematical simulation of neural control in a motoneuron pool (Abstract).  
*Society for Neuroscience Abstracts* 15: 606, 1989. (GWU 13664)

Hodgson, J.A.; Lee, P.L.; Barker, P.  
Magnetic resonance imaging of rat hindlimb muscles (Abstract).  

Hoffmann, S.J.; Roy, R.R.; Blanco, C.E.; Edgerton*, V.R.  
Enzyme profiles of single muscle fibers never exposed to normal neuromuscular activity.  

Immunocytochemical and electrophoretic analyses of changes in myosin gene expression in cat limb fast and slow muscles during postnatal development.  

Three hierarchies in skeletal muscle fibre classification: Allotype, isotype and phenotype.  

Howard, G.; Steffen, J.M.; Geoghegan, T.E.  
(Musacchia, X.J. = P.I.)  
Evaluation of protein synthesis regulation in skeletal muscle atrophy (Abstract).  

Howard, G.; Steffen, J.M.; Geoghegan, T.E.  
(Musacchia, X.J. = P.I.)  
Transcriptional regulation of decreased protein synthesis during skeletal muscle unloading.  

Hsu, E.S.; Garfinkel, A.; Eldred, E.; Roy, R.R.; Edgerton*, V.R.  
Three dimensional analyses and imaging of all fibers belonging to a motor unit (Abstract).  
Electromyographic (EMG) amplitude patterns in the proximal and distal compartments of the cat semitendinosus during various motor tasks. 
*Brain Research* 479: 56-64, 1989. (GWU 14641) 

EMG amplitude relationships between the rat soleus and medial gastrocnemius during various motor tasks. 
*Brain Research* 502: 233-244, 1989. (GWU 14644) 

Hutton, R.S.; Roy, R.R.; Edgerton*, V.R. 
Co-contractions in antagonist hindlimb muscles during simulated step cycle rates. 
*Brain Research* 492: 230-236, 1989. (GWU 14643) 

Hutton, R.S.; Roy, R.R.; Edgerton*, V.R. 
Electrical activation of rat lateral gastrocnemius-soleus (LGS) and tibialis anterior (TA) muscles by simulating temporal patterns observed during treadmill locomotion: Does co-contraction influence step cycle frequency? (Abstract) 

Janeczko, R.A.; Carriere, R.M.; Etinger*, J.D. 
Endocytosis, proteolysis, and exocytosis of exogenous proteins by cultured myotubes. 

Janeczko, R.A.; Etinger*, J.D. 
Inhibition of intracellular proteolysis in muscle cultures by multiplication-stimulating activity: Comparison of effects of multiplication-stimulating activity and insulin on proteolysis, protein synthesis, amino acid uptake, and sugar transport. 

Janeczko, R.A.; Tomina, H.; Carriere, R.M.; Etinger*, J.D. 
Fate of exogenous proteins after internalization by endocytosis and microinjection in cultured myotubes. 
*Progress in Clinical and Biological Research* 180: 467-470, 1985. (GWU 7147) 

Jansson, E.; Dudley*, G.A.; Norman, B.; Tesch, P.A. 
Relationship of recovery from intense exercise to the oxidative potential of skeletal muscle. 

Muscle atrophy and histopathology of the soleus in 6-mercaptopurine-treated rats. 
*Experimental and Molecular Pathology* 43: 74-81, 1985. (GWU 5998) 

Effect of long term endurance and strengthening exercises on slow and fast muscles of the rat (Abstract). 
*Archives of Physical Medicine and Rehabilitation* 68(9): 662, 1987. (GWU 8123) 

Jaweed, M.M.; Herbison*, G.J.; Ditunno, J.F. 
Quantitative evaluation of wrist-extensor muscle strength in quadriplegic human subjects (Abstract). 

Influence of brief isometric training on isometric and isokinetic strength of the human quadriceps muscle (Abstract). 

Doppler evaluation of blood flow velocity in the spinal cord injured subjects (Abstract). 
*Archives of Physical Medicine and Rehabilitation* 68(9): 657, 1987. (GWU 8956)
Weight lifting-induced fascicular pathology in the rat soleus (Abstract).

Jiang, B.; Roy, R.R.; Edgerton*, V.R.
Enzymatic plasticity of medial gastrocnemius fibers in the adult chronic spinal cat.

Jiang, B.; Roy, R.R.; Edgerton*, V.R.
Enzymatic profile of single fibers of medial gastrocnemius muscle in adult spinal cat (Abstract).

Jiang, B.; Roy, R.R.; Edgerton*, V.R.
Expression of a fast fiber enzyme profile in the cat soleus after spinalization.

Jiang, B.; Roy, R.R.; Edgerton*, V.R.
Oxidative capacity and soma size of lumbar motoneurons after space flight and hindlimb suspension (Abstract).
*Physiologist* 33(4): A76, 1990. (GWU 13285)

Jiang, B.; Roy, R.R.; Pierotti, D.J.; Edgerton*, V.R.
Metabolic and size properties of soleus muscle fibers of adult spinalized cats (Abstract).

Kim, D.H.; Courtright, J.B.; Unsworth, B.R.; Witzmann, F.A.; Fitts*, R.H.
The effect of hindlimb immobilization on the sarcoplasmic reticulum of fast and slow skeletal muscle (Abstract).

Kim, D.H.; Fitts*, R.H.
Phosphoprotein formation in sarcoplasmic reticulum of fast and slow skeletal muscle: The effect of hindlimb immobilization (Abstract).
*Federation Proceedings* 41: 1595, 1982. (GWU 4034)

Kim, D.H.; Wible, G.S.; Witzmann, F.A.; Fitts*, R.H.
The effect of exercise-training on sarcoplasmic reticulum function in fast and slow skeletal muscle.

Kim, D.H.; Witzmann, F.A.; Fitts*, R.H.
A comparison of sarcoplasmic reticulum function in fast and slow skeletal muscle using crude homogenate and isolated vesicles.

Kim, D.H.; Witzmann, F.A.; Fitts*, R.H.
Effect of disuse on sarcoplasmic reticulum in fast and slow skeletal muscle.

Konagaya, M.; Bernard, P.A.; Max*, S.R.
Blockade of glucocorticoid receptor binding and inhibition of dexamethasone-induced muscle atrophy in the rat by RU38486, a potent glucocorticoid antagonist.

Konagaya, M.; Max*, S.R.
A possible role for endogenous glucocorticoids in orchietomy-induced atrophy of the rat levator ani muscle: Studies with RU 38486, a potent and selective antiglucocorticoid.
Krebs, J.M.; Schneider*, V.S.; LeBlanc*, A.; Evans, H.; Kuo, M.
Lean body mass and total body fat changes during five weeks of continuous bedrest (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 481, 1989. (GWU 14380)

Kuhn, F.E.; Max*, S.R.
Testosterone and muscle hypertrophy in female rats.

LeBlanc*, A.; Evans, H.; Schonfeld, E.; Ford, J.; Marsh, C.; Schneider*, V.; Johnson*, P.
Relaxation times of normal and atrophied muscle.

LeBlanc*, A.; Evans, H.; Schonfeld, E.; Ford, J.; Schneider*, V.; Jhingran, S.; Johnson*, P.
Changes in nuclear magnetic resonance (T2) relaxation of limb tissue with bed rest.

LeBlanc*, A.; Gogia, P.; Schneider*, V.; Krebs, J.; Schonfeld, E.; Evans, H.
Calf muscle area and strength changes after five weeks of horizontal bed rest.

Lee, P.L.; Kwong-Fu, H.H.; Frieden, H.J.; Selzer*, R.H.
3-D display of magnetic resonance images.

Lee, P.L.; Selzer*, R.H.; Ellis*, S.
Determination of leg muscle volume by magnetic resonance imaging (Abstract).

Li, X.; Gu, M.; Etlinger*, J.D.
Isolation and characterization of a 50 kd endogenous inhibitor of the proteasome from human erythrocytes (Abstract).

Differential effects of 10-Hz and 50 Hz-stimulation of the tibialis anterior on the ipsilateral, unstimulated soleus muscle.

Effects of functional electrical stimulation on opposing, unstimulated muscles (Abstract).

Differential response of the dog quadriceps muscle to external skeletal fixation of the knee.

Loughna, P.T.; Goldspink, D.F.; Goldspink*, G.
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat.

Loughna, P.T.; Goldspink, D.F.; Goldspink*, G.E.
Effects of hypokinesia and hypodynamia upon protein turnover in hindlimb muscles of the rat (Abstract).
In: *Abstracts of Papers, Physiologic Adaptation of Man in Space, 7th International Man in Space Symposium*, Houston, TX, February 10-13, 1986, 2 p. (GWU 7765)
Lovely, R.G.; Gregor, R.J.; Roy, R.R.; Edgerton*, V.R.
Effects of training on the recovery of full-weight-bearing stepping in the adult spinal cat. 

Lovely, R.G.; Gregor, R.J.; Roy, R.R.; Edgerton*, V.R.
Weight-bearing hindlimb stepping in treadmill-exercised adult spinal cats.
*Brain Research* 514(2): 206-218, 1990. (GWU 14046)

MacIntosh, A.M.; Baldwin*, K.M.; Herrick, R.E.
Biochemical and functional indices of contractile potential in the developing rat myocardium (Abstract).
*Physiologist* 25(4): 319, 1982. (GWU 3421)

MacIntosh, A.M.; Baldwin*, K.M.; Herrick, R.E.
Biochemical changes in neonatal rat muscle following repeated exercise (Abstract).

Marsh, C.L.; LeBlanc*, A.D.; Schneider*, V.; Johnson*, P.C.
Muscle atrophy with 14-90 days suspension of the rat (Abstract).

Martin, T.P.; Edgerton*, V.R.; Grindeland*, R.E.
The influence of space flight on the rat soleus (Abstract).

Max*, S.R.
Androgen-estrogen synergy in rat levator ani muscle: Glucose-6-phosphate dehydrogenase.
*Molecular and Cellular Endocrinology* 38: 103-107, 1984. (GWU 7184)

Max*, S.R.
Cytosolic androgen receptor in skeletal muscle from normal and testicular feminization mutant (Tfm) rats.
*Biochemical and Biophysical Research Communications* 101(3): 792-799, 1981. (GWU 2311)

Max*, S.R.; Hall-Craggs, E.C.B.; Chacon, M.
Fibre-type specificity and effect of thyroid hormone on glucose 6-phosphate dehydrogenase activity in normal and denervated skeletal muscles of the rat.

Max*, S.R.; Markelonis, G.J.
Neural control of muscle.

Max*, S.R.; Mayer, R.F.
Physiologic and biochemical aspects of skeletal muscle denervation and reinnervation.
Max*, S.R.; Mufti, S.; Carlson, B.M.
Androgen receptor in regenerating rat levator ani muscle (Abstract).
_Society for Neuroscience Abstracts_ 7: 554, 1981. (GWU 2351)

Max*, S.R.; Mufti, S.; Carlson, B.M.
Cytosolic androgen receptor in regenerating rat levator ani muscle.
_Biochemical Journal_ 200: 77-82, 1981. (GWU 2312)

Max*, S.R.; Rance, N.E.
No effect of sex steroids on compensatory muscle hypertrophy.

Max*, S.R.; Toop, J.
Androgens enhance 2-deoxyglucose uptake by the rat levator ani muscle in vivo (Abstract).

Max*, S.R.; Toop, J.
Androgens enhance _in vivo_ 2-deoxyglucose uptake by rat striated muscle.
_Endocrinology_ 113(1): 119-126, 1983. (GWU 5123)

Mayer, R.F.; Max*, S.R.
Denervation and reinnervation of skeletal muscle.

Mayer, R.F.; Max*, S.R.; Young, J.L.
Muscle reinnervation: Correlation of glucose 6-phosphate dehydrogenase activity and twitch tension.
_Neurology_ 31(2): 46, 1981. (GWU 3663)

McDonald, K.S.; Delp, M.D.; Fitts*, R.H.
Effect of hindlimb suspension on rat blood flow distribution (Abstract).

Mechanisms of hindlimb suspension induced changes in fiber Vmax and tension (Abstract).

Mednieks, M.I.; Grindeland*, R.E.; Kvetnansky, R.
Effect of catecholamines on cyclic AMP-receptor activity in heart tissue of restrained rats (Abstract).

Cyclic AMP-receptor protein attenuation in tissues of rats after spaceflight or chronic isoproterenol treatment (Abstract).

Electrical stimulation as an effective prophylaxis for DVT in SCI subjects (Abstract).
_Archives of Physical Medicine and Rehabilitation_ 68(9): 652-653, 1987. (GWU 8121)

Metabolic and morphologic properties of single muscle fibers in the rat after spaceflight, Cosmos 1887.
_FASEB Journal_ 4: 64-72, 1990. (GWU 10982)
Mondon, C.E.; Dolkas*, C.; Reaven, G.M.
Insulin sensitivity enhanced 7 days after exercise training—if overeating is avoided (Abstract).
*Federation Proceedings* 44: 1279, 1985. (GWU 8193)

Mondon, C.E.; Dolkas*, C.B.; Oyama*, J.
Enhanced skeletal muscle insulin sensitivity in year-old rats adapted to hypergravity.

Mondon, C.E.; Dolkas*, C.B.; Sims, C.; Reaven, G.M.
Spontaneous running activity in male rats: Effect of age.

Mondon, C.E.; Dolkas*, C.B.; Tobey, T.; Reaven, G.M.
Causes of the triglyceride-lowering effect of exercise training in rats.

Mondon, C.E.; Rodnick, K.; Dolkas*, C.; Reaven, G.
Muscle atrophy and decreased sensitivity to insulin during hindlimb suspension (Abstract).

Mondon, C.E.; Rodnick, K.J.; Dolkas*, C.B.; Reaven, G.M.; Azhar, S.
Decreased insulin sensitivity in suspended rats: Impaired insulin binding and kinase activity in receptors from soleus but not plantaris muscle (Abstract).

Mondon, C.E.; Sims, C.; Dolkas*, C.B.; Reaven, E.
Can insulin resistance of obese year-old rats be reduced by chronic exercise training? (Abstract)

Mondon, C.E.; Sims, C.; Dolkas*, C.B.; Reaven, E.P.; Reaven, G.M.
The effect of exercise training on insulin resistance in sedentary year old rats.

Mook, K.A.; Fell, R.D. (Musacchia, X.J. = P.I.)
Effect of electrical stimulations on atrophying rat skeletal muscle (Abstract).

Mook, K.A.; Fell, R.D. (Musacchia, X.J. = P.I.)
Effect of loaded isotonic contractions on muscle mass, strength, and fatigability in disuse atrophied rat skeletal muscle (Abstract).

Morris, G.S.; Fiore, P.V.; Hamlin, R.L.; Baldwin*, K.M.; Sherman, W.M.
The effects of cocaine and training on cardiac metabolism and isomyosin expression (Abstract).

Morrison, P.R.; Booth*, F.W.
c-myc expression in adult skeletal muscle regrowing from atrophy (Abstract).

Morrison, P.R.; Montgomery, J.A.; Wong, T.S.; Booth*, F.W.
Cytochrome c protein-synthesis rates and mRNA contents during atrophy and recovery in skeletal muscle.

Morrison, P.R.; Muller, G.W.; Booth*, F.W.
Actin synthesis rate and mRNA level increase during early recovery of atrophied muscle.
Degradation of proteins with blocked amino groups by cytoplasmic proteases.
*Biochemical and Biophysical Research Communications* 146(3): 1249-1255, 1987. (GWU 8969)

Musacchia*, X.J.
Endocrine regulation of carbohydrate metabolism in hypometabolic animals.

Biochemical and histochemical observations of vastus medialis from rats flown in Cosmos 1887 (Experiment K608).
*Physiologist* 32(1, Suppl.): S21-S22, 1989. (GWU 10828)

Biochemical and histochemical observations of vastus medialis from rats flown in Cosmos 1887 (Experiment K608) (Abstract).

A comparison of responses of muscle fibers and capillarity to weightlessness, (SL-3) flight and ground based controls (Abstract).
In: *Program and Abstracts, Second Annual Meeting of the American Society for Gravitational and Space Biology*, Charlottesville, VA, October 1-3, 1986, p. 34. (GWU 7960)

Disuse atrophy of skeletal muscle: Animal models.

Response of muscle fibers and capillarity to weightlessness (SL-3 flight) and ground controls (Abstract).

Physiological comparison of rat muscle in body suspension and weightlessness.
*Physiologist* 30(1, Suppl.): S102-S105, 1987. (GWU 10539)

Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension.
*Physiologist* 31(1, Suppl.): S28-S29, 1988. (GWU 9265)

Comparative morphometry of fibers and capillaries in soleus following weightlessness (SL-3) and suspension (Abstract).
Abstract of paper presented at the Ninth Annual Meeting IUPS Commission on Gravitational Physiology, Nitra, Czechoslovakia, September 28-October 1, 1987, 1 p. (GWU 10741)

Skeletal muscle response to spaceflight, whole body suspension, and recovery in rats.

Experiment K-6-08: Biochemical and histochemical observations of vastus medialis.
Nguyen, N.Y.; Baumann, G.; Arbogast, D.E.; Grindeland*, R.E.; 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. (GWU 2525)

Nguyen, N.Y.; Grindeland*, R.E.; Chrambach, A.
Isolation of human growth hormone B using selective steady-state stacking (Abstract).

Nicholson, W.F.; Ikoya, P.O.; Watson, P.A.; Booth*, F.W.
Insulin sensitivity of mouse skeletal muscle (Abstract).

Nicholson, W.F.; Seider, M.J.; Booth*, F.W.
Insulin resistance in soleus muscle of immobilized mouse limbs (Abstract).

Nicholson, W.F.; Watson, P.A.; Booth*, F.W.
Glucose uptake and glycogen synthesis in muscles from immobilized limbs.
Journal of Applied Physiology: Respiratory, Environmental and Exercise Physiology 56(2): 431-435,
1984. (GWU 5757)

Nicholson, W.F.; Watson, P.A.; Booth*, F.W.
Levels of blood-bourne factors and cytosol glucocorticoid receptors during the initiation of muscle atrophy
in rodent hindlimbs.

Pierotti, D.J.; Roy, R.R.; Flores, V.; Edgerton*, V.R.
Influence of 7 days of hindlimb suspension and intermittent weight support on rat muscle mechanical
properties.

Pierotti, D.J.; Roy, R.R.; Flores, V.; Edgerton*, V.R.
Influence of one week hindlimb suspension and intermittent low load on rat muscles (Abstract).

Pierotti, D.J.; Roy, R.R.; Gregor, R.J.; Edgerton*, V.R.
Electromyographic activity of cat hindlimb flexors and extensors during locomotion at varying speeds and
inclines.
Brain Research 481: 57-66, 1989. (GWU 14642)

Pierotti, D.J.; Roy, R.R.; Hodgson, J.A.; Bodine-Fowler, S.; Edgerton*, V.R.
Motor units of the cat tibialis anterior 6 months after spinal isolation (Abstract).

Pierotti, D.J.; Roy, R.R.; Hodgson, J.A.; Edgerton*, V.R.
Histochemical profiles of motor units of the cat tibialis anterior after 6 months of electrical inactivity
(Abstract).

Popiela, H.; Ellis*, S.
Neurotrophic factor: Characterization and partial purification.
Developmental Biology 83: 266-277, 1981. (GWU 1877)

Popiela, H.; Ellis*, S.; Festoff, B.W.
Dose-dependent initiation of myogenesis by neurotrophic factor.
Journal of Neuroscience Research 8: 547-567, 1982. (GWU 4372)
Popiela, H.; Taylor, D.; Ellis*, S.; Beach, R.; Festoff, B.
Regulation of mitotic activity and the cell cycle in primary chick muscle cells by neurotransferrin.

Rambaut*, P.C.; Nicogossian*, A.E.; Pool*, S.L.
Muscle and the physiology of locomotion.
*Physiologist* 26(6, Suppl.): S106-S107, 1983. (GWU 5221)

Rance, N.E.; Max*, S.R.
Modulation of the cytosolic androgen receptor in striated muscle by sex steroids.
*Endocrinology* 115(3): 862-866, 1984. (GWU 4258)

Riley*, D.A.
Effects of microgravity on rat muscle.

Riley*, D.A.; Bain, J.L.W.; Ellis*, S.; Haas, A.L.
Quantitation and immunocytochemical localization of ubiquitin conjugates within rat red and white skeletal muscles.

Riley*, D.A.; Ellis*, S.
Research on the adaptation of skeletal muscle to hypogravity: Past and future directions.
*Advances in Space Research* 3(9): 191-197, 1983. (GWU 5524)

Riley*, D.A.; Ellis*, S.; Bain, J.
Carbonic anhydrase activity in skeletal muscle fiber types, axons, spindles, and capillaries of rat soleus and extensor digitorum longus muscles.

Riley*, D.A.; Ellis*, S.; Bain, J.; Sedlak, F.; Slocum, G.; Oganov, V.
Experiment K-6-09: Morphological and biochemical investigation of microgravity-induced nerve and muscle breakdown.

Riley*, D.A.; Ellis*, S.; Bain, J.L.W.
Catalase-positive microperoxisomes in rat soleus and extensor digitorum longus muscle fiber types.

Riley*, D.A.; Ellis*, S.; Satyanarayana, T.; Wong-Riley, M.T.T.; Slocum, G.R.; Bain, J.L.W.; Meagher, P.J.; Sedlak, F.R.
Biochemical and ultrastructural adaptations of rat soleus muscles to suspension disuse (Abstract).
In: *Program and Abstracts, Second Annual Meeting of the American Society for Gravitational and Space Biology*, Charlottesville, VA, October 1-3, 1986, p. 34. (GWU 7959)

Riley*, D.A.; Ellis*, S.; Slocum, G.R.; Satyanarayana, T.; Bain, J.L.W.; Sedlak, F.R.
Hypogravity-induced atrophy of rat soleus and extensor digitorum longus muscles.

Riley*, D.A.; Ellis*, S.; Slocum, G.R.; Satyanarayana, T.; Bain, J.L.W.; Sedlak, F.R.
Morphological and biochemical changes in soleus and extensor digitorum longus muscles of rats orbited in Spacelab 3.
*Physiologist* 28(6, Suppl.): S207-S208, 1985. (GWU 6896)
Riley*, D.A.; Ellis*, S.; Slocum, G.R.; Sedlak, F.R. 
Segmental necrosis of muscle fibers in the soleus muscles of normal, immunized, and Spacelab-3 rats (Abstract). 

Riley*, D.A.; Fahlman, C.S. 
Colchicine-induced differential sprouting of the endplates on fast and slow muscle fibers in rat extensor digitorum longus, soleus and tibialis anterior muscles. 
*Brain Research* 329: 83-95, 1985. (GWU 7395) 

Riley*, D.A.; Ilyina-Kakueva, E.I.; Ellis*, S.; Bain, J.L.W.; Slocum, G.R.; Sedlak, F.R. 
Skeletal muscle fiber atrophy and necrosis, motor nerve degeneration, and disruption of microcirculatory vessels in hindlimb muscles of rats orbited in a Cosmos Biosatellite for 12.5 days (Abstract). 
*Anatomical Record* 223: 95A, 1989. (GWU 13549) 

Riley*, D.A.; Ilyina-Kakueva, E.I.; Ellis*, S.; Bain, J.L.W.; Slocum, G.R.; Sedlak, F.R. 
Skeletal muscle fiber, nerve, and blood vessel breakdown in space-flown rats. 

Riley*, D.A.; Slocum, G.R.; Bain, J.L.W.; Sowa, T.; Mellender, J. 
Rat hindlimb suspension: Soleus muscle histochemistry, electron microscopy and electromyography (Abstract). 

Riley*, D.A.; Slocum, G.R.; Bain, J.L.W.; Sowa, T.E.; Mellender, J.W. 
Rat hindlimb unloading: Soleus histochemistry, ultrastructure, and electromyography. 

Biochemical and physiological changes in overloaded rat fast- and slow-twitch ankle extensors. 

Morphologic, biochemical and physiological adaptations in functionally overloaded rat soleus and medial gastrocnemius muscles (Abstract). 
*Anatomical Record* 211(3): 165A, 1985. (GWU 12641) 

Roy, R.R.; Bello, M.A.; Bouissou, P.; Edgerton*, V.R. 
Size and metabolic properties of fibers in rat fast-twitch muscles after hindlimb suspension. 

Architectural and fiber type distribution considerations relative to repeated biopsies in rhesus monkey hindlimb muscles (Abstract). 
*Journal of Biomechanics* 22(10): 1076, 1989. (GWU 14647)
Roy, R.R.; Hauschka, E.O.; Edgerton*, V.R.
Fiber size and succinate dehydrogenase activity in the rat soleus following hindlimb suspension and periodic mechanical loading (Abstract).

EMG amplitude patterns in rat soleus muscle and medial gastrocnemius following seven days of hindlimb suspension.

Roy, R.R.; Jiang, B.; Marini, J.F.; Edgerton*, V.R.
Myosin ATPase activity of muscle fibers that express slow and fast myosin (Abstract).

Roy, R.R.; Marini, J.F.; Flores, V.; Edgerton*, V.R.
Mechanical and metabolic adaptations in rat fast muscle following seven days of functional overload (Abstract).

Functional significance of compensatory overloaded rat fast muscle.

Roy, R.R.; Pierotti, D.J.; Baldwin*, K.M.; Edgerton*, V.R.
Effects of cyclical passive stretch in maintaining cat soleus mechanical properties (Abstract).

Interrelationships of contraction time, \( V_{\text{max}} \) and myosin ATPase after spinal transection.

Roy, R.R.; Unguez, G.A.; Pierotti, D.J.; Bodine-Fowler, S.; Edgerton*, V.R.
Mechanical properties of self-reinnervated cat tibialis anterior motor units (Abstract).

Roy, R.R.; Wong, B.; Baldwin*, K.M.; Edgerton, V.R.
Fatigue properties of functionally overloaded rat muscle (Abstract).

Schaerf, F.W.; Patz, T.; Max*, S.R.
Estrogen modulates neural control of muscle glucose 6-phosphate dehydrogenase.

Searle, G.L.; Gerend, P.L.; Feller*, D.D.
Gluconeogenesis from alanine in the fed dexamethasone treated rat (Abstract).

Seider, M.J.; Kapp, R.; Chen, C.-P.; Booth*, F.W.
The effects of cutting or of stretching skeletal muscle in vitro on the rates of protein synthesis and degradation.
Seider, M.J.; Nicholson, W.F.; Booth*, F.W.
Insulin resistance for glucose metabolism in disused soleus muscle of mice.

Shellock, F.; Fukanaga, T.; Mink, J.; Edgerton*, V.R.
Acute effects of resistance exercise on MRI of skeletal muscle: Concentric vs. eccentric contractions (Abstract).

Silver, B.B.; Arnaud*, S.B.; Harris, B.A.; Vernikos-Danellis*, J.
Effects of simulated microgravity on intracellular ion concentrations in sublingual cells and skeletal muscle (Abstract).
*Aviation, Space, and Environmental Medicine* 60(5): 482, 1989. (GWU 14331)

Silver, G.; Etlinger*, I.D.
Regulation of myofibrillar accumulation in chick muscle cultures: Evidence for the involvement of calcium and lysosomes in non-uniform turnover of contractile proteins.

Staron, R.S.; Malicky, E.S.; Falkel, J.E.; Hagerman, F.C.; Dudley*, G.A.
Effects of heavy resistance weight training on muscle fiber size and composition in females (Abstract).

Staron, R.S.; Malicky, E.S.; Leonard, M.J.; Falkel, J.E.; Hagerman, F.C.; Dudley*, G.A.
Muscle hypertrophy and fast fiber type conversions in heavy-resistance-trained women.

Steffen, J.M. (Musacchia, X.J. = P.I.)
Blood glucose, serum insulin and tissue glycogen concentrations in the hypothermic rat (Abstract).

Steffen, J.M. (Musacchia, X.J. = P.I.)
Glucose, glycogen, and insulin responses in the hypothermic rat.

Steffen, J.M.; Fell, R.D.; Musacchia*, X.J.
Altered carbohydrate metabolism in the whole body suspended rat (Abstract).

Steffen, J.M.; Fell, R.D.; Musacchia*, X.J.
Muscle atrophy in suspended adult rats: Comparison with juveniles and spaceflight (Abstract).

Steffen, J.M.; Fell, R.D.; Musacchia*, X.J.
Physiological responses during whole body suspension of adult rats.
*Physiologist* 30(1, Suppl.): S94-S95, 1987. (GWU 8617)

Steffen, J.M.; Musacchia*, X.J.
Disuse atrophy, plasma corticosterone, and muscle glucocorticoid receptor levels.

Steffen, J.M.; Musacchia*, X.J.
Effect of seven days of spaceflight on hindlimb muscle protein, RNA and DNA in adult rats.
*Physiologist* 28(6, Suppl.): S221-S222, 1985. (GWU 6890)

Steffen, J.M.; Musacchia*, X.J.
Effect of seven days of spaceflight on hindlimb muscle protein, RNA and DNA in adult rats (Abstract).
Steffen, J.M.; Musacchia*, X.J.
Glucocorticoids and hypothermic induction and survival in the rat.

Steffen, J.M.; Musacchia*, X.J.
Spaceflight effects on adult rat muscle protein, nucleic acids, and amino acids.

Steffen, J.M.; Musacchia*, X.J.
Thymic involution in the suspended rat: Adrenal hypertrophy and glucocorticoid receptor content.
*Aviation, Space, and Environmental Medicine 57(2): 162-167, 1986. (GWU 8050)

α-Actin mRNA levels in soleus muscles from adult and juvenile suspended rats (Abstract).
*ASGSB Bulletin 2: 17, 1989. (GWU 10756)

Steffen, J.M.; Robb, R.; Dombrowski, M.J.; Musacchia*, X.J.; Mandel*, A.D.; Sonnenfeld*, G.
A suspension model for hypokinetic/hypodynamic and antithostatic responses in the mouse.

Steffen, J.M.; Steffen, M.C.; Geoghegan, T.E.; Musacchia*, X.J.; Milsom, W.K.; Burlington, R.F.
Observations of skeletal muscle from a hibernator, Spermophilus lateralis (Abstract).
*Physiologist 31: A42, 1988. (GWU 10743)

Steiger, P.; Block, J.E.; Friedlander, A.; Genant*, H.K.
Precise determination of paraspinous musculature by quantitative CT.

Stump, C.S.; Tipton*, C.M.
Influence of single-hindlimb weight bearing on muscle mass and citrate synthase activity during simulated weightlessness (Abstract).

Stump, C.S.; Woodman, C.R.; Tipton*, C.M.
Exercise induced glycogen depletion in select rat hindlimb muscles after two weeks of hindlimb suspension (Abstract).

Tesch, P.A.; Buchanan*, P.; Dudley*, G.A.
An approach to counteracting long-term microgravity-induced muscle atrophy.
*Physiologist 33(1, Suppl.): S77-S79, 1990. (GWU 11702)

Force and EMG signal patterns during repeated bouts of concentric or eccentric muscle actions.

Thomason, D.B.; Baldwin*, K.M.; Herrick, R.E.
Myosin isozyme distribution in rodent hindlimb skeletal muscle.

Thomason, D.B.; Biggs, R.B.; Booth*, F.W.
Protein metabolism and β-myosin heavy-chain mRNA in unweighted soleus muscle.

Thomason, D.B.; Biggs, R.B.; Booth*, F.W.
Rapid protein synthesis decrease and transient protein degradation increase in atrophying soleus muscle (Abstract).
Thomason, D.B.; Booth*, F.W.
Atrophy of the soleus muscle by hindlimb unweighting.

Thomason, D.B.; Booth*, F.W.

Thomason, D.B.; Booth*, F.W.
Advances in Myochemistry 2: 79-82, 1989. (GWU 11762)

Thomason, D.B.; Booth*, F.W.
Rapid decrease in nascent protein elongation during skeletal muscle unweighting (Abstract).

Thomason, D.B.; Booth*, F.W.
Soleus muscle slow myosin heavy chain mRNA expression during hindlimb unweighting: Implications for translational control mechanisms (Abstract).

Thomason, D.B.; Booth*, F.W.
Stable incorporation of a bacterial gene into adult rat skeletal muscle in vivo.

Thomason, D.B.; Herrick, R.E.; Baldwin*, K.M.
Activity induced recovery of slow myosin expression following rodent hindlimb suspension (Abstract).
Medicine and Science in Sports and Exercise 18(2, Suppl.): S5, 1986. (GWU 12647)

Thomason, D.B.; Herrick, R.E.; Baldwin*, K.M.
Activity influences on soleus muscle myosin during rodent hindlimb suspension.

Thomason, D.B.; Herrick, R.E.; Baldwin*, K.M.
Influence of activity patterns on muscle mass and myosin isozymes in rodent skeletal muscle (Abstract).

Thomason, D.B.; Herrick, R.E.; Baldwin*, K.M.
Myosin isozyme patterns in normal and overloaded skeletal muscles (Abstract).
Medicine and Science in Sports and Exercise 16(2): 120, 1984. (GWU 12649)

Thomason, D.B.; Herrick, R.E.; Surdyka, D.; Baldwin*, K.M.
Time course of soleus muscle myosin expression during hindlimb suspension and recovery.

Thomason, D.B.; Herrick, R.E.; Surdyka, D.; Baldwin*, K.M.
Time course of soleus muscle myosin expression during hindlimb suspension and recovery (Abstract).

Thomason, D.B.; Tsika, R.W.; Baldwin*, K.M.
Differential control of the expression of slow and fast myosin isoenzymes in adult rodent skeletal muscle (Abstract).
Journal of Cellular Biochemistry Suppl. 9B: 54, 1985. (GWU 13392)
Thornton*, W.
Work, exercise and space flight. I. Operations, environment, and effects of spaceflight.

Thornton*, W.
Work, exercise and space flight. II. Modification of adaptation by exercise (exercise prescription).

Thornton*, W.
Work, exercise and space flight. III. Exercise devices and protocols.

Toop, J.; Max*, S.R.
Testosterone enhances [14C] 2-deoxyglucose uptake by rat levator ani muscles in vivo (Abstract).
Society for Neuroscience Abstracts 7: 554, 1981. (GWU 2352)

Toyoshima, E.; Mayer, R.F.; Max*, S.R.; Eccles, C.
2,4-Dichlorophenoxyacetic acid (2,4-D) does not cause polynephropathy in the rat.

Troup, J.P.; Fitts*, R.H.
Membrane properties of skeletal muscle fiber types following hindlimb immobilization (Abstract).
Federation Proceedings 41: 1595, 1982. (GWU 4064)

Troup, J.P.; Witzmann, F.A.; Fitts*, R.H.
The effect of hindlimb immobilization on skeletal muscle acid hydrolase activity (Abstract).

Tseng, B.S.; Kasper, C.E.; Edgerton*, V.R.
Nuclear density in isolated single rat skeletal muscle fibers with respect to fiber type (Abstract).

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
Effect of anabolic steroids and hindlimb suspension on functionally overloaded skeletal muscle (Abstract).

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
The effect of anabolic steroids on overloaded and overloaded suspended skeletal muscle.

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
The effect of anabolic steroids on skeletal muscle mass during hindlimb suspension.

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
Interaction of compensatory overload and hindlimb suspension on myosin isoform expression.

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
Subunit composition of rodent isomyosins and their distribution in hindlimb skeletal muscles.

Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
Time course adaptations in rat skeletal muscle isomyosins during compensatory growth and regression.
Tsika, R.W.; Herrick, R.E.; Baldwin*, K.M.
Time course adaptations in rodent skeletal muscle myosin isoforms in response to compensatory overload (Abstract).

Tucker, K.R.; Seider, M.J.; Booth*, F.W.
Protein synthesis rates in atrophied gastrocnemius muscles after limb immobilization.

Tufariello, J.; DuBois, D.C.; Almon*, R.R.
Muscle and thymus cell-free glucocorticoid receptor systems are different.

Unguez, G.A.; Bodine-Fowler, S.; Pierotti, D.J.; Roy, R.R.; Edgerton*, V.R.
Metabolic variability of muscle fibers in self-reinnervated motor units in the cat tibialis anterior muscle (Abstract).

Unguez, G.A.; Bodine-Fowler, S.; Roy, R.R.; Pierotti, D.J.; Edgerton*, V.R.
Spatial distribution of motor unit fibers in the self-reinnervated tibialis anterior muscle of adult cats (Abstract).
*Society for Neuroscience Abstracts* 15: 66, 1989. (GWU 13660)

Unsworth, B.R.; Witzmann, F.A.; Fiuts*, R.H.
A comparison of rat myosin from fast and slow skeletal muscle and the effect of disuse.

Experiment K-6-02: Biomedical, biochemical and morphological alterations of muscle and dense, fibrous connective tissues during 14 days of spaceflight.

van der Westhuyzen, D.R.; Matsumoto, K.; Etlinger*, J.D.
Easily releasable myofilaments from skeletal and cardiac muscles maintained in vitro.
*Journal of Biological Chemistry* 256(22): 11791-11797, 1981. (GWU 8739)

Vandenburgh*, H.H.
A computerized model system for studying the effects of mechanical activity on cell growth in vitro (Abstract).

Vandenburgh*, H.H.
Simulating exercise in a tissue culture model system: Studies on how tension alters skeletal muscle growth (Abstract).

Skeletal muscle growth is stimulated by intermittent stretch-relaxation in tissue culture.

Vandenburgh*, H.H.; Hatfaludy, S.; Shansky, J.
Protein degradation and prostaglandin E2 efflux in stretch-induced skeletal muscle growth in vitro (Abstract).
Vandenburgh*, H.H.; Karlisch, P.
Longitudinal growth of muscle fibers in vitro induced by mechanical activity (Abstract).

Vandenburgh*, H.H.; Karlisch, P.; Farr, L.
Maintenance of highly contractile tissue-cultured avian skeletal myotubes in collagen gel (Abstract).

Vandenburgh*, H.H.; Karlisch, P.; Farr, L.
Maintenance of highly contractile tissue-cultured avian skeletal myotubes in collagen gel.

Warrenski, J.; Almon*, R.R.
Effect of castration on the metabolism of androgens in rat skeletal muscle.
*Analytical Biochemistry* 15(9): 1149-1153, 1983. (GWU 9540)

Watson, P.A.; Stein, J.P.; Booth*, F.W.
Changes in actin synthesis and α-actin-mRNA content in rat muscle during immobilization.

Weitman, D.; Etlinger*, J.D.
Comparison of active and latent proteasome from human erythrocytes (Abstract).

West, S.P.; Roy, R.R.; Edgerton*, V.R.
Fiber type and fiber size of cat ankle, knee, and hip extensors and flexors following low thoracic spinal cord transection at an early age.
*Experimental Neurology* 91: 174-182, 1986. (GWU 12044)

Whalen*, R.
Influence of loading history on muscle fiber cross-sectional area.

Winder, W.; Fitts*, R.; Holloszy, J.; Kaiser, K.; Brooke, M.
Effects of thyroid hormones on different types of skeletal muscle.

Winiarski, A.M.; Roy, R.R.; Alford, E.K.; Chiang, P.; Edgerton*, V.R.
Hindlimb suspension effects on mechanical properties of rat skeletal muscle (Abstract).

Winiarski, A.M.; Roy, R.R.; Alford, E.K.; Chiang, P.C.; Edgerton*, V.R.
Mechanical properties of rat skeletal muscle after hind limb suspension.

Witzmann, F.A.; Kim, D.H.; Fitts*, R.H.
The effect of hindlimb immobilization on the contractile properties of fast and slow skeletal muscle (Abstract).

Witzmann, F.A.; Kim, D.H.; Fitts*, R.H.
Effect of hindlimb immobilization on the fatigueability of skeletal muscle.
Witzmann, F.A.; Kim, D.H.; Fitts*, R.H.
Hindlimb immobilization: Length-tension and contractile properties of skeletal muscle.

Witzmann, F.A.; Kim, D.H.; Fitts*, R.H.
Recovery of fast and slow skeletal muscle from disuse (Abstract).

Witzmann, F.A.; Kim, D.H.; Fitts*, R.H.
Recovery time course in contractile function of fast and slow skeletal muscle after hindlimb immobilization.

Witzmann, F.A.; Troup, J.P.; Fitts*, R.H.
Acid phosphatase and protease activities in immobilized rat skeletal muscles.

Wong, T.S.; Booth*, F.W.
Increased protein synthesis rates and mRNA levels in resistance trained rat skeletal muscle (Abstract).
FASEB Journal 3(4): A698, 1989. (GWU 9873)

Wong, T.S.; Booth*, F.W.
Protein metabolism in rat tibialis anterior muscle after stimulated chronic eccentric exercise.

Wong, T.S.; Booth*, F.W.
Skeletal muscle enlargement with weight-lifting exercise by rats.

Yeagle, S.P.; Mayer, R.F.; Max*, S.R.
Contractile properties of rat fast-twitch skeletal muscle during reinnervation: Effects of testosterone and castration.
Experimental Neurology 82: 344-357, 1983. (GWU 5569)

Yip, R.K.; Riley*, D.A.
Effects of methylmercury on the motor and sensory innervation of the rat extensor digitorum longus muscle.

Zeman, R.J.; Barakat, R.; Bernstein, P.L.; Ludemann, R.; Etlinger*, J.D.
Calcium regulation of lysosomal proteolysis in skeletal muscle.

Zeman, R.J.; Bernstein, P.L.; Etlinger*, J.D.
Regulation of atrophy and twitch kinetics in rat soleus muscles in organ culture (Abstract).

Zeman, R.J.; Bernstein, P.L.; Ludemann, R.; Etlinger*, J.D.
Regulation of Ca2+-dependent protein turnover in skeletal muscle by thyroxine.
Biochemical Journal 240: 269-272, 1986. (GWU 7464)

Zeman, R.J.; Kameyama, T.; Matsumoto, K.; Bernstein, P.; Etlinger*, J.D.
Regulation of protein degradation in muscle by calcium: Evidence for enhanced nonlysosomal proteolysis associated with elevated cytosolic calcium.
Zeman, R.J.; Ludemann, R.; Easton, T.G.; Etlinger*, J.D.
Slow to fast alterations in skeletal muscle fibers caused by clenbuterol, a β₂-receptor agonist.

Zeman, R.J.; Ludemann, R.; Etlinger*, J.D.
Clenbuterol, a β₂-agonist, retards atrophy in denervated muscles.

Zeman, R.J.; Ludemann, R.; Silver, G.; Etlinger*, J.D.
Clenbuterol, a β₂-receptor agonist, retards denervation atrophy of slow skeletal muscle (Abstract).

Zeman, R.J.; Ludemann, R.; Silver, G.; Etlinger*, J.D.
Slow to fast alterations in skeletal muscle caused by clenbuterol, a β₂-receptor agonist (Abstract).
GENERAL MUSCULOSKELETAL
Altchuler*, S.I.
Musculoskeletal changes during extended duration spaceflight (Abstract).

Buchanan*, P.
Bone and muscle: The structural system in long duration space missions.

LeBlanc*, A.
Bone and muscle loss during space flight.
Abstract of a paper presented at the 35th Annual Meeting of the Southwest Chapter Society of Nuclear Medicine, Houston, TX, April 6-8, 1990.

LeBlanc*, A.; Marsh, C.; Evans, H.; Johnson*, P.; Schneider*, V.; Jhingran, S.
Bone and muscle atrophy with suspension of the rat.

Malluche, H.H.; Okamoto, S.; DeLuca*, H.F.; Faugere, M.C.
Bone loss of estrogen deficiency results from osteoblastic dysfunction: A defect reversed by 1,25(OH)2 vitamin D3 (Abstract).

Mohler*, S.R.
Bone and muscle maintenance in long-term space flight, with commentary on the aging process.

Parazynski, S.E.; Schwandt, D.F.; Whalen, R.T.; Aratow, M.; Hargens*, A.R.
Development of an exercise device to prevent musculoskeletal deconditioning during human spaceflight (Abstract).

Rambaut*, P.C.
The effects of prolonged bedrest on bone and muscle.

Schneider*, V.; LeBlanc*, A.; Cintron*, N.
Long duration space missions, the lunar base and beyond: Musculoskeletal systems (Abstract).

Schneider*, V.S.; LeBlanc*, A.
Opportunities for biological research on Space Station: The musculoskeletal systems (Abstract).

Mechanical, morphological and biochemical adaptations of bone and muscle to hindlimb suspension and exercise.

Whalen*, R.
Responses of muscle and bone to load histories.
Whalen*, R.T.; Carter, D.R.; Steele, C.R.
Analysis of U.S. and Soviet efforts to maintain muscle and bone mass with exercise during prolonged bedrest and spaceflight.

Wilmore*, J.H.
Bone and muscle.

Woodard, D.; Dudley*, G.A.; Buchanan*, P.
Maximal resistance exercise increases bone density and muscle cross-sectional area (Abstract).
GENERAL PHYSIOLOGY REFERENCES
Ahn, C.-H. 

Exercise countermeasures for bed rest deconditioning (Abstract). 

Bagian*, J.P.; Kaufman, J.W. 
Effectiveness of the Space Shuttle anti-exposure system in a cold water environment. 

Bagian*, J.P.; Nagel, S.R. 
Shuttle emergency egress development program (Abstract). 

Bagian*, J.P.; Schafer, L.E.; Probe, J.D.; Greenisen*, M.C.; Krutz, R.W., Jr. 
Reach performance while wearing the Space Shuttle Launch and Entry Suit during exposure to launch accelerations. 

Beers, K.N.; Mohler*, S.R. 
Lyme Disease and aircrew health (Abstract). 

BioTechnology, Inc. 

Bolcik, C.; Pleasant, L.G. (Waters, E. = P.I.) 

Bowman*, G.H. 

Buderer*, M.C.; Salinas*, G.A. 
Life sciences experiments on Spacelab 1. 

Bungo*, M.W. 
Comments. 

Bungo*, M.W. 
Inflight medical observations. 

Bungo*, M.W. 
Inflight observations. 
Bungo*, M.W.; Bagian*, T.M.; Bowman, M.A.; Levitan, B.M.

Bungo*, M.W.; Charles, J.B.
Maintaining health through conditioning and countermeasures.

Callahan*, P.X.; Grindeland*, R.; Funk, G.; Lencki, W.
Results from the SL-3 Ames Research Center Life Sciences Payload: A spaceflight of 24 rats and 2 monkeys (Abstract).

Callahan*, P.X.; Schatte, C.; Grindeland*, R.E.; Bowman, G.; Berry, W.E.; Lencki, W.A.; Funk, G.A.
Ames Research Center Life Sciences Payload: Overview of results of spaceflight of 24 rats and 2 monkeys (Abstract).
In: Abstracts, Twenty-Sixth Plenary Meeting of the Committee on Space Research, Toulouse, France, June 30-July 11, 1986, p. 302. (GWU 7836)

Callahan*, P.X.; Tremor, J.; Lund, G.; Wagner, W.L.
Ames Research Center Life Sciences Payload Project for Spacelab Mission 3.

Callahan*, P.X.; Tremor, J.W.
Research Animal Holding Facility: Verification Test (RAHF-VT).

Clifton, K.S. (Ed.)

Cohen*, M.M.
Artificial gravity for long duration spaceflight.

Cohen*, M.M.
Physiological and behavioral adaptations to microgravity: A major role for Space Station Freedom.

Connolly, J.P.; Grindeland*, R.E.; Ballard, R.W. (Eds.)

Convertino*, V.A.
Physiological adaptations to weightlessness: Effects on exercise and work performance.

Cramer*, D.B.
Looking ahead: The Shuttle and life sciences (Abstract).
Cramer*, D.R.; Reid, D.H.; Klein*, H.P.
The first dedicated life sciences mission: Spacelab 4.
*Advances in Space Research* 3(9): 143-151, 1983. (GWU 5555)

Danellis*, J.
Comments.
In: *Workshop on Exercise Prescription for Long-Duration Space Flight* (Harris, B.A., Jr., Stewart, D.F., Eds.).

Davis, J.R.; Nicogossian*, A.E.
Biomedical training of space crews.

Degioanni*, J.C.; Logan*, J.S.; Reynolds, M.A.
Medical care.

Dietlein*, L.F.
U.S. manned spaceflight: The first twenty years (Abstract).

Dietlein*, L.F.; Johnston, R.S.
U.S. manned space flight: The first twenty years. A biomedical status report.

Dietlein*, L.F.; Rambaut*, P.C.; Nicogossian*, A.
Future thrusts in life sciences experimentation in space. (Russian)

Dietlein*, L.F.; Rambaut*, P.C.; Nicogossian*, A.E.
Future thrusts in life sciences experimentation in space.
*Aviation, Space, and Environmental Medicine* 54(12): S6-S8, 1983. (GWU 5180)

Dudley*, G.A.; Tesch, P.A.
Living in space: A struggle against microgravity.
*Saab-Scania Griffin* 4: 46-52, 1990. (GWU 14156)

Fabricant*, J.D.
Life sciences experiments for a space platform/station.

Rat maintenance in the Research Animal Holding Facility during the flight of Space Lab 3.
*Physiologist* 28(6, Suppl.): S187-S188, 1985. (GWU 6605)

Rat maintenance in the Research Animal Holding Facility during the flight of Spacelab 3 (Abstract).
Feddersen, W.E.
NASA Principal Investigators interfaces flight opportunities/advanced missions (Abstract).

Feller*, D.D.
Effects of hypergravity on rat liver regeneration.

Furukawa*, S.

Goebel*, L.A.
General Purpose Work Station for life sciences Spacelab (Abstract).

Greenleaf*, J. (Ed.)

Greenleaf*, J.E.
Physiology of prolonged bed rest.

Greenleaf*, J.E.

Greenleaf*, J.E.; Bulbulian, R.; Bernauer, E.M.; Haskell, W.L.; Moore, T.
Exercise-training protocols for astronauts in microgravity.

Greenleaf*, J.E.; Silverstein, L.; Bliss, J.; Langenheim, V.; Rossow, H.; Chao, C.

Grindeland*, R.E.
Cosmos 1887: Science overview.

Grindeland*, R.E.; Lundgren, P.R.; Vasques, M.; Fast, T.N.; Buckendahl, P.; Callahan*, P.X.
Body composition of rats of two sizes after 7 days exposure to microgravity (Abstract).

Guy*, H.J.
Bioengineering in space flight (Abstract).
Annals of Biomedical Engineering 10: 31, 1983. (GWU 8419)

Hargens*, A.R.; Vernikos-Danelli*, J.
Life Science research at NASA-Ames Research Center (Abstract).
Abstract of paper presented at TABES 89, 5th Annual Technical and Business Exhibition and Symposium, Huntsville, AL, May 16-17, 1989, 1 p. (GWU 7734)
An expert system to advise astronauts during experiments: The Protocol Manager module.

Johnson*, P.C., Jr.
Space medicine.

Johnson*, R.D.
Life sciences experiments on the space shuttle.

Kaufman, J.W.; Bagian*, J.P.
Insidious hypothermia during raft use.

Kirby*, R.R.
Life Sciences Laboratory Equipment (LSLE) (Abstract).

Leach*, C.S.
Space life sciences: An historical perspective (Abstract).
Abstract of a paper presented at the American Association for the Advancement of Science Annual Meeting, New Orleans, LA, February 15-20, 1990, 1 p. (GWU 13808)

Medical considerations for extending human presence in space.

Leach*, C.S.; Pool*, S.L.; Sawin, C.F.; Nicogossian*, A.E.
Extended Duration Orbiter Medical Project.

Leach*, C.S.; Schneider, H.J.
Spacelab Life Sciences 1 and 2 scientific research objectives.
*Physiologist*  30(1, Suppl.): S6-S9, 1987. (GWU 8619)

Leonard*, J.I.
Mathematical models for testing space-flight hypotheses (Abstract).

Leonard*, J.I.; White*, R.J.; Rummel, J.A.
An integrative approach to space-flight physiology using systems analysis and mathematical simulation.

Li, C.-M.; Mohler*, S.
Postural effects of +Gz impact on the spinal column (Abstract).
*Aviation, Space, and Environmental Medicine*  60(5): 488, 1989. (GWU 14386)

Logan*, J.S.; Shulman, E.L.; Johnson*, P.C.
Health care delivery system for long duration manned space operations.
Lund*, G.F.
Subcutaneous electrode structure (Patent).
U.S. Patent No. 4,219,027. August 26, 1980. (GWU 5734)

Luu, P.B.; Ortiz, V.; Barnes, P.R.; Greenleaf*, J.E.

Mains, R.C.; Gomersall, E.W.

Mallory*, K.; Price, L.; Mahla, G.; Kirkpatrick, M.
Development of Life Sciences Long Duration Mission Requirements and Concept (NASW-3246).

Martello, N.V. (Cohen, M.M., Souza, K.A. = P.I.)

Mason, J.A.; Johnson*, P.C., Jr.
Panel for space station medical sciences concepts (Abstract).

Mason, J.A.; Johnson*, P.C., Jr. (Eds.)
Space Station Medical Sciences Concepts.
Houston, TX: NASA, Johnson Space Center, 80 p., 1984. (NASA-TM-58255) (GWU 6014)

McCollum*, G.W.
Life Sciences Integration Facility (Abstract).

McDonnell Douglas Astronautics Company
Space Station Life Sciences Research Facility Technology Assessment and Technology Development Plan:

McDonnell Douglas Astronautics Company
Space Station Life Sciences Research Facility Technology Assessment and Technology Development Plan, Volume I:

McDonnell Douglas Astronautics Company
Space Station Life Sciences Research Facility Technology Assessment and Technology Development Plan, Volume II:

Mohler*, S.
An overview of the residency training program for aerospace medicine at Wright State University.

Mohler*, S.; Heller, A.; Goodrum, J.
Preassessment of crews for long-term space flight (Abstract).
In: Abstracts of Papers, XXXIV International Congress of Aviation and Space Medicine, Belgrade, Yugoslavia, October 13-18, 1986, 2 p. (GWU 9962)
Mohler*, S.R.
Age and space flight.
_Aviation, Space, and Environmental Medicine_ 56: 714-717, 1985. (GWU 12014)

Mohler*, S.R.
Careers as an Aviation Medical Examiner (Abstract).
_Aviation, Space, and Environmental Medicine_ 61(5): 505, 1990. (GWU 13198)

Inflight combined vertical and lateral space vehicular accelerations: Human tolerances.

Money*, K.E.
Biological effects of space travel.

Morrison*, D.R.
Biomedical applications (Abstract).

National Aeronautics and Space Administration

National Aeronautics and Space Administration

National Aeronautics and Space Administration

National Aeronautics and Space Administration

National Aeronautics and Space Administration
_Shuttle Support Equipment: Life Sciences and the Shuttle Program_. Houston, TX: NASA, Johnson Space Center, 23 p., 1982. (GWU 3707)

National Aeronautics and Space Administration

National Aeronautics and Space Administration

Nicogossian*, A.; Pool*, S.
The Shuttle and its importance to space medicine.

Nicogossian*, A.; Pool*, S.L.; Leach*, C.S.; Moseley*, E.; Rambaut*, P.
Principles of NASA longitudinal medical studies. (Russian)
Nicogossian*, A.; Sulzman*, F.; Radtke, M.; Bungo*, M.  
Assessment of the efficacy of medical countermeasures in space flight.  

Nicogossian*, A.E.  
Countermeasures to space deconditioning.  

Nicogossian*, A.E.  
(GWU 6138)

Nicogossian*, A.E.  
Overall physiological response to space flight.  

Nicogossian*, A.E.; Dietlein*, L.F.  
Microgravity: Simulations and analogs.  

Nicogossian*, A.E.; Garshnek, V.  
Historical perspectives.  

Nicogossian*, A.E.; Huntoon*, C.L.; Pool*, S.L. (Eds.)  

Nicogossian*, A.E.; Lewis, C.S. (Eds.)  

Nicogossian*, A.E.; Nachtwey*, D.S.  
Orbital flight.  

Nicogossian*, A.E.; Parker, J.F., Jr.; Garshnek, V.  
Space vehicles for manned programs.  

Nicogossian*, A.E.; Pool*, S.L.  
Ground-based medical programs.  

Nicogossian*, A.E.; Pool*, S.L.  
Medical care and health maintenance in flight.  

Nicogossian*, A.E.; Pool*, S.L.; Leach*, C.S.; Moseley*, E.; Rambaut*, P.C.  
Concepts for NASA longitudinal health studies.  
*Aviation, Space, and Environmental Medicine* 54(12): S68-S72, 1983. (GWU 5229)
Nouchchedehi, J.M.; White*, R.J.; Dunn*, C.D.R.
An analysis of variance program for the evaluation of results of parallel line assays.
*Computer Programs in Biomedicine* 14: 197-205, 1982. (GWU 4647)

Olcott*, T.M.; Rudiger, C.E., Jr.

Paganelli, C.V.; Farhi*, L.E. (Eds.)

Pendergast*, D.R.; Olszowka*, A.J.; Rokitka*, M.A.; Farhi*, L.E.
Biomedical support of man in space.

Pendergast*, D.R.; Olszowka*, A.J.; Rokitka*, M.A.; Farhi*, L.E.
Biomedical support of man in space.
Paper presented at the 37th Congress of the International Astronautical Federation, Innsbruck, Austria, October 4-11, 1986, 8 p. (IAF/IAA 86-393) (GWU 8417)

Perry*, T.

Philpott*, D.E.
Production of contamination-free apertures (Abstract).

Philpott*, D.E.; Kato, K.; Stevenson, J.
Perfusion fixation in space: Problems and solutions (Abstract).
Abstract of paper presented at the 14th Western Regional Meeting of Electron Microscopists and Microanalysts, April 5-7, 1989, p. 7. (GWU 14236)

Pleasant, L.; Limbach, L. (Waters, E. = P.I.)
(NASA-CR-3587) (GWU 2885)

Pool*, S.L.
Space medicine.

Pool*, S.L.; Johnson, P.C., Jr.; Mason, J.A.
*Shuttle OFT Medical Report: Summary of Medical Results from STS-1, STS-2, STS-3, and STS-4.*
Houston, TX: NASA, Johnson Space Center, 102 p., 1983. (NASA-TM-58252) (GWU 5239)

Pool*, S.L.; Johnson*, P.C., Jr.; Mason, J.A. (Eds.)

Pool*, S.L.; Johnson*, P.C., Jr.; Mason, J.A. (Eds.)

Pool*, S.L.; Johnson*, P.C., Jr.; Mason, J.A. (Eds.)
Pool*, S.L.; Moseley*, E.C.
Medical evaluation for astronaut selection and longitudinal studies.
In: Space Physiology and Medicine, 2nd Edition (Nicogossian, A.E., Huntoon, C.L., Pool, S.L., Eds.).

Pool*, S.L.; Nicogossian*, A.
Biomedical results of the Space Shuttle orbital flight test program.
Aviation, Space, and Environmental Medicine 54(12): S41-S49, 1983. (GWU 5219)

Rambaut*, P.; Nicogossian*, A.
NASA's life sciences and space radiation biology.

Rock, J.A.; Fortney*, S.M.
Medical and surgical considerations for women in spaceflight.

Rothert, M.E.; Brown, H.A.; Mohler*, S.R.

Rothert, M.E.; Brown, H.A.; Mohler*, S.R.
Aviation, Space, and Environmental Medicine 59(7): 679-682, 1988. (GWU 9448)

Rothert, M.E.; Brown, H.A.; Mohler*, S.R.
Aviation, Space, and Environmental Medicine 58(8): 783-786, 1988. (GWU 9529)

Sandier*, H.
Are there limits to man's long-term presence in space?
Sandler*, H.
Human involvement in long-term spaceflight.
*Sangyo Ika Daigaku Zasshi* 7(Suppl.): 245-254, 1985. (GWU 7675)

Sandler*, H.; Vernikos*, J. (Eds.)

Santy, P.A.; Kapanka, H.; Davis, J.R.; Stewart*, D.F.
Analysis of sleep on shuttle missions (Abstract).

Schatte, C.; Grindeland*, R.; Callahan*, P.; Berry, W.; Funk, G.; Lencki, W.
Animal studies on Spacelab-3.

Sharp*, J.C.
United States and Soviet Life Sciences factors in long-duration space flights.

Smith, M.C., Jr.; Johnson*, P.C.; LeBlanc*, A.
Animal Enclosure Module inflight test.

Soffen*, G.
NASA’s future manned space flight program (Abstract).
*Acta Astronautica* 8(9-10): 1159, 1981. (GWU 3866)

Solberg, J.L.; Pleasant, L.G. (Long, W. = P.I.)

Souza*, K.A.
Cosmos 1129 mission description.

Souza*, K.A.
Cosmos experiments (Abstract).

Souza*, K.A.
Status of joint US/USSR experiments planned for the Cosmos ’83 biosatellite mission.
*Physiologist* 25(6, Suppl.): S57-S60, 1982. (GWU 3778)

Spencer, H.

Sulzman*, F.M.
Taylor*, G.R.; Winkler*, D.G.; Hunter, N.R.; Thompson, J.L.
High resolution image analysis for space flight biomedical studies (Abstract).

Timacheff*, N.
Soviet space stations.

Tokarev, V.F.; Razsolov, N.A.; Mohler*, S.R.; Nicogossian*, A.E.T.
Training of aerospace medicine physicians in the Soviet Union and the United States of America.
Aviation, Space, and Environmental Medicine 57(4): 376-380, 1986. (GWU 11891)

Tollinger, D.; Williams*, B.A.
Evaluation of biological models using Spacelab.
(ASME Paper 80-ENAs-38) (GWU 2909)

Tremor, J.W.; Callahan*, P.X.; Funk, G.
Biological results of the Experiment Verification Test (EVT) for the Research Animal Holding Facility (RAHF) (Abstract).

Current issues in space medicine.

Vernikos*, J.
Artificial gravity as a potential countermeasure for human exploration mission (Abstract).

Vernikos-Dannelis*, J.; Sharp, J.C.
The Life Sciences program at the NASA Ames Research Center: An overview.
Physiologist 32(1, Suppl.): S1-S4, 1989. (GWU 10791)

Wallace, J.S. (Dutcher, F.R. = P.I.)
(NASA-CR-4184) (GWU 9022)

West*, J.B.
Man in space.
News in Physiological Sciences 1: 189-192, 1986. (GWU 9713)

West*, J.B.
Spacelab: The coming of age of space physiology research.

White*, R.J.
(TIR-2114-MED-1007) (GWU 2870)

Space station and the life sciences.
(AIAA Paper-83-7089) (GWU 5589)
White*, R.J.; Leonard*, J.I.
Physiological data analysis using mathematical modeling and computer simulation (Abstract).

White*, R.J.; Leonard*, J.I.; Rummel, J.A.; Leach*, C.S.
A systems approach to the physiology of weightlessness.

Winter*, D.L.
The human presence in space.

NASA's Artificial Gravity Program and Flight Research Centrifuge Facility.
In: Third Nihon University International Symposium on Aerospace Science, p. 41-42, 1990. (GWU 13564)

Young*, L.R.; Colombano, S.P.; Haymann-Haber, G.; Grojeau, N.; Szolovits, P.; Rosenthal, D.
An expert system to advise astronauts during experiments.
Paper presented at the 40th Congress of the International Astronautical Federation, Malaga, Spain, October 7-12, 1989, 10 p. (IAF Paper 89-033) (GWU 11255)

Young*, L.R.; Rudiger, C.E., Jr.
Life sciences uses of Space Station Freedom.
INDEX OF PRINCIPAL INVESTIGATORS
Almon, R.R. 41, 47, 69, 70
Altchuler, S.I. 3, 7, 75
Arnaud, C. 30
Arnaud, C.D. 4, 9, 11, 14, 18, 20, 26, 30, 31, 33, 36
Arnaud, S. 4, 21, 22
Arnaud, S.B. 4, 5, 7, 8, 16, 22, 24, 26, 27, 31, 34, 42, 65
Baldwin, K. 41
Baldwin, K.M. 31, 41, 42, 44, 50, 51, 57, 59, 63, 64, 66, 67, 68, 69, 75
Bikle, D.D. 6, 14, 15, 27, 31
Blankenhorn, D.H. 42
Booth, F.W. 41, 43, 44, 46, 59, 61, 64, 65, 66, 67, 69, 70, 71
Boyd, D.P. 13, 21, 30
Brighton, C.T. 6
Buchanan, P. 5, 44, 46, 47, 52, 53, 66, 75, 76
Bunch, T.E. 7, 26
Callahan, P. 52
Callahan, P.X. 3, 21, 27
Cann, C. 5, 7, 18, 28
Cann, C.E. 5, 7, 8, 9, 10, 12, 25, 27, 36, 45
Carter, D.R. 6, 9, 14, 35
Castleman, K.R. 45, 46, 51, 57
Cavanagh, P. 9
Cavanagh, P.R. 9
Charles, J.B. 52
Cintron, N. 75
Convertino, V. 44
Convertino, V.A. 44, 46, 47, 53
Daunton, N.G. 46
DeGioanni, J.J.C. 33
DeLuca, H. 11
DeLuca, H.F. 7, 10, 11, 12, 13, 16, 18, 21, 22, 23, 26, 27, 28, 29, 31, 32, 33, 35, 75
Di Ferrante, D.T. 11
Di Ferrante, N. 19, 33
Dietlein, L. 24
Dillaman, R.M. 11, 30
Dolkas, C. 59
Dolkas, C.B. 59
Driscoll, T. 19
Dudley, G. 47, 51, 52
Dudley, G.A. 45, 47, 53, 54, 65, 66, 76
Edgerton, R. 48
Edgerton, V.R. 34, 41, 42, 44, 45, 46, 48, 50, 51, 52, 53, 54, 55, 57, 58, 61, 63, 64, 65, 68, 69, 70
Ellis, S. 12, 42, 48, 56, 61, 62, 63
Etlinger, J.D. 49, 51, 54, 56, 60, 65, 69, 70, 71, 72
Feller, D.D. 49, 51, 64
Fitts, R. 70
Fitts, R.H. 46, 49, 50, 55, 58, 68, 69, 70, 71
Frey, M.A. 50
Frey, M.A.B. 44
Fujii, M.D. 50
Genant, H. 13, 22, 28, 35
Genant, H.K. 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 19, 21, 28, 29, 30, 32, 33, 35, 42, 66
Ginoza, H.S. 49, 51
<table>
<thead>
<tr>
<th>Name</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goldspink, G.</td>
<td>56</td>
</tr>
<tr>
<td>Goldspink, G.E.</td>
<td>56</td>
</tr>
<tr>
<td>Gollnick, P.D.</td>
<td>42, 44, 47, 51, 53</td>
</tr>
<tr>
<td>Greenleaf, J.E.</td>
<td>16</td>
</tr>
<tr>
<td>Grindeland, R.</td>
<td>4, 22, 46, 52, 69</td>
</tr>
<tr>
<td>Grindeland, R.E.</td>
<td>7, 23, 26, 27, 31, 34, 38, 52, 57, 58, 61</td>
</tr>
<tr>
<td>Halloran, B.</td>
<td>14</td>
</tr>
<tr>
<td>Halloran, B.P.</td>
<td>6, 14, 15, 33</td>
</tr>
<tr>
<td>Hargens, A.R.</td>
<td>56, 75</td>
</tr>
<tr>
<td>Herbison, G.J.</td>
<td>54, 55, 58</td>
</tr>
<tr>
<td>Hoh, J.F.Y.</td>
<td>53</td>
</tr>
<tr>
<td>Holton, E.</td>
<td>15, 16</td>
</tr>
<tr>
<td>Holton, E.M.</td>
<td>5, 8, 14, 16, 30, 34</td>
</tr>
<tr>
<td>Huntoon, C.L.</td>
<td>30</td>
</tr>
<tr>
<td>Jee, W.</td>
<td>25</td>
</tr>
<tr>
<td>Jee, W.S.S.</td>
<td>3, 5, 11, 12, 13, 16, 17, 18, 20, 22, 25, 26, 27, 28, 29, 34, 35, 36, 37</td>
</tr>
<tr>
<td>Johnson, P.</td>
<td>19, 20, 56, 75</td>
</tr>
<tr>
<td>Johnson, P.C.</td>
<td>12, 20, 22, 31, 33, 57</td>
</tr>
<tr>
<td>Kazarian, L.</td>
<td>18, 31</td>
</tr>
<tr>
<td>Kazarian, L.E.</td>
<td>12, 18</td>
</tr>
<tr>
<td>Keil, L.</td>
<td>52</td>
</tr>
<tr>
<td>Kenny, A.D.</td>
<td>15, 18, 27</td>
</tr>
<tr>
<td>Kerrick, W.G.L.</td>
<td>53</td>
</tr>
<tr>
<td>Lacy, J.L.</td>
<td>19</td>
</tr>
<tr>
<td>Leach, C.</td>
<td>19, 33</td>
</tr>
<tr>
<td>Leach, C.S.</td>
<td>11</td>
</tr>
<tr>
<td>LeBlanc, A.</td>
<td>6, 19, 20, 29, 30, 31, 33, 35, 51, 56, 75</td>
</tr>
<tr>
<td>LeBlanc, A.D.</td>
<td>3, 12, 14, 19, 20, 21, 22, 31, 51, 57</td>
</tr>
<tr>
<td>Manatt, S.L.</td>
<td>21, 30</td>
</tr>
<tr>
<td>Mandel, A.D.</td>
<td>66</td>
</tr>
<tr>
<td>Martin, R.B.</td>
<td>16, 22, 27</td>
</tr>
<tr>
<td>Matthews, J.L.</td>
<td>23</td>
</tr>
<tr>
<td>Max, S.R.</td>
<td>42, 47, 50, 55, 56, 57, 58, 62, 64, 68, 71</td>
</tr>
<tr>
<td>Mazess, R.B.</td>
<td>6, 10, 11, 23, 24, 28, 29, 32</td>
</tr>
<tr>
<td>Mechanic, G.</td>
<td>4, 7</td>
</tr>
<tr>
<td>Mechanic, G.L.</td>
<td>6, 15, 18, 19, 24, 25, 27, 34, 36, 37</td>
</tr>
<tr>
<td>Mohler, S.R.</td>
<td>75</td>
</tr>
<tr>
<td>Morey, E.R.</td>
<td>6, 17, 25, 31, 32, 35, 36, 49, 51</td>
</tr>
<tr>
<td>Morey-Holton, E.</td>
<td>5, 6, 8, 10, 14, 15, 16, 18, 26, 27, 32, 36, 51</td>
</tr>
<tr>
<td>Morey-Holton, E.R.</td>
<td>22, 26, 27, 28, 36</td>
</tr>
<tr>
<td>Musacchia, X.J.</td>
<td>49, 51, 53, 59, 60, 65, 66</td>
</tr>
<tr>
<td>Neer, R.</td>
<td>31</td>
</tr>
<tr>
<td>Neer, R.M.</td>
<td>12, 16, 25, 29, 31, 32</td>
</tr>
<tr>
<td>Nerem, R.M.</td>
<td>3, 32, 35</td>
</tr>
<tr>
<td>Nicogossian, A.E.</td>
<td>62</td>
</tr>
<tr>
<td>Oyama, J.</td>
<td>3, 49, 59</td>
</tr>
<tr>
<td>Pool, S.L.</td>
<td>22, 62</td>
</tr>
<tr>
<td>Rambaut, P.</td>
<td>24</td>
</tr>
<tr>
<td>Rambaut, P.C.</td>
<td>15, 28, 29, 30, 62, 75</td>
</tr>
<tr>
<td>Riley, D.A.</td>
<td>46, 48, 49, 50, 62, 63, 71</td>
</tr>
<tr>
<td>Schneider, V.</td>
<td>19, 20, 24, 29, 50, 52, 56, 57, 75</td>
</tr>
<tr>
<td>Schneider, V.S.</td>
<td>5, 14, 19, 20, 21, 30, 33, 37, 51, 56, 75</td>
</tr>
<tr>
<td>Selzer, R.</td>
<td>48, 50</td>
</tr>
<tr>
<td>Selzer, R.H.</td>
<td>53, 56</td>
</tr>
</tbody>
</table>

96
Simmons, D.  18
Simmons, D.J.  31
Sonnenfeld, G.  66
Stanley, J.H.  27
Steele, C.R.  32, 35, 37
Suki, W.  33
Talbot, J.M.  4, 53
Thornton, W.  19, 68
Tipton, C.M.  33, 66
Vailas, A.  30, 69
Vailas, A.C.  11, 21, 22, 23, 30, 31, 33, 34, 38, 57, 75
Vandenburgh, H.H.  52, 69, 70
Vernikos-Danelis, J.  5, 65
Whalen, R.  70, 75
Whalen, R.T.  76
Wilmore, J.H.  76
Woodbury, D.M.  3, 4, 11, 37
Wunder, C.C.  36
Young, D.  24
Young, D.R.  5, 7, 9, 25, 26, 27, 34, 37, 38
APPENDIX: List of Principal Investigators and Addresses
Richard R. Almon  
Department of Biological Sciences  
State University of New York  
Buffalo, NY 14260

S.I. Alchuler  
Biomedical Laboratory Branch  
NASA, Johnson Space Center  
Houston, TX 77058

Claude D. Arnaud  
Endocrine Unit  
VA Medical Center (111-N)  
4150 Clement Street  
San Francisco, CA 94121

Sara B. Arnaud  
NASA, Ames Research Center  
Life Sciences Division  
Mail Stop 239-17  
Moffett Field, CA 94035

Kenneth Baldwin  
Department of Physiology  
University of California  
College of Medicine at Irvine  
Irvine, CA 92717

Daniel D. Bikle  
Veterans Administration Medical Center  
4150 Clement Street  
San Francisco, CA 94121

Frank Booth  
Department of Physiology and Cell Biology  
University of Texas Medical School  
Houston, TX 77225

Douglas Boyd  
NASA, Jet Propulsion Laboratory  
800 Oak Grove Drive  
Pasadena, CA 91109

C.T. Brighton  
Department of Orthopaedic Research  
University of Pennsylvania  
Philadelphia, PA 19104

Paul Buchanan  
NASA, Kennedy Space Center  
Biomedical Office  
Code MD  
Kennedy Space Center, FL 32899

Theodore Bunch  
NASA, Ames Research Center  
Mail Stop 239-4  
Moffett Field, CA 94035

Paul X. Callahan  
NASA, Ames Research Center  
Moffett Field, CA 94035

Christopher E. Cann  
Department of Radiology, C-309  
University of California  
San Francisco, CA 94143

Dennis R. Carter  
Mechanical Engineering Department  
Stanford University  
Design Division  
Stanford, CA 90435

Kenneth R. Castleman  
NASA, Jet Propulsion Laboratory  
California Institute of Technology  
Pasadena, CA 91109

P.R. Cavanagh  
Center for Locomotion Studies  
Pennsylvania State University  
University Park, PA 16802

Nitza M. Cintron  
NASA, Johnson Space Center  
Biomedical Laboratories Branch  
Mail Code SD4N  
Houston, TX 77058

Victor A. Convertino  
NASA, Kennedy Space Center  
Bionetics Corporation, BIO-1  
Biomedical Research Laboratory  
Kennedy Space Center, FL 32899
Hector F. DeLuca  
Department of Biochemistry  
University of Wisconsin  
Madison, WI 53706

N. DiFerrante  
Biochemistry Department  
Baylor College of Medicine  
Houston, TX 77030

Richard M. Dillaman  
Institute for Marine Biomedical Research  
University of North Carolina  
7205 Wrightsville Avenue  
Wilmington, NC 28403

Constantine B. Dolkas  
NASA, Ames Research Center  
Life Sciences Division  
Mail Stop 239-17  
Moffett Field, CA 94035

Theda B. Driscoll  
Division of Experimental Biology  
Baylor College of Medicine  
Houston, TX 77030

Gary A. Dudley  
NASA, Kennedy Space Center  
Code MD-M  
Kennedy Space Center, FL 32899

Bonnie Dunbar  
NASA, Johnson Space Center  
The Astronaut Office  
Houston, TX 77058

V. Reggie Edgerton  
Department of Kinesiology  
2963 Slichter Hall  
University of California  
Los Angeles, CA 90024

Stanley Ellis  
5770 Arboretum Drive  
Los Altos, CA 94022

Joseph D. Etlinger  
Basic Sciences Building  
New York Medical College  
Valhalla, NY 10595

David D. Feller  
NASA, Ames Research Center  
Moffett Field, CA 94035

Robert H. Fitts  
Department of Biology  
Marquette University  
Milwaukee, WI 53233

Mary Ann Bassett Frey  
Lockheed Corporation  
600 Maryland Avenue  
Suite 600  
Washington, DC 20024

Mavis D. Fujii  
NASA, Johnson Space Center  
Space Biomedical Research Institute  
Houston, TX 77058

Harry K. Genant  
Department of Radiobiology  
School of Medicine  
University of California  
San Francisco, CA 94143

H.S. Ginoza  
NASA, Ames Research Center  
Moffett Field, CA 94035

Geoffrey E. Goldspink  
Department of Anatomical and Cellular Biology  
Tufts University  
Boston, MA 02111

Phillip D. Gollnick (deceased)  
College of Veterinary Medicine  
Washington State University  
Pullman, WA 99164
Richard Grindeland  
NASA, Ames Research Center  
Life Sciences Division  
Mail Stop 239-7  
Moffett Field, CA 94035

Bernard P. Halloran  
Veterans Administration Medical Center  
4150 Clement Street  
San Francisco, CA 94121

Gerald J. Herbison  
Department of Rehabilitation Medicine  
Jefferson Medical College  
Thomas Jefferson University  
Philadelphia, PA 19107

Joseph Foon Yoong Hoh  
Physiology Department  
University of Sydney  
Sydney NSW 2006 Australia

Webster S.S. Jee  
Division of Radiobiology, Building 351  
University of Utah  
Salt Lake City, UT 84112

Phillip C. Johnson (deceased)  
NASA, Johnson Space Center  
Code SD  
Houston, TX 77058

L. E. Kazarian  
Biodynamic Effects Branch  
Biodynamics & Bioengineering Division  
Air Force Aerospace Medical Research Laboratory  
Wright-Patterson Air Force Base, OH 45433

Alexander D. Kenny  
School of Medicine  
Texas Tech University  
Lubbock, TX

W.G. Kerrick  
University of Miami  
Coral Gables, FL 33124

Adrian D. LeBlanc  
Baylor College of Medicine  
One Baylor Plaza  
Houston, TX 77030

Stanley L. Manatt  
NASA, Jet Propulsion Laboratory  
Biomedical Research Program  
California Institute of Technology  
4800 Oak Grove Drive  
Pasadena, CA 91109

R. Bruce Martin  
Orthopaedic Research Laboratories  
TB 150  
University of California  
Davis, CA 95616

Stephen R. Max  
Department of Neurology  
University of Maryland  
Baltimore, MD 21201

Richard B. Mazess  
University of Wisconsin  
Health Science Center  
Madison, WI 43706

Richard M. Neer  
Massachusetts General Hospital  
Fruit Street  
Boston, MA 02114
MUSCULOSKELETAL DISCIPLINE PRINCIPAL INVESTIGATORS: 1980-1990

Robert M. Nerem
Department of Mechanical Engineering
Georgia Institute of Technology
Atlanta, GA 30332

Jiro Oyama
NASA, Ames Research Center
Mail Stop 239-17
Moffett Field, CA 94035

Danny A. Riley
Department of Anatomy
Medical College of Wisconsin
8701 Watertown Plank Road
Milwaukee, WI 53226

Victor S. Schneider
University of Texas
Health Sciences Center
Houston, TX 77025

Robert H. Selzer
NASA, Jet Propulsion Laboratory
California Institute of Technology
4800 Oak Grove Drive
Pasadena, CA 91109

David J. Simmons
Department of Surgery
University of Texas at Galveston
Galveston, TX 77550

James H. Stanley
Advanced Research and Applications Group
1223 East Arques Avenue
Sunnyvale, CA 94086

Charles R. Steele
Department of Mechanical Engineering
Stanford University
Stanford, CA 94305

Thomas P. Stein
School of Osteopathic Medicine
University of Medicine and Dentistry of New Jersey
401 Haddon Avenue
Camden, NJ 08103

J.M. Talbot
Federation of American Societies for Experimental Biology
9650 Rockville Pike
Bethesda, MD 20814

William E. Thornton
NASA, Johnson Space Center
Astronaut Office
Mail Code CB
Houston, TX 77058

Arthur C. Vailas
Biodynamics Laboratory
2000 Observatory Drive
University of Wisconsin-Madison
Madison, WI 53706

Herman H. Vandenburgh
Department of Laboratory Medicine
The Miriam Hospital
164 Summit Avenue
Providence, RI 02906

Robert T. Whalen
NASA, Ames Research Center
Life Sciences Division
Moffett Field, CA 94035

J.H. Wilmore
University of Arizona
Muscle Biology Group
Tucson, AZ 85721

Dixon M. Woodbury
College of Medicine
University of Utah
Salt Lake City, UT 84132

Charles C. Wunder
702 West Park Road
Iowa City, IA 52246

Donald R. Young
NASA, Ames Research Center
Mail Stop 236-6
Moffett Field, CA 94035
A 10-YEAR CUMULATIVE BIBLIOGRAPHY OF PUBLICATIONS RESULTING FROM FD RESEARCH SUPPORTED BY THE MUSCULOSKELETAL DISCIPLINE OF THE SPACE PHYSIOLOGY AND COUNTERMEASURES PROGRAM OF NASA'S LIFE SCIENCES DIVISION IS PROVIDED. PRIMARY SUBJECTS ARE BONE, MINERAL, AND CONNECTIVE TISSUE, AND MUSCLE. GENERAL PHYSIOLOGY REFERENCES ARE ALSO INCLUDED. PRINCIPAL INVESTIGATORS WHOSE RESEARCH TASKS RESULTED IN PUBLICATION ARE IDENTIFIED BY ASTERISK. PUBLICATIONS ARE IDENTIFIED BY A RECORD NUMBER CORRESPONDING WITH THEIR ENTRY IN THE LIFE SCIENCES BIBLIOGRAPHIC DATABASE, MAINTAINED BY THE GEORGE WASHINGTON UNIVERSITY.