

CURRICULUM VITAE

Jeffrey Charles Lotz, Ph.D.

Education:

1983-1988 MIT/Harvard Division of Health, Science and Technology
Ph.D. in Medical Engineering
1979-1980 Stanford University
M.S. in Mechanical Engineering Design
1975-1979 University of California, Berkeley
B.S. in Mechanical Engineering

Awards and Honors:

Deputy-Editor, Spine
Associate Editor, The Spine Journal
Member, Musculoskeletal Tissue Engineering Study Section, NIH, 2005-2009
Medtronic Sofamor Danek Best Poster Award, ISSLS Meeting, 2001
Nordby-Smith Award for Minimally Invasive Surgery, 2000
National Research Council, Panel on Musculoskeletal Disorders and the Workplace, 1999-2001
Volvo Award for Low Back Pain Research, 1998
North American Spine Society AcroMed Award for Outstanding Spinal Research, 1993
Tau Beta Pi Engineering Honors Fraternity
Pi Tau Sigma Mechanical Engineering Honors Fraternity
Howmedica Fellow, 1983-1986
Whitaker Fellow, 1986-1988

Professional/Academic Experience:

2002-Present Professor and Director, Orthopaedic Bioengineering Laboratory, University of California at San Francisco.
2005-Present Founder, Consultant, RELIEVANT MedSystems, Inc.
2002-Present Faculty, Division of Bioengineering, UCSF
2001-Present Executive Committee, Joint Bioengineering Graduate Group, UCSF and UCB
2000-Present Faculty, Keck Center for Integrative Neuroscience
1998-2002 Associate Professor and Director, Orthopaedic Bioengineering Laboratory, UCSF
1992-Present Faculty, Joint Bioengineering Graduate Group, UCSF and UCB
1992-1998 Assistant Professor and Director, Orthopaedic Bioengineering Laboratory, UCSF
1991-1993 Managing Engineer, Failure Analysis Associates, Menlo Park, CA
1989-1991 Senior Engineer, Failure Analysis Associates, Menlo Park, CA
1987 Instructor in Introductory Mechanics, MIT MITES Program, MIT, Cambridge, MA
1986 Subintern, Adult Medicine, Mount Auburn Hospital, Cambridge, MA
1980-1983 Research/Design Engineer, Stanford Research Institute, Menlo Park CA

Professional Societies:

International Society for the Study of the Lumbar Spine
Orthopaedic Research Society
American Society of Mechanical Engineers
American Society of Biomechanics
American Society of Automotive Engineers

Peer Reviewer:

Journal of Orthopaedic Research, Spine, Journal of Biomechanics, Journal of Biomechanical Engineering, Journal of Bone and Mineral Research, The Spine Journal.

Publications:

1. Rousseau, M.A., Ulrich, J.A., Bass, E.C., Rodriguez, A., Liebenberg, E., Liu, J. and Lotz, J.C., Stab incision for inducing intervertebral disc degeneration in the rat. *Spine Journal*, in press.
2. Court, C., and Lotz, J.C., Biological and mechanical consequences of transient intervertebral disc bending, *European Spine Journal*, in press.
3. Rousseau, M.A., Bradford, D.S., Bertagnoli, R., Hu, S.S., and Lotz, J.C., Disc arthroplasty design influences intervertebral kinematics and facet forces. *The Spine Journal*, V 6(3), pp 258-266, 2006.
4. Wagner, D.R., Reiser, K.M., and Lotz, J.C., Glycation increases human annulus fibrosus stiffness in both experimental measurements and theoretical predictions, *Journal of Biomechanics*, Vol. 39(6), pp 1021-1029, 2006.
5. Lotz, J.C. and Ulrich, J.A., Innervation, inflammation, and hypermobility may characterize pathologic disc degeneration: Review of animal model data, *Journal of Bone and Joint Surgery*, V 88(S2), pp 76-82, 2006.
6. Hsieh, A.H., Wagner, D.R., Cheng, L.Y. and Lotz, J.C., Dependence of mechanical behavior of the murine tail disc on regional material properties: a parametric finite element study, *ASME J. Biomech. Eng.*, Vol. 127, pp 1158-1167, 2006.
7. Rousseau, M-A, Bradford, D.S., Hadi, T.M., Pederson, K.L., and Lotz, J.C., The instant axis of rotation influences facet forces at L5/S1 during flexion/extension and lateral bending. *The European Spine Journal*, 15(3), pp 299-307, 2006.
8. Bass, E.C., Nau, W.H., Diederich, C.J., Libenberg, E., Shu, R., Pellegrino, R., Sutton, J., Attawia, M., Hu, S.S., Ferrier, W.T., Lotz, J.C., Intradiscal thermal therapy does not stimulate biologic remodeling in an *in vivo* model. *Spine*, 31 (2), pp 139-145, 2006
9. Lotz, J.C., and Kim, A.J., Disc degeneration: why, when, and how. *Neurosurg Clin N Am*, 16 (4), pp 657-663, 2005.
10. Keshari, K.R., Zektzer, A.S., Swanson, M.G., Majumdar, S., Lotz, J.C., Kurhanewicz, J. Characterization of intervertebral disc degeneration by high-resolution magic angle spinning (HR-MAS) spectroscopy. *Magn Reson Med*, 53 (3), pp 519-527, 2005
11. Keshari, K.R., Lotz, J.C., Kurhanewicz, J., and Majumdar, S., Correlation of HR-MAS spectroscopy derived metabolite concentrations with collagen and proteoglycan levels and Thompson grade in the degenerative disc, *Spine*, 30 (23), pp 2683-2688, 2005.
12. Yao, W., Hadi, T., Jiang, Y., Lotz, J., Wronski, T.J., and Lane, N.E., Basic fibroblast growth factor improves trabecular bone connectivity and bone strength in the lumbar vertebral body of osteopenic rats, *Osteoporosis International*, 16 (12), pp 1939-1947, 2005.
13. Acosta, F.L., Lotz, J., and Ames, C.P., The potential role of mesenchymal stem cell therapy for intervertebral disc degeneration: a critical overview. *Neurosurg Focus*, 19 (3) E4, 2005.
14. Wagner, D.R., Reiser, K.M., and Lotz, J.C., Glycation increases human annulus fibrosus stiffness in both experimental measurements and theoretical predictions, *Journal of Biomechanics*, in press
15. Ananthakrishnan, D., Berven, S., Deviren, V., Cheng, K., Lotz, J.C., Xu, Z., and Puttlitz, C.M., The effect on anterior column loading due to different vertebral augmentation techniques. *Clinical Biomechanics*, V 20 pp 25-31, 2005.
16. Diao, E., Shao, F., Liebenberg, E., Rempel, D., and Lotz, J.C., Carpal tunnel pressure alters median nerve function in a dose-dependent manner: a rabbit model for carpal tunnel syndrome, *Journal of Orthopaedic Research*, V 23(1), pp 218-223, 2005.

17. Kroeber, M. Unglaub, F., Guehring, T., Nerlich, A., Hadi, T., Lotz, J., and Carstens, C., Effects of controlled dynamic disc distraction on degenerated intervertebral discs. *Spine* V 30 (2), pp 181-187, 2005.
18. Puttlitz, C.M., Rousseau, M.A., Zheng, X., Hu, S., Tay, B.K-B., and Lotz, J.C., Intervertebral disc replacement maintains cervical spine kinetics, *Spine*, V 29 (24), pp2809-2814, 2005.
19. Lotz, J.C., Animal models of intervertebral disc degeneration: lessons learned. *Spine* V 29 (23), pp 2742-2750, 2004
20. An, H.S., Anderson, P.A., Haughton, V.M., Iatridis, J.C., Kang, J.D., Lotz, J.C., Natarajan, R.N., Oegema, T.R., Roughley, P., Setton, L.A., Urban, J.P., Videman, T., Andersson, G.B., Weinstein, J.N., Introduction: disc degeneration summary, *Spine*, V 29(23), pp 2677-2678, 2004
21. Majumdar, S., Issever, A.S., Burghart, A., Lotz, J., Arfelli, F., Rigon, L., Heitner, G., Menk, R-H., Diffraction enhanced imaging of articular cartilage and comparison with micro-computed tomography of the underlying bone structure. *Eur Radiol*, V. 14, pp 1440-1448, 2004
22. Lotz, J.C. and Diederich, C.J., Point of View, *Spine*, V 29 (10), pp 1130-1131, 2004.
23. Bass, E., Ashford, F.A., Segal, M.R., and Lotz, J.C., Biaxial testing of human annulus fibrosus and its implications for a constitutive formulation, *Annals of Biomedical Engineering*, V 32(9), pp 1233-1244, 2004
24. Rousseau, M-A., Bass, E.C., and Lotz, J.C., An anterior approach to the lumbar spine of the Sprague-Dawley rat, *Lab Animal*, V 33 (6), pp 43-44, 2004
25. Patel, V.V., Hall, K., Ries, M., Lotz, J., Ozhinsky, E., Lindsey, C., Lu, Y., Majumdar, S., A three-dimensional MRI analysis of knee kinematics, *J. Orthop Res*, V 22 (2), pp 283-292, 2004.
26. Crevensten, G., Walsh, A.J.L., Anathakrishnan, D., Page, P., Wahba, G.M., Lotz, J.C. and Berven, S., Intervertebral disc cell therapy for regeneration: Mesenchymal stem cell implantation in rat intervertebral discs, *Annals of Biomedical Engineering*, V 32 (3), pp 430-434, 2004
27. Puttlitz, C.M., Melcher, R.P., Kleinstueck, F.S., Harms, J., Bradford, D.S. and Lotz, J.C., Stability analysis of craniovertebral junction fixation techniques, *JBJS*, 86-A (3), pp 561-568, 2004
28. Puttlitz, C.M., Deviren, V., Smith, J.A., Kleinstueck, F.S., Tran, Q.N., Thurlow, R.W., Eisele, P., Lotz, J.C., Biomechanics of cervical laminoplasty: kinetic studies comparing different surgical techniques, temporal effects and the degree of level involvement. *Eur Spine J*, V 13 (3), pp 213-221, 2004.
29. Wagner, D.R. and Lotz, J.C., Theoretical model and experimental results for the nonlinear elastic behaviour of human annulus fibrosus, *Journal of Orthopaedic Research*, V 22 (4), pp 901-909, 2004.
30. Rannou, F., Lee, T-S., Zhou, R., Chin, J., Lotz, J.C., Mayoux-Benhamou, M-A., Barbet, J.P., and Shyy, J.Y-J., Intervertebral Disc Degeneration: The Role of the Mitochondrial Pathway in Annulus Fibrosus Cell Apoptosis Induced by Overload, *American Journal of Pathology*, 164 (3), pp 915-924, 2004
31. O'Neill, C.W., Liu, J.J., Leibenberg, E., Hu, S.S., Deviren, V., Tay, B. K-B., Chin, C.T., and Lotz, J.C., Percutaneous Plasma Decompression Alters Cytokine Expression in Injured Porcine Intervertebral Discs, *The Spine Journal*, 4(1), pp 88-98, 2004
32. Walsh, A.J.L. and Lotz, J.C., Biological Response of the Intervertebral Disc to Dynamic Loading, *Journal of Biomechanics*, 37 (3), pp 329-337, 2004
33. Walsh, A.J.L., Bradford, D.S.B and Lotz, J.C., *In Vivo* Growth Factor Treatment of Degenerated Intervertebral Discs, *Spine*, 29(2), pp 156-163, 2004
34. Bass, E.C., Wistrom, E.V., Diederich, C.J., Nau, W.H., Pellegrino, R., Ruberti, J., and Lotz, J.C., Heat-Induced Changes in Porcine Annulus Fibrosus Biomechanics, *Journal of Biomechanics*, 37 (2): 233-240, 2004.
35. Palmer, E.I., and Lotz, J.C., The Compressive Creep Properties of Normal and Degenerated Murine Intervertebral Discs. *Journal of Orthopaedic Research*, 22 (1): 164-169, 2004.

36. Hsieh, A.H. and Lotz, J.C., Prolonged Spinal Loading Induces MMP-2 Activation in Intervertebral Discs, *Spine*, 28 (16), pp 1781-1788, 2003
37. Ries, M. D., Suzuki, Y., Renowitzky, G., Lotz, J. C., Barrack, R. L., Bourne, R. B., Rorabeck, C. H., Effect of cementless bowed stem distal surface contour and coronal slot on femoral bone strains and torsional stability, *J. Arthroplasty*, 18 (4), pp 494-498, 2003
38. Soejima, O., Diao, E., Lotz, J. C., Hariharan, J. S., Naito, M., Dorsal and Palmar Material Properties of the Adult Human Flexor Profundus Tendon in Zone II, *J. Hand Surgery*, 8 (1), pp 53-58, 2003
39. Kleinstueck, F.S., Diederich, C.J., Nau, W.H., Puttlitz, C.M., Smith, J.A., Bradford, D.S., and Lotz, J.C., Temperature and Thermal Dose Distributions during Intradiscal Electro-Thermal (IDET) Therapy in Cadaveric Lumbar Spine, *Spine*, 28 (15), pp 1700-1709, 2003
40. Whyne, C.M, Hu, S.S. and Lotz, J.C., Burst fracture in the metastatically involved spine, Part II: Biomechanically derived guideline equations for risk prediction, *Journal of Spinal Disorders*, 16 (2), pp 180-185, 2003
41. Ishiko, T., Puttlitz, C.M., Lotz, J.C., and Diao, E., Scaphoid kinematic behavior after division of the transverse carpal ligament, *J. Hand Surgery*, 28 (2), pp 267-271, 2003
42. Whyne, C.M, Hu, S.S. and Lotz, J.C., Burst fracture in the metastatically involved spine. Part I: Development, validation, and parametric analysis of a three-dimensional poroelastic finite element model, *Spine*, 28 (7), 652-660, 2003
43. Issever A.S., Walsh A., Lu Y., Burghardt A., Lotz J.C., and Majumdar S., MicroCT Evaluation of Trabecular Bone Structure In Loaded Murine Tail Vertebrae, *Spine* 28(2): 123-128; Jan 2003
44. Lotz, J.C., Hsieh, A.H., Walsh, A.L., Palmer, E.I. and Chin, J.R., Mechanobiology of the Intervertebral Disc, *Biochemical Journal*, 30 (6), 853-858, 2002
45. Melcher, R.P., Puttlitz, C.M., Kleinstueck, F.S., Lotz, J.C., Harms, J., and Bradford, D.S., Biomechanical testing of posterior atlantoaxial fixation techniques, *Spine* Vol. 27, No. 22, pp 2435-2440, 2002.
46. Byl, C., Puttlitz, C., Byl, N., Lotz, J., and Topp, K., Strain in the Median and Ulnar Nerves During Upper Extremity Positioning, *J. of Hand Surgery*, Vol. 27A, No.6, pp 1032-1040, 2002.
47. Mao, J.R., Dean, W.B., Taylor, G., Wagner, D.W., Afzal, V., Lotz, J.C., Rubin, E.M., and Bristow, J.D., Tenascin-X Deficiency Mimics the Ehlers-Danlos Syndrome in Mice Through Alteration of Collagen Deposition, *Nat Genet.* 2002 Apr;30(4):421-5.
48. Kroeber M, Ries MD, Suzuki Y, Renowitzky G, Ashford F, Lotz J., Impact Biomechanics and Pelvic Deformation During Insertion of Press Fit Acetabular Cups, *Journal of Arthroplasty*, *J Arthroplasty*. 2002 Apr;17(3):349-54.
49. Riches P, Dhillon N, Lotz J, Woods A, McNally D, The internal mechanics of the intervertebral disc under cyclic loading., *J Biomech.* 2002 Sep;35(9):1263.
50. Kroeber MW, Rovinsky D, Lotz J, Carstens C., Bioabsorbable materials for fixation of slipped capital femoral epiphysis (SCFE), *Orthopade* 2002 Jun;31(6):563-7
51. Whyne, C.M, Hu, S.S. and Lotz, J.C., Mechanics of Metastatically Involved Spine Described through Poroelastic Modeling, *Journal of Biomechanics*, 34: 1317-1324, 2001
52. Kleinstueck, F.S., Diederich, C.J., Nau, W.H., Puttlitz, C.M., Smith, J.A., Bradford, D.S., and Lotz, Acute Biomechanical and Histological Effects of Intradiscal Electrothermal Therapy on Human Lumbar Discs, *Spine*, 26:2198-2207, 2001
53. Chiu, E.J., Newitt, D.C., Segal, M.R., Hu, S.S., Lotz, J.C., Majumdar, S., Measurement of MR Relaxation and Water Diffusion in the Human Lumbar Intervertebral Disc under Compression - In Vitro, *Spine*. 2001 Oct 1;26(19):E437-44.
54. Court, C. Colliou, O.K., Chin, J.R., Liebenberg, E., Bradford, D.S., and Lotz, J.C., The Effect of Static *in vivo* Bending on the Intervertebral Disc, *The Spine Journal*, 1 (4): 239-245, 2001
55. Dhillon, N., Bass, E.C., and Lotz, J.C., Effect of Frozen Storage on Creep Behavior of Human Intervertebral Discs, *Spine*, 26 (8): 883-888, 2001

56. Diederich, C.J., Nau, W.H., Kleinstueck, F., Lotz J.C., Bradford D.S., IDTT therapy in cadaveric lumbar spine: temperature and thermal dose distributions, in Thermal Treatment of Tissue: Energy Delivery and Assessment, Proceedings of SPIE Annual Meeting, San Jose, Jan 21-22. 2001
57. Kroeber MW, Lane N, Lotz JC, Thomsen M, Effects of early estrogen replacement therapy on bone stability of ovariectomized rats. A biomechanical and radiologic study of the tibial plateau, Orthopade. 2000 Dec;29(12):1082-7.
58. Fujita, Y., Wagner, D.R., Biviji, A.A., Duncan, N.A., and Lotz, J.C. Anisotropic Shear Behavior of the Annulus Fibrosus: Effect of Harvest Site and Tissue Pre-strain, Medical Engineering & Physics, 22 (5): 349-357, 2000
59. Whyne, C.M., Hu, S.S. and Lotz, J.C., Biphasic Material Properties of Lytic Bone Metastases, Annals of Biomedical Engineering, 28 (9): 1154-1158, 2000
60. Chin, J.R. and Lotz, J.C., Intervertebral Disc Cell Death is Dependent on the Magnitude and Duration of Spinal Loading, Spine, 25 (12): 1477-1483, 2000
61. Lotz, J.C., Kroeber, M.W., Heilmann, M., Pericherla, K., Kimmel, D., Kinney, J.H., and Lane, N.E., Tibial Plateau Fracture is a Sensitive Measure of Estrogen-Dependent Bone Fragility in Rats, Journal of Orthopaedic Research, 18 (2):326-332, 2000.
62. Klisch, S.A., and Lotz, J.C., A special theory of biphasic mixtures and experimental results for human annulus fibrosus tested in confined compression, J. Biomech Eng, Vol. 122, pp1-9, 2000
63. Filvaroff E; Erlebacher A; Ye J; Gitelman SE; Lotz J; Heillman M; Derynck R. Inhibition of TGF-receptor signaling in osteoblasts leads to decreased bone remodeling and increased trabecular bone mass, Development, Oct;126(19):4267-79, 1999
64. Diao E, Soejima O, Lotz J, Hariharan J. Randomized biomechanical study of zone II human flexor tendon repairs [letter], J Hand Surg [Am], Jul;24(4):871-3, 1999
65. Klisch, S.M. and Lotz, J.C., A Fiber-reinforced Continuum Theory and Constitutive Equation for the Annulus Fibrosus, Journal of Biomechanics, 32 (10), pp 1027-1036, 1999.
66. Randall RL; Wolf EM; Heilmann MR; Lotz J., Comparison of bone-patellar tendon-bone interference screw fixation and hamstring transfemoral screw fixation in anterior cruciate ligament reconstruction , Orthopedics, Jun;22(6):587-91, 1999
67. Lotz, J.C., Colliou, O.K., Chin, J.R., Duncan, N.A., and Liebenberg E., Compression-Induced Degeneration of the Intervertebral Disc: An In Vivo Mouse Model and Finite Element Study, Volvo Award for Low Back Pain Research, Spine, Dec 1, 23(23):2493-506, 1998
68. Lotz, J.C., The Biomechanics of Prevention and Treatment for Low Back Pain: 2nd International Workshop, Clinical Biomechanics, 13: 561-573, 1998
69. Duncan, N.A., and Lotz, J.C., Experimental Validation of a Porohyperelastic Finite Element Model of the Annulus Fibrosus, Biomechanics & Biomedical Engineering, Eds. J. Middleton and G.N. Pande, Gordon and Breach, 1998
70. Tay, B. K-B, Le, A.X., Heilman, M., Lotz, J.C., and Bradford, D.S., Use of a Collagen-Hydroxyapatite Matrix in Spinal Fusion: A Rabbit Model, Spine, Nov 1;23(21):2276-81, 1998
71. Lotz, J.C., Hariharan, J.S., Diao, E., An Analytic Model to Predict the Strength of Tendon Repairs, Journal of Orthopaedic Research, 16 (4): 399-405, 1998.
72. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford. D.S., Use of Ultrasound in a Spinal Fusion: A Rabbit Model., Spine, Vol. 23, No. 10, pp 1142-1148, 1998
73. Whyne, C., Hu, S.S., Lotz, J.C., The Influence of the Posterior Arch on Vertebral Body Strain., Spine, 23 (8): 899-907, 1998
74. Fujita, Y., Duncan, N.A., Lotz, J.C., Radial Tensile Properties of the Annulus Fibrosus, Journal of Orthopaedic Research, (15):814-819, 1997
75. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford. D.S., Use of Electromagnetic Fields in a Spinal Fusion: A Rabbit Model., Spine, Oct 15;22(20):2351-6, 1997

76. Bass, E., Duncan, N.A., Bueff, H.U., Dusic, J., and Lotz, J.C., The Compressive Creep Behavior of the Porcine Intervertebral Disc is Affected by Frozen Storage. *Spine*,15;22(24):2867-2876, 1997
77. Lotz, J.C., Hu, S.S., Chiu, D.F., Colliou, O., Glazer, P.A., Duncan, N.A., Poser, D.V.M., Carbonated Apatite Cement Augmentation of Pedicle Screw Fixation in the Lumbar Spine., *Spine*, Spine, 22 (23):2716-2723, 1997
78. Hariharan, J.S., Diao, E., Soejima, O. and Lotz, J.C., Tensile Properties of Incomplete Lacerations of the Human Digital Flexor Tendon. *The Journal of Hand Surgery*, 22A (6): 1-5, 1997.
79. Glazer, P.A., Colliou, O., Klisch, S.M., Bradford D.S., Bueff, H.U., Lotz, J.C., Biomechanical Analysis of Multi-Level Fixation Methods in the Lumbar Spine, *Spine*, 22 (2):171-182, 1997.
80. Majumdar, S; Newitt, D; Mathur, A; Osman, D; Gies, A; Chiu, E; Lotz, J; Kinney, J; Genant, H. Magnetic resonance imaging of trabecular bone structure in the distal radius: relationship with X-ray tomographic microscopy and biomechanics. *Osteoporosis International*, 6(5):376-85, 1996.
81. Glazer, P.A., Colliou, O., Lotz, J.C., and Bradford, D.S., Biomechanical Analysis of Lumbosacral Fixation. *Spine*, 21 (10):1211-1222, 1996
82. Diao, E., Hariharan, J.S., Soejima, O., and Lotz, J.C. Effect of Peripheral Suture Depth on Strength of Tendon Repairs. *The Journal of Hand Surgery*, 21A(2), pp243-239, 1996.
83. Lotz, J.C. and Namba, R.N., Biomechanics of femoral prostheses. *Portland Bone Symposium*. Portland OR, August, 1995
84. Soejima O; Diao E; Lotz JC; Hariharan JS. Comparative mechanical analysis of dorsal versus palmar placement of core suture for flexor tendon repairs. *Journal of Hand Surgery*. American Volume, 1995 Sep, 20(5):801-7
85. Bueff HU; Lotz JC; Colliou OK; Khapchik V; Ashford F; Hu SS; Bozic K; Bradford DS. Instrumentation of the cervicothoracic junction after destabilization. *Spine*, 1995 Aug 15, 20(16):1789-92
86. Lotz, J.C., Cheal, E.J. and Hayes, W.C., Stress Distributions within the Proximal Femur During Gait and Falls: Implications for Osteoporotic Fracture. *Osteoporosis International*, 1995, 5(4):252-61
87. Genant, H.K., Gluer, C.C, and Lotz, J.C.: Gender Differences in Bone Density, Skeletal Geometry, and Fracture Biomechanics. *Radiology*, 190:636-640,1994.
88. Lotz, J.C., Cheal E.J., and Hayes W.C.: Fracture Prediction for the Proximal Femur Using Finite Element Models, Part I: Linear Analysis, *Journal of Biomechanical Engineering*, Vol. 113(4), p. 353-360, 1991.
89. Lotz, J.C., Cheal E.J., and Hayes W.C.: Fracture Prediction for the Proximal Femur Using Finite Element Models, Part II: Nonlinear Analysis, *Journal of Biomechanical Engineering*, Vol. 113(4), p. 361-365, 1991.
90. Lotz J.C., Hayes W.C.: Mechanical Properties of Metaphyseal Bone in the Proximal Femur, *J. Biomechanics* Vol. 24, No. 5, pp. 317-329, 1991.
91. Lotz, J.C., Gerhart, T.N., and Hayes, W.C.: Mechanical Properties of Trabecular Bone from the Proximal Femur: A Quantitative CT Study, *Journal of Computer Assisted Tomography*, 14(1) 107-114, 1990.
92. Lotz, J.C. and Hayes, W.C.: The Use of Quantitative Computed Tomography to Estimate Risk of Fracture of the Hip from Falls, *The Journal of Bone and Joint Surgery*, Vol. 72-A, No. 5, 1990.
93. Esses, S.I., Lotz, J.C. and Hayes, W.C.: Biomechanical Properties of the Proximal Femur Determined In Vitro by Single-Energy Quantitative Computed Tomography, *Journal of Bone and Mineral Research*, Vol. 4, No. 5, 1989
94. Cheal, E.J., Lotz, J.C., Edwards, W.T., Knopf, K.B., and Hayes, W.C., Finite element modeling of failure processes in the skeleton. In: *Computational Mechanics '88* (eds. S.N. Atluri and G. Yagawa) Springer-Verlag, Vol. 2 pp 61, 1988

95. Renshaw, A.A., Lotz, J.C., Cohen, D.B., Edsberg, L.E., and Hayes, W.C.: Apparent Density of Fat in the Proximal Femur: Implications for Assessment of Osteoporosis with Quantitative Computed Tomography, Harvard University Honors Forum, 1988.

Abstracts:

1. Rousseau, M.A., Lotz, J.C., Bertagnoli, R., and Bradford, D.S., Kinetics of constrained vs non-constrained total disc replacement – a cadaveric lumbar spine study. SAS4, Global symposium on intervertebral disc replacement and non-fusion technology, May 2004.
2. Walsh, A., O'Neill, C., and Lotz, J.C., Glucosamine alters production of pro-inflammatory mediators by intervertebral disc cells. 31st Annual Meeting of the International Society for the Study of the Lumbar Spine. May, 2004.
3. Rousseau, M., Bradford, D., Hadi T., Pederson, K., and Lotz, J.C., Total disc replacement alters L5-S1 kinematics while partially unloading the facet joints. 31st Annual Meeting of the International Society for the Study of the Lumbar Spine. May, 2004.
4. Hsieh, A., Hadi, T., and Lotz, J.C., Tension inhibits collagen degradation in annulus fibrosus. 31st Annual Meeting of the International Society for the Study of the Lumbar Spine. May, 2004.
5. Palmer, E., and Lotz, J.C., The time-dependent role of cytokines in mechanically-induced intervertebral disc degeneration. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
6. Hsieh, A., Walsh, A., Cheng, L.Y., and Lotz, J.C., Apoptosis corresponds with disc strain environment during dynamic compression. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
7. Palmer, E., and Lotz, J.C., The structural effects of in vivo mechanical loading in intervertebral disc cells. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
8. Hsieh, A., and Lotz, J.C., Role of annular tension in maintaining lamellar architecture in vivo. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
9. Walsh, A., O'Neill, C., and Lotz, J.C., Glucosamine suppresses cytokine secretion from intervertebral disc cells in vitro. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
10. Ulrich, J., Bass, E., Diederich, C., and Lotz, J.C., In vivo analysis of cell death and denaturation induced by thermal therapy. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
11. Diao, E., Koga, K., Shao, F., and Lotz, J. Flexor tendon repair using the teno fix system, 2-strand and 4-strand sutures in human cadavers: work of flexion, strength and stiffness. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
12. Crevensten, G., Walsh, A., Ananthkrishnan, D., Page, Pl, Wahba, G., Lotz, J.C., and Berven, S., Intervertebral disc cell therapy for regeneration: mesenchymal stem cell implantation in rat intervertebral discs. Fiftieth Annual Meeting of the Orthopaedic Research Society, March, 2004
13. Lotz, J.C., Liu, J., Hu, S.S., Tay, B.K-B., and O'Neill, C., Cytokines in normal, degenerated, and nucleoplasty-treated porcine discs, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
14. Bass, E.J., Wistrom, E.B., Diederich, C.J., Nau, W.H., Pellegrino, R., Ruberti, J., and Lotz, J.C., In situ stresses inhibit thermal denaturation of annulus fibrosus, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
15. Hsieh, A.H., and Lotz, J.C., Time-course regulation of MMP-2 activity in loaded intervertebral discs, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
16. Hsieh, A.H., and Lotz, J.C., Annular stress inhibits collagen degradation in vivo, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003

17. Hsieh, A.H., Walsh, A.J.L., Cheng, L.Y., and Lotz, J.C., Combinations of magnitude and frequency of dynamic compression vary disc strain environment, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
18. Kroeber, M., Unglaub, F., Guehring, T., Hadi, T., and Lotz, J.C., The biomechanical effect of temporary disc distraction on degenerated discs in the lumbar spine: an in vivo study on New Zealand white rabbits, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
19. Palmer, E.I., and Lotz, J.C., The effects of tissue level forces on the cells of the intervertebral disc, Thirtieth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2003
20. Wagner, D.R., Reiser, K.M., and Lotz, J.C., Collagen crosslink density influences annulus fibrosus mechanical properties, Forty-Ninth Annual Meeting of the Orthopaedic Research Society, February, 2003
21. Hsieh, A.H., and Lotz, J.C., Regulation of MMP-2 activity during static compression of intervertebral discs, Forty-Ninth Annual Meeting of the Orthopaedic Research Society, February, 2003
22. Ananthakrishnan, D., Crevensten, G.C., Walsh, A.J.L., Berven, S.H., and Lotz, J.C., Carrier matrix viscosity influences mesenchymal stem cell delivery to the intervertebral disc, Forty-Ninth Annual Meeting of the Orthopaedic Research Society, February, 2003
23. Cheng, K.K., Cheng, L.Y., Robinovitch, S.N., and Lotz, J.C., Joint torque influences torso angle and impact severity during backward falls, Forty-Ninth Annual Meeting of the Orthopaedic Research Society, February, 2003
24. Hsieh, A., Edwards, T., and Lotz, J.C., Spinal bending induces altered annular matrix stress and fluid pressure distribution, Twenty-ninth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2002
25. Walsh, A. and Lotz, J.C., Biologic response of the intervertebral disc to dynamic stress varies with frequency and magnitude, Twenty-ninth Annual Meeting of the International Society for the Study of the Lumbar Spine, May 2002
26. Diao, E. Ishiko, T., Shao, F., Puttlitz, C. and Lotz, J.C., Transection of the transverse carpal ligament affects scaphoid motion. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
27. Puttlitz, C. Deviren, V., Kleinstueck, F., Smith, J., Lotz, J.C., and Hopkins, R. Temporal iatrogenic biomechanical effects of cervical laminoplasty. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
28. Puttlitz, C. Melcher, R., Harms, J., Kleinstueck, F., Bradford, D. and Lotz, J.C., A biomechanical investigation of acute stability afforded by craniovertebral screw constructs. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
29. Walsh, A.J.L. and Lotz, J.C., Single and multiple injections of GDF-5, IGF-1 and TGF- β into degenerated intervertebral discs. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
30. Iverson E.P. and Lotz, J.C., Compressive creep behavior of normal and degenerated discs. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
31. Wagner D.R. and Lotz, J.C., Selection of zero stress state affects nonlinear material response. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002
32. Walsh, A.J.L. and Lotz, J.C., In vivo response of the intervertebral disc to dynamic loading. Forty-Eighth Annual Meeting of the Orthopaedic Research Society, February, 2002

33. Nau WH, Diederich CJ, Kleinstueck F, Lotz J, Bradford D (2001) Evaluation of IDET Intradiscal Thermal Therapy in Cadaveric Lumbar Spine, in session entitled „Physics and engineering in thermal therapy, North American Hyperthermia Annual Meeting, Puerto Rico, April 21-23
34. Kleinstueck, F., Diederich, C., Nau, W., Puttlitz, C., Smith, J., Bradford, D., Lotz, J., Acute biomechanical and histological effects of IDET on human lumbar discs. Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
35. Kleinstueck, F., Diederich, C., Nau, W., Puttlitz, C., Smith, J., Bradford, D., Lotz, J., Temperature and thermal dose distributions during intradiscal electro thermal therapy (IDET), Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
36. Chin, J. and Lotz, J.C., Cell death and matrix gene expression are upregulated in intervertebral discs during recovery from short durations of moderate static compression. Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
37. Wagner, D.R. and Lotz, J.C., A nonlinear anisotropic strain energy function for the annulus fibrosus, Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
38. Walsh, A., Kleinstueck, F., Bradford, D., Lotz, J., Growth factor treatment in degenerated intervertebral discs., Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
39. Whyne, C., Hu, S., and Lotz, J.C., Biomechanical guidelines for burst fracture prediction in the metastatic spine, Forty-Seventh Annual Meeting of the Orthopaedic Research Society, February, 2001
40. Diederich CJ, Nau WH, Kleinstueck F, Lotz J, Bradford D (2001) IDET Therapy in cadaveric lumbar spine:temperature and thermal dose distributions, Thermal treatment of tissue: energy delivery and assessment, SPIE Conference, San Jose, Jan 21-22.
41. Kleinstueck, F., Diderich, C., Nau, W., Puttlitz, C., Smith, J., Bradford, D., Lotz, J., Effects of IDET on human lumbar discs, Temperature and thermal dose distributions, International Society for the Study of the Lumbar Spine, Edinburgh, Scotland, June, 2001.
42. Kleinstueck, F., Diderich, C., Nau, W., Puttlitz, C., Smith, J., Bradford, D., Lotz, J., Effects of IDET on human lumbar discs. Biomechanics and histology, International Society for the Study of the Lumbar Spine, Edinburgh, Scotland, June, 2001.
43. Walsh, A., Bradford, D., Lotz, J., Response of degenerated intervertebral discs to GDF-5, IFG-1, TGF- β treatment, International Society for the Study of the Lumbar Spine, Edinburgh, Scotland, June, 2001.
44. Kleinstueck, F., Diderich, C., Nau, W., Puttlitz, C., Smith, J., Bradford, D., Lotz, J., The IDET Procedure: Temperature distributions and biomechanical effects on human lumbar disc, North American Spine Society, November, 2000.
45. Lotz, J.C., Piziali, R.L., Wachob, H.F., Mechanical properties of the fibrous capsule surrounding silicone breast implants, Sixth World Biomaterials Congress, Hawaii, May 2000
46. Walsh, A., Bradford, D.S., Kleinstueck, F., Spiro, B. and Lotz, J.C., In Situ Growth Factor Stimulation of Degenerated Intervertebral Discs, International Society for the Study of the Lumbar Spine, Adelaide, Australia, April, 2000.
47. Walsh, A., Colliou, O., Hu, S., and Lotz, J.C., An In Vivo Model of Dynamic Loading Induced Intervertebral Disc Degeneration, International Society for the Study of the Lumbar Spine, Adelaide, Australia, April, 2000.
48. Dhillon, N., Bass, E.C., and Lotz, J.C., Frozen Storage Effects on Creep Behavior of Human Intervertebral Discs, International Society for the Study of the Lumbar Spine, Adelaide, Australia, April, 2000.
49. Whyne, C.M., Hu, S.S. and Lotz, J.C., Burst Fracture Risk Assessment in the Metastatically Involved Spine, International Society for the Study of the Lumbar Spine, Adelaide, Australia, April, 2000.

50. Diao, E., Shao, F., Liebenberg, E., Ishiko, T., Rempel, D. and Lotz, J.C., Carpal Tunnel Syndrome – A Dose Response Relationship Between Pressure and Time in an Animal Model, 46th Annual Meeting, Orthopaedic Research Society, March 12-15, Orlando Fl, 2000.
51. Puttlitz, C., Lotz, J.C., Walsh, A., and Helms, J., Distraction Callus Osteogenic Response may be Mediated by Fluid Pressure, 46th Annual Meeting, Orthopaedic Research Society, March 12-15, Orlando Fl, 2000.
52. Dunlop, M.B.V., Newitt, D., Lotz, J.C., Lane, N.E., Majumdar, S., Ritman, E., Both Estrogen and Raloxifene Maintain Trabecular Bone Mass and Bone Strength in Ovariectomized Rats, 46th Annual Meeting, Orthopaedic Research Society, March 12-15, Orlando Fl, 2000.
53. Whyne, C., Hu, S.S. and Lotz, J.C., Mechanical Properties of Metastatic Tumors in Bone, 46th Annual Meeting, Orthopaedic Research Society, March 12-15, Orlando Fl, 2000.
54. Bass E.C., and Lotz, J.C., A Strain Energy Function for the Annulus Fibrosus Specified Using Bi-Axial Experimental Data, BED-Vol 43, Advances in Bioengineering, Winter Meeting, 1999
55. Klisch, S.M. and Lotz, J.C., Material constants for Human Annulus Fibrosus Depend on Water Content and Reference Configuration, BED-Vol 43, Advances in Bioengineering, Winter Meeting, 1999
56. Wagner, D.R., Klisch, S.M., and Lotz, J.C., A Constitutive Formulation which Simultaneously Predicts the Response of the Annulus Fibrosus to Seven Distinct Deformations, Proceedings of the 1999 Bioengineering Conference, BED-Vol. 42 p 363.
57. Lotz, J.C. Chin, J.R., Court, C., Colliou, O.K., Liebenberg, E., The Association Between Tissue Stress and Cell Death in the Intervertebral Disc, International Society for the Study of the Lumbar Spine, Kona, Hawaii, June, 1999.
58. Diao, E., Hida, S., Lotz, J.C., Biomechanical Analysis of 4-Strand Flexor Tendon Repairs, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
59. Diao, E., Hida, S., Dass, R., Yamada. M., Rempel, D.M., Lotz, J.C., Experimental Induction of Carpal Tunnel Syndrome: A New Animal Model, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
60. Chin, J.R., Court, C., Colliou, O.K., Liebenberg, E., Lotz, J.C., Compression-Induced Apoptosis in the Mouse Intervertebral Disc is Time and Stress Dependent, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
61. Rhee, J.M., Tay, B., Lotz, J.C., Jo, S.H., Bradford, D.S., Gould, S.E., Two Potential Processes Mediating bone Formation During Distraction Osteogenesis, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
62. Lane, N.E., Haupt, D., Lotz, J., Modin, G., Kinney, H., Long-term Estrogen Replacement Maintains Trabecular Bone Strength by Altering Trabecular Architecture: A Hypothesis to Support the Anti-Fracture Efficacy of Anti-Resorptive Agents, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
63. Kroeber, M.W., Court, C., Liebenberg, E., Chin, J.R., Diederich, C.J, Rhee, J., Bradford, D.S., Lotz, J.C., Effects of Low Intensity Pulsed Ultrasound on Apoptosis and Cell Proliferation in Normal and compressed Mouse Intervertebral Discs, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
64. Court, C., Colliou, O.K., Chin, J.R., Leibenberg, E., Bradford, D., Lotz, J.C., Excessive Bending of the Disc Induces Asymmetric Degeneration, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
65. Bass, E.C., Lotz, J.C., Biaxial Behavior of the Annulus Fibrosus in Tension, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.
66. Colliou, O.K., Lotz, J.C., Compressive Mechanical Behavior of the Intervertebral Disc is Affected by In Vivo Static Compression, Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February, 1999.

67. Colliou, O.K. and Lotz, J.C., Bending Mechanical Performance of the Intervertebral Disc is Affected by in vivo Compressive Loading, ASME Winter Annual Meeting, November 1998, BED-Vol. 39
68. Duncan, N.A., Colliou, O.K., and Lotz, J.C., Development and Validation of a Porohyperelastic Finite Element Model of a Mouse Tail Disc to Investigate Tissue Remodeling, ASME Winter Annual Meeting, November 1998, BED-Vol. 39
69. Klisch, S.M. and Lotz, J.C., Application of a Fiber-Reinforced Continuum Theory to Multiple Deformations of the Annulus Fibrosus, ASME Winter Annual Meeting, November 1998, BED-Vol. 39
70. Klisch, S.M. and Lotz, J.C., Application of a Special Theory of Biphasic Mixtures to Annulus Fibrosus, ASME Winter Annual Meeting, November 1998, BED-Vol. 39
71. Lotz, J.C., Colliou, O.K., Chin, J.R., Duncan, N.A., and Liebenberg E., Compression-Induced Degeneration of the Intervertebral Disc: An In Vivo Mouse Model and Finite Element Study, Volvo Award for Low Back Pain Research, International Society for the Study of the Lumbar Spine, Brussels, Belgium, July, 1998.
72. Whyne, C.M., Hu, S.S., Lotz, J.C., The Effect of Tumor Size, Material Properties and Loading Rate on the Compressive Response of Metastatically Involved Vertebral Bodies. 25th Annual Meeting of the International Society for the Study of the Lumbar Spine, Brussels, Belgium, June 1998
73. Whyne, C.M., Hu, S.S. and Lotz, J.C., Vertebral Body Modeling: the Effects of Poroelasticity and Loading Rate, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
74. Klisch, S.M. and Lotz, J.C., A Fiber-Reinforced Continuum Theory and Constitutive Equation for the Annulus Fibrosus, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
75. Kroeber, M.W., Duncan, N.A., Heilmann, M.R., and Lotz, J.C., Radial Tensile Properties of the Annulus Fibrosus Vary Through its Height, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
76. Chiu, E.J., Newitt, D.C., Segal, M.R., Alini, M., Antoniou, J., Hu, S.S., Lotz, J.C., and Majumdar, S., Correlation of Biochemical and MR Parameters in the Lumbar Intervertebral Disc - in vitro, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
77. Tay, B.K-B., Le, A.X., Heilman, M., Lotz, J. and Bradford, D.S., Use of a Collagen Hydroxyapatite Matrix in Spinal Fusion: a Rabbit Model, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
78. Whyne, C.M., Hu, S.S. and Lotz, J.C., Poroelastic Finite Element Modeling of Metastatically Involved Vertebral Bodies, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
79. Carter, D.R., Helms, J.A., Tay, B.K., Lotz, J.C. and Beaupre, G.S., Stress and Strain Distributions Predict Tissue Differentiation Patterns in Distraction Osteogenesis, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
80. Le, A.X., Iwasaki, M., Filveroff, E.H., Heilmann, M.R., Lotz, J.C., Derynck, R.M. and Helms, J.A., Interruption of Tgf- Signaling in Osteoblasts Does Not Impair Fracture Healing, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
81. Colliou, O.K., Chin, J.R., Liebenberg, E.C., and Lotz, J.C., Matrix Disorganization, Apoptosis and Gene Expression in the Intervertebral Disc are Modulated by Compressive Loading: A Mouse Model for Disc Degeneration, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
82. Kroeber, M.W., Lotz, J.C., Heilmann, M., and Lane N.E., Estrogen Treatment Increases the Strength in Osteoporotic Rat Bones, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.

83. Diao, E., Hida, S.I., Lotz, J.C., Comparative Mechanical Evaluation of the Double Modified Kessler Core Suture for Tendon Repair, Forty-Fourth Annual Meeting of the Orthopaedic Research Society, March, 1998.
84. Tay, B. K-B., Lotz, J.C., and Bradford, D.S., Use of a Collagen Hydroxyapatite matrix in Spinal Fusion: A Rabbit Model, Scoliosis Research Society Annual Meeting, September, 1997
85. Colliou, O.K., Liebenbert, E.,M., Duncan, N.A. and Lotz, J.C., Compression-Induced Intervertebral Disc Degeneration in a Mouse Model, Winter Annual Meeting of the American Association of Mechanical Engineers, November, 1997.
86. Duncan, N.A., Ashford, F.A. and Lotz, J.C., Experimental Validation of Poroelastic Finite Element Predictions for the Fluid Pressure and Solid Stress in the Annulus Fibrosus. ASME Summer Bioengineering Conference, 1997
87. Klisch, S.M. and Lotz, J.C., Deriving Constitutive Equations for a Simple Incompressible Mixture of an Elastic Solid and an Inviscid Fluid, ASME Summer Bioengineering Conference, 1997
88. Colliou, O.K., Chiu, E. and Lotz, J.C., Effects of Cyclic Loading on Fluid Flow in the Intervertebral Disc, 24th Annual Meeting of the International Society for the Study of the Lumbar Spine, Singapore, June 1997
89. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford, D.S., Use of Electromagnetic Fields in a Spinal Fusion: A Rabbit Model, 24th Annual Meeting of the International Society for the Study of the Lumbar Spine, Singapore, June 1997
90. Duncan, N.A. and Lotz, J.C., Experimental Validation of a Poroelastic Finite Element Model of the Annulus Fibrosus. Third International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Barcelona, May 1997
91. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford, D.S., Use of Ultrasound in Spinal Fusion: A Rabbit Model, 110th Annual Meeting of The American Orthopaedic Association, Boca Raton Florida, June 1997
92. Chiu, E.J., Newitt, D.C., Hu, S.S., Lotz, J.C. and Majumdar, S., Correlation of MR-Derived Diffusion Coefficients and Relaxation Times with Intervertebral Disc Tissue Hydration in Vitro, ISMRM, April, 1997.
93. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford, D.S., Use of Ultrasound in Spinal Fusion: A Rabbit Model, 110th Annual Meeting of The American Orthopaedic Association, Boca Raton Florida, June 1997
94. Lotz, J.C., Heilmann, M., Pericherla, K., Kimmel, D., Kinney, J.H., Lane, N.E., Tibial Plateau Fracture is a Sensitive Measure of Estrogen-Dependent Bone Fragility in Rats. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
95. Spiro, R.C., Pacetti, S., Thompson, A., Lotz, J.C., Aufdemorte, T., Poser, J.W., Evaluation of a New Mineralized Collagen Bone Grafting Matrix in a Long Bone Critical Defect Model. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
96. Colliou, O.K., Lotz, J.C., Mathews, C.H.E., Glazer, P.A., Kapila, S., Static Mechanical Loading Modulates Collagenase Expression in Rabbit Annulus Fibrosus. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
97. Duncan, N.A., Ashford, F.A., Lotz, J.C., Fluid Pressure in the Annulus Fibrosus Subjected to Axial Compression at Varied Strain Rates: Experiment and Poroelastic Finite Element Predictions. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
98. Glazer, P.A., Heilmann, M.R., Lotz, J.C., Bradford, D.S., Use of Electromagnetic Fields in a Spinal Fusion: A Rabbit Model. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
99. Chiu, E.J., Newitt, D.C., Hu, S.S., Lotz, J.C., Majumdar, S., Correlation of Intervertebral Disc Hydration with MR-Derived Diffusion Coefficients and Relaxation Times. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.

100. Majumdar, S., Newitt, D.C., Link, T.M., Augat, P., Lin, J.C., Ouyang, X., Lang, T., Lotz, J. Genant, H.K., Three Dimensional Assessment of Trabecular Architecture Using Magnetic Resonance Imaging. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
101. Ouyang, S., Majumdar, S., Link, T.M., Augat, P., Lu, Y., Lin, J.C., Lang, T., Lotz, J.C., Newitt, D., Genant, H.K., Radiographic Assessment of Trabecular Structure: Correlation with Biomechanical Strength and Comparison with BMD. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
102. Chiu, E.J., Newitt, D.C., Hu, S.S., Lotz, J.C., Majumdar, S., MRI Measurement of Water Diffusion in the Human Intervertebral Disc with Compression. 43rd Annual Meeting, Orthopaedic Research Society, Feb. 1997.
103. Iida, H., Lotz, J.C., Diao, E., Proximal Migration After Basal Joint Reconstruction: A Biomechanical Study. 14th Annual Residents and Fellows Conference, American Society for Surgery of the Hand, Nashville, 1996
104. Hariharan, J.C., Lotz, J.C., Diao, E., Dynamic Analysis of Load Sharing in a Multi-component Tendon Repair. 14th Annual Residents and Fellows Conference, American Society for Surgery of the Hand, Nashville, 1996
105. Diao, E., Lotz, J.C., Hariharan, J.S., Comparison of Single versus Double Loop Core Suture Techniques for Flexor Tendon Repair. 51st Annual Meeting, American Society for Surgery of the Hand, Nashville, 1996
106. Hariharan, J.S., Lotz, J.C., Diao, E., Does Core Suture Strength Affect the Overall Strength of Multi-component Tendon Repairs?, 51st Annual Meeting, American Society for Surgery of the Hand, Nashville, 1996
107. Diao, E., Iida, H., Lotz, J.C., Proximal Migration after Basal Joint Reconstruction - A Biomechanical Study. 51st Annual Meeting, American Society for Surgery of the Hand, Nashville, 1996
108. Iida, H., Diao, E., Lotz, J.C., Segmental Ulnar Nerve Gliding and Stretching at the Cubital Tunnel with Elbow Motion: A Cadaver Study. 51st Annual Meeting, American Society for Surgery of the Hand, Nashville, 1996
109. Duncan, N.A., Lotz, J.C., The Effect of Strain Rate on the Axial Stress-Strain Response of the Human Annulus Fibrosus in Tension and Compression: Experiment and Poroelastic Finite Element Predictions. ASME Winter Annual Meeting, November, 1996
110. Bass, E.C., Duncan, N.A., and Lotz, J.C., The Compressive Creep Behavior of the Porcine Intervertebral Disc is Affected by Frozen Storage, ASME Winter Annual Meeting, November, 1996
111. Klisch, S.M., Duncan, N.A., Keaveny, T.M., and Lotz, J.C., The Relative Effects of Disc Water Content and Bone Modulus on Vertebral Body Stresses, 23rd Annual Meeting of the International Society for the Study of the Lumbar Spine, Vermont, June 1996
112. Duncan, N.A., Leibenberg, E., Mathews, C.H.E., and Lotz, J.C., The Distribution of Mechanical Stress and Cellular Phenotype are Correlated in the Lumbar Disc, 23rd Annual Meeting of the International Society for the Study of the Lumbar Spine, Vermont, June 1996
113. Glazer, P.A., Colliou, O., Klisch, S.M., Bradford, D.S., Bueff, H.U., and Lotz, J.C., Biomechanical Analysis of Multi-level Interbody Fixation Devices in the Lumbar Spine, 23rd Annual Meeting of the International Society for the Study of the Lumbar Spine, Vermont, June 1996
114. Whyne, C., Hu, S., Klisch, S., and Lotz, J.C., Effect of the Pedicle on Vertebral Body Strength Predictions in Finite Element Modeling. 23rd Annual Meeting of the International Society for the Study of the Lumbar Spine, Vermont, June 1996
115. Glazer, P.A., Heilmann, M.R., Lotz, J.C. and Bradford, D.S. Use of Pulsed Electromagnetic Fields in Spinal Fusion: A Rabbit Model. 17th Annual Verne T. Inman Lectureship, San Francisco, May, 1996

116. Chiu, E., Lotz, J.C., and Majumdar, S., High Resolution and Diffusion Weighted MRI to study the Human Intervertebral Disc in vitro. 17th Annual Verne T. Inman Lectureship, San Francisco, May, 1996
117. Glazer, P.A., Bueff, H.U., Klisch, S. Colliou, O., Lotz, J.C., and Bradford, D.S., Multilevel Fixation Methods in the Lumbar Spine. 17th Annual Verne T. Inman Lectureship, San Francisco, May, 1996
118. Iida, H., Diao, E., and Lotz, J.C., Segmental Ulnar Nerve Gliding and Stretching at the Cubital Tunnel with Elbow Motion. 17th Annual Verne T. Inman Lectureship, San Francisco, May, 1996
119. Chiu EJ, Lotz JC, Majumdar S: Diffusion Tensor Imaging Applied to the Human Intervertebral Disc In Vitro, The International Society for Magnetic Resonance in Medicine, New York, New York, April 1996.
120. Duncan, N.A., Lotz, J.C., Finite Element Modeling of the Annulus Fibrosus using the Poroelastic Formulations of ABAQUS, 4th Annual Pre-ORS Computational Biomechanics Symposium, February, 1996.
121. Fujita, Y., Duncan, N.A., Lotz, J.C., Anisotropic Shear Behavior of the Annulus Fibrosus: Effect of Harvest Site and Tissue Prestrain. 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
122. Hariharan, J.S., Lotz, J.C., Diao, E., The Effect of Increased Core Suture Strength on Overall Tendon Repair Strength. 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
123. Soejima, O., Diao, E., Lotz, J.C., Hariharan, J.S., Iida, H., Ogata, K., Dorsa.-Volar Regional Material Properties' Variations of the Adult Human Flexor Digitorum Profundus Tendon in Zone II., 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
124. Duncan, H.A., Lotz, J.C., Intervertebral Disc Degeneration May be a Remodeling Response to Altered Mechanical Loading., 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
125. Bass, E.C., Duncan, N.A., Hariharan, J.S., Lotz, J.C., The Effects of Freezing on the Compressive Creep Behavior of the Intervertebral Disc, 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
126. Majumdar, S., Newitt, D.C., Truong, V., Jergas, M., Grampp, S.D., Gies, A.A., Lotz, J., Genant, H.K., Magnetic Resonance Imaging of Trabecular Bone Structure: in Vitro and in Vivo Studies. 42nd Annual Meeting, Orthopaedic Research Society, February, 1996.
127. Duncan, N.A., Bass, E.C., Lotz, J.C., The Nonlinear Load-Displacement Response of the Human Annulus Fibrosus in Axial Tension and Compression: Finite Element Predictions. ASME Winter Annual Meeting, San Francisco, November, 1995
128. Duncan, N.A., Bass, E.C., Lotz, J.C., A Fiber-Reinforced Multi-Shell Composite Finite Element Model of the Human Annulus Fibrosus. ASME Winter Annual Meeting, San Francisco, November, 1995
129. Lotz, J.C. Gryler, E.C., Glazer, P., Tensile Properties of the Human Vertebral End-plate. 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
130. Glazer, P.A., Colliou, O., Lotz, J.C. and Bradford, D.S., The Management of Complex Spinal Deformities Requiring Fusion of the Lumbosacral Junction: Biomechanical Considerations. 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
131. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., Tensile Properties of Incomplete Lacerations of the Human Digital Flexor Tendon, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
132. Fujita, Y., Lotz, J.C., Duncan, N.A., Site and Grade Specific Nonlinear Tensile Properties of the Lumbar Annulus Fibrosus, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego

133. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., An Analytical Model to Predict the Strength of Tendon Repairs, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
134. Bueff, H.U., Lotz, J.C., Colliou, O., Khapchik, V., Ashford, F., Hu, S.S., Bradford, D.S., Instrumentation of the Cervico-Thoracic Junction after Destabilization, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
135. Lotz, J.C., Hu, S.S., Chiu, F.M., Glazer, P., Poser, R.D., Constantz, B.R., In Situ-setting Hydroxyapatite Augmentation of Pedicle Screw Fixation in the Lumbar Spine: A Cyclic Study, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
136. Soejima, O., Diao, E., Lotz, J.C., Hariharan, J.S., Comparative Mechanical Analysis of Dorsal vs. Volar Side Human Flexor Digitorum Tendon Repairs and Related Tendons Structural Differences, 2nd Meeting of the Combined Orthopaedic Research Societies, November 1995, San Diego
137. Glazer, P.A., Colliou, O., Lotz, J.C. and Bradford, D.S., Biomechanical Considerations for Fusion of the Lumbosacral Junction. Scoliosis Research Society, 30th Annual Meeting, September, 1995
138. Glazer, P.A., Colliou, O., Lotz, J.C. and Bradford, D.S., The Management of Complex Spinal Deformities Requiring Fusion of the Lumbosacral Junction. Scoliosis Research Society, 30th Annual Meeting, September, 1995
139. Hu, S.S., Lotz, J.C., Chiu, D.F.M., Glazer, P.A., Bueff, H.U., Pedicle Screw Fixation in the Lumbar Spine: Augmentation with Carbonated Apatite. Scoliosis Research Society, 30th Annual Meeting, September, 1995
140. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., Tensile Properties of Incomplete Lacerations of the Human Digital Flexor Tendon, 50th Annual Meeting of the American Society for Surgery of the Hand, San Francisco, September, 1995.
141. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., Comparative Mechanical Analysis of Dorsal vs. Volar Side Human Flexor Digitorum Profundus Tendon Repairs and Related Tendon Structural Differences, 50th Annual Meeting of the American Society for Surgery of the Hand, San Francisco, September, 1995.
142. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., An Analytical Model to Predict the Strength of Tendon Repairs, 50th Annual Meeting of the American Society for Surgery of the Hand, San Francisco, September, 1995.
143. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., Site Specific Material Properties of the Human Flexor Tendon in Zone II, 50th Annual Meeting of the American Society for Surgery of the Hand, San Francisco, September, 1995.
144. Chiu E, Lotz J, Majumdar S: Characterization of the Human Intervertebral Disc with High Resolution and Diffusion Weighted Magnetic Resonance Imaging, The Society of Magnetic Resonance , Nice , France, August 1995.
145. Lotz, J.C., Gryler, E.C., Tensile Properties of the Human Vertebral End-plate. 22nd Annual Meeting, International Society for the Study of the Lumbar Spine, Helsinki Finland, June, 1995
146. Lotz, J.C., Hu, S., Chiu, D.F.M., Glazer, P.A., Poser, R.D., Constantz, B.R., In situ Setting Hydroxyapatite Augmentation of Pedicle Screw Fixation in the Lumbar Spine: A Cyclic Study. 22nd Annual Meeting, International Society for the Study of the Lumbar Spine, Helsinki Finland, June, 1995
147. Fujita, Y., Lotz, J.C., Duncan, N.A., Nonlinear Radial Tensile Properties of the Annulus Fibrosus: Effect of Disc Grade and Site. 16th Annual Verne T. Inman Lectureship, San Francisco, May, 1995
148. Glazer, P.A., Colliou, O., Lotz, J.C., and Bradford, D.S., The Management of Complex Spinal Deformities Requiring Fusion of the Lumbosacral Junction: Biomechanical Considerations. 16th Annual Verne T. Inman Lectureship, San Francisco, May, 1995

149. Hariharan, J.S., Lotz, J.C., Diao, E. and Soejima, O., Predicting Tendon Repair Strength Using a Spring Model. 16th Annual Verne T. Inman Lectureship, San Francisco, May, 1995
150. Bueff, H.U., Lotz, J.C., Colliou, O., Khapchik, V., and Ashford, F., Instrumentation of the Cervico-Thoracic Junction after Destabilization. 30th Annual Scientific Program of the LeRoy C. Abbott Orthopaedic Society, San Francisco, May, 1995.
151. Lotz, J.C., Fujita, Y., Site Specific Radial Tensile Properties of the Lumbar Annulus Fibrosus. 41th Proceedings of the Orthopaedic Research Society, New Orleans, February, 1995.
152. Gies, A.A. Majumdar, S. Kinney, J.H. and Lotz, J.C., Mean Intercept Length from Power Spectrum Related to Mechanical Test. 41th Proceedings of the Orthopaedic Research Society, New Orleans, February, 1995
153. Chiu, E.J., Lotz, J.C., Majumdar, S., High Resolution Magnetic Resonance Imaging of the Human Intervertebral Disc with Compression. 41th Proceedings of the Orthopaedic Research Society, New Orleans, February, 1995
154. Diao, E., Lotz, J.C., Soejima, O., Partial Lacerations of the Human Flexor Tendon - A Biomechanical Study. 62nd Annual Meeting of the American Academy of Orthopaedic Surgeons. February 16-20, 1995
155. Fujita, Y., Lotz, J.C., Soejima, O., Radial Tensile Properties of the Lumbar Annulus Fibrosus, 62nd Annual Meeting of the American Academy of Orthopaedic Surgeons. February 16-20, 1995
156. Soejima, O., Diao, E., Lotz, J.C., Hariharan, J.S., Dorsal versus Volar Core Suture Repair of Flexor Tendons: A Biomechanical and Structural Study., 62nd Annual Meeting of the American Academy of Orthopaedic Surgeons. February 16-20, 1995
157. Diao, E., Hariharan, J., Lotz, J.C., Soejima, O., Deep versus Superficial Epitendinous Sutures: A Biomechanical Study. 62nd Annual Meeting of the American Academy of Orthopaedic Surgeons. February 16-20, 1995
158. Lotz, J.C., Fujita, Y., and Soejima, O., Radial Tensile Properties of the Lumbar Annulus Fibrosus. 18th Annual Meeting of the American Society of Biomechanics, Ohio State University, October, 1994.
159. Lotz, J.C. and Ashford, F.A.: Non-linear Mechanical Behavior of the Annulus Fibrosus in Tension and Compression. Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 1994
160. Bueff, H.U., Lotz, J.C., Colliou, O., Khapchik, V., Instrumentation of the Cervico-thoracic Junction After Stabilization. 9th Annual Meeting of the North American Spine Society. October 19-22, 1994.
161. Klassen, M.G., Johnston, J.O., and Lotz, J.C.: Strength of Autoclaved Cortical Bone in Humans. 40th Proceedings of the Orthopaedic Research Society, New Orleans, February, 1994.
162. Soejima, O., Diao, E., Lotz, J.C. and Hariharan, J.S., Comparative mechanical Analysis of Dorsal vs. Volar Side Tendon Repairs. 49th Annual Meeting of the American Society for Surgery of the Hand., October 26-29, 1994.
163. Soejima, O., Diao, E., Lotz, J.C., and Hariharan, J.S., The Effect of Core Suture Placement on Flexor Digitorum Profundus Tendon Repairs - An in Vitro Biomechanical Study. 12th Annual Residents and Fellows Conference, American Society for Surgery of the Hand, Cincinnati, Ohio, October, 1994.
164. Hariharan, J.D., Diao, E., and Lotz, J.C. Biomechanical Analysis of Partial Tendon Lacerations. 12th Annual Residents and Fellows Conference, American Society for Surgery of the Hand, Cincinnati, Ohio, October, 1994.
165. Soejima, O., Diao, E., Lotz, J.C. and Hariharan, J.S., Tensile Strengths Analysis of Dorsal vs. Volar Side Flexor Tendon Repairs, 29th Annual Meeting of LeRoy C. Abbot Orthopaedic Society, San Francisco, May 1994.

166. Diao, E., Hariharan, J.S., Lotz, J.C. and Soejima, O., Relative Tensile Strength of Deep and Superficial Epitendinous Suture, 29th Annual Meeting of LeRoy C. Abbot Orthopaedic Society, San Francisco, May 1994.
167. Hariharan, J.S., Diao, E., Lotz, J.C. and Soejima, O., Biomechanical Analysis of Partial Tendon Laceration. 29th Annual Meeting of LeRoy C. Abbot Orthopaedic Society, San Francisco, May 1994.
168. Diao, E., Hariharan, J.S., Lotz, J.C. and Soejima, O., Relative Tensile Strength of Deep and Superficial Epitendinous Suture. Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 1994
169. Yu, M.M-H., Skinner, H.B., and Lotz, J.C.: Plastic-Metal Interface Conditions Affect Polyethylene Performance in TKA. Second World Congress of Biomechanics, Amsterdam, The Netherlands, July 1994
170. Yu M.M-H., Skinner, H.B., Lotz, J.C.: Effect of Screw Holes on Polyethylene Performance in Metal Backed Total Knee Prostheses. 20th Annual Meeting of the Society for Biomaterials, Boston, April, 1994
171. Lotz, J.C. and Hayes, W.C.: Biomechanical Estimates of Hip Fracture Risk Using Quantitative Computed Tomography, Steenbock Symposium on Osteoporosis, June, 1989.
172. Lotz, J.C., Hayes, W.C., and Gerhart, T.N.: The Structural Contribution of Cortical and Trabecular Bone in the Femoral Neck: 34th Proceedings of the Orthopaedic Research Society, Atlanta, February, 1988
173. Cheal, E.J., Lotz, J.C., Edwards, W.T., Knopf, K.B., and Hayes, W.C.: Finite Element Modeling of Failure Processes in the Skeleton, International Conference on Computational Engineering Science, Atlanta, 1988
174. Lotz, J.C., Hayes, W.C., and Gerhart, T.N.: Hip Fracture Risk During Gait, American Society of Mechanical Engineers, Advances in Bioengineering, 1987
175. Lotz, J.C. and Hayes, W.C.: Stress Distribution Within the Proximal Femur During Gait and Falls, Harvard/MIT Division of Health Science and Technology Forum, Cambridge, MA: MIT Press. 1987
176. Esses, S.I., Lotz, J.C., and Hayes, W.C.: Radiographic Analysis of Neoplastic Fractures, 32nd Proceedings of the Orthopaedic Research Society, New Orleans, February, 1986.

Invited Presentations:

1. Lotz, J.C., Intervertebral Disc Degeneration and Regeneration. Neurosurgery Grand Rounds, January 13, 2005
2. Lotz, J.C., Disc Biology, 2nd Trans Atlantic Spine Congress, 'Innovations in Spine Surgery,' Dallas, November 2004.
3. Lotz, J.C., Role of mechanics in disc degeneration and repair/replacement, 5th Combined Meeting of the ORS societies of USA, Canada, Japan and Europe, Banff, Canada, October 2004
4. Lotz, J.C., Mechanical regulation of intervertebral disc degeneration and regeneration, SAS 4, Vienna, Austria, May 2004.
5. Lotz, J.C., Animal models of intervertebral disc degeneration. Spine Focus Meeting, Chicago, April 2004.
6. Lotz, J.C., Hsieh, A, and Bradford. D.S., Mechanical regulation of intervertebral disc degeneration and regeneration, SAS4, Global symposium on intervertebral disc replacement and non-fusion technology, May 2004.
7. Lotz, J.C., Mechanobiology of intervertebral disc degeneration. California Physical Therapy Association Chapter Annual Conference, November 2003.
8. Lotz, J.C., Tissue engineering the intervertebral disc, 2nd Annual California Tissue Engineering Meeting, San Diego, September, 2003.

9. Lotz, J.C., Inflammation and the disc, Spinal Diagnostics and Treatment Meeting, San Francisco, July, 2003.
10. Lotz, J.C., and Bradford, D.S., The importance of annular tension in disc repair, The third annual meeting of the Spine Arthroplasty Society, May, 2003
11. Rousseau, M-A., Bradford, D.S., and Lotz, J.C., Comparative biomechanics of arthroplasty, The third annual meeting of the Spine Arthroplasty Society, May, 2003
12. Lotz, J.C., Biologic Disc Replacement, The third annual meeting of the Spine Arthroplasty Society, May, 2003
13. Biomechanical Factors in Disc Degeneration, Biochemical Society, Cardiff England, July 18, 2002
14. The Influence of Mechanical Factors on Intervertebral Disc Degeneration, World Conference on Biomechanics, Calgary, August 5, 2002
15. Mechanical Regulation of Disc Degeneration, Gordon Research Conference, July 28, 2002
16. The Biomechanics of Disc Degeneration, Stanford Biomedical Engineering Seminar Series, May 7, 2001
17. Spinal Compression and Disc Degeneration, SYNOS International Symposium on Disc Degeneration, January 18-19, 2001, Berne Switzerland.
18. Oh, My Aching Back, UCSF/Mt. Zion Brown Bag Series, 11/00
19. Biomechanical and Biological Interactions within the Intervertebral Disc, Orthopaedic Research Day, VA Palo Health Care System Orthopaedics/Stanford University Orthopaedics, December 9, 2000.
20. The Biology of Disc Degeneration, Eighth Annual Meeting of the International Spinal Injection Society, September 9, 2000
21. An Animal Model for Occupational Exposure and Disc Disease, UCSF Occupational Medicine Research Seminar, July 27, 2000
22. Biomechanics and Intervertebral Disc Degeneration, AOS, ABC Exchange Fellowship, San Francisco 2000 Tour, May 24, 2000
23. Spinal Disc Physiology, Basic Science Lectures, Department of Neurosurgery, UCSF, January 27, 2000.
24. Bi-axial testing of annulus fibrosus - implications for constitutive models, Department of Bioengineering, University of California, San Diego, Nov. 22, 1999
25. Relationship between tissue stress and degeneration in the intervertebral disc, Department of Orthopaedic Surgery, University of California, San Diego, Nov. 22, 1999
26. Mechanical Loading and Intervertebral Disc Degeneration, American Orthopaedic Association North American Traveling Fellowship 1999 Tour, San Francisco, October 18, 1999.
27. The influence of tissue stress on cell activity within the intervertebral disc, International Society of Biomechanics, Calgary August 13, 1999
28. Mechanical Stress and Cell Function, Endocrine Grand Rounds, UCSF, October 14, 1998
29. Mechanisms of Intervertebral Disc Degeneration, Proctor and Gamble's Exploratory Research Program, March 26, 1998.
30. Mouse Model for Compression Induced Disc Degeneration, Pre-ORS Intervertebral Disc Repair Think Tank, March 15, 1998.
31. Remodeling of Disc and Soft Tissues in the Spine, 20th Annual Engineering Industrial Liaison Conference, University of California at Berkeley, March 11, 1998.
32. Mouse Model for Intervertebral Disc Degeneration, Department of Pharmacology, November, 1997
33. Your Aching Back: Biomechanics of Intervertebral Disc Degeneration, IDS 114A, UC Berkeley, October 6, 1997
34. Distraction Osteogenesis: A Model for Studying the Molecular Basis of Bone Formation in Response to Biomechanical Forces, Grand Rounds, Department of Orthopaedic Surgery, UCSF, December 18, 1996. With Bobby Tay and Jill Helms.

35. Poroelastic Analysis of Annulus Fibrosus: Analytical and Experimental Correlations, BE281, Seminars in the Department of Bioengineering, UCSD, November 1, 1996.
36. Biomechanics of Femoral Prostheses. Portland Bone Symposium. Portland OR, August, 1995
37. A New Liquid Artificial Bone, 1995 Summer Meeting of the Hip Society, June, 27, 1995, San Francisco
38. Biomechanics of the Intervertebral Disc: Normal versus Disease. American Academy of Orthopaedic Surgeons, Debating Complex Issues in Spine Surgery, San Francisco, CA, April 5, 1995
39. Lumbar Spinal Instability: Fact or Fiction? A Bioengineer's Perspective. American Academy of Orthopaedic Surgeons, Debating Complex Issues in Spine Surgery, San Francisco, CA, April 6, 1995
40. The Annulus Fibrosus, the Biologic Fiber Composite. UC Berkeley Bioengineering Seminar, March 7, 1995
41. Engineering Aspects of Tissue Remodeling, San Francisco Bone and Mineral Club Seminar Series, June, 7, 1994
42. Biomechanics of the Intervertebral Disc, ABC Exchange Traveling Fellows 1994 Tour, UCSF, June, 1994
43. Biomechanics of the Intervertebral Disc, Stanford University Bioengineering Seminar, November 29, 1993
44. Degeneration of the Intervertebral Disc, UCSF Spine Rounds, November, 17, 1993
45. Long Bone Fracture Patterns, UCSF Orthopaedic Surgery Rounds, October, 23, 1993
46. Evaluation of Back, Shoulder and Knee Injuries. Fifteenth Annual Meeting of the American Association of Railroads General Claims Conference, Chicago, Illinois, September, 1992.
47. The Biomechanics of Lower Extremity Snow Ski Injuries, Ninth International Symposium on Ski Trauma and Skiing Safety, Australia, June 1991.
48. The Mechanics of Back Injuries, Spring Meeting of the National Association of Railroad Trial Counsel, Pebble Beach, CA, May 1992.
49. Moments and Forces at the Proximal Femur, SOF Pelvic Film Seminar, University of California at San Francisco, July, 1991.
50. Biomechanics of Long Bone Fracture Patterns, Stanford University Bioengineering Seminar, February, 1991
51. Biomechanics and Forensic Engineering, Stanford University Bioengineering Seminar, May, 1990
52. The Effectiveness of Seat Belts in Reducing Injuries: Bioengineering Considerations.: Arizona Trial Lawyers Association Meeting, January, 1989
53. Biomechanics of Hip Fractures, 32nd STAPP Car Crash Conference, Atlanta Georgia, October 1988.
54. Hip Fracture Risk Predictions by X-ray Computed Tomography, Ph.D. Dissertation Defense, MIT, July, 1988
55. Load and Stress Distribution Within the Proximal Femur During Gait and Falls, 1st Annual Health, Science and Technology Forum, MIT, 1987
56. Medical Ultrasound - Good Vibrations, American Society of Mechanical Engineers Winter Annual Meeting, November, 1982.