APPLIED BIOMECHANICS

Curriculum Vitae

Brian J. Doherty, Ph.D.

Summary

Biomedical Engineer, specializing in biomechanics, impact injury and human tolerance, accident reconstruction and mechanical engineering. Experienced in head and spine injuries, implanted orthopedic devices, and bioengineering. Specific expertise in mechanical response to injury and traumatic failure of the cervical and lumbar spine.

Education

Ph.D., Biomedical Engineering, Duke University, Durham, North Carolina, 1990

M.S., Biomedical Engineering, Duke University, Durham, North Carolina, 1986

B.S.E., Bioengineering, with a concentration in Mechanical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania, 1984

Professional Experience

- Senior Engineer
  Applied BioMechanics, Alameda, California, 1999 – present
- Senior Biomechanical Engineer
  FTI / Anamet, Hayward, California, 1994 – 1999
- Mathematical Statistician
  VA Hospital, Palo Alto, California, 1994 – present
- Assistant Professor
  Department of Biomedical Engineering, University of Northern California, Petaluma, California, 1995 – present
- Research Bioengineer/Research Assistant Professor
  Department of Orthopedic Surgery, Baylor College of Medicine, Houston, Texas, 1990 – 1995
- Research Bioengineer
  The Methodist Hospital, Houston, Texas, 1990 – 1993

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- Research Assistant
  Duke University, Durham, North Carolina, 1984 – 1990
- Graduate Research Fellow
  Armstrong Aerospace Medical Research Laboratory, Modeling Division, Wright-Patterson Air Force Base, Ohio, Summer 1986
- Research Assistant
  University of Pennsylvania, Philadelphia, PA, 1983 – 1984

Professional Honors

Best Paper, Annual Meeting of the Orthopedic Trauma Association, 1992

Research Prize, 19th Annual meeting of the Cervical Spine Research Society, 1991

Siegel Research Award, 35th Stapp Car Crash Conference, 1991

Siegel Research Award, 32nd Stapp Car Crash Conference, 1988

U.S. Air Force Summer Research Fellowship, 1986

Duke University Research Fellowship, 1984 – 1990

National Merit Scholarship, 1980 – 1984

Professional Associations and Activities

Society of Automotive Engineers

IEEE/Engineering in Medicine and Biology Society

Cervical Spine Research Society

Selected Publications

Curylo L., Lindsey, R.W., Doherty, B.J. LeBlanc A. "Segmental Variations of Bone Mineral Density in the Cervical Spine." *Spine* 1996 Feb 1;21(3):319-22.

Smith, S.A., Lindsey, R.W., Doherty, B.J. and Dickson, J.H. "An In Vitro Biomechanical Comparison of the Orosco and Cervical Spine Locking Plate." *J. Spinal Disorders*, Vol. 8, No. 3, pp 220-223, 1995.

Lindsey, R.W., Fenison, A.T., Doherty, B.J., Law, P. and LeBlanc, A. "Effects of Retained Diaphyseal Plates on Forearm Bone Density and Grip Strength." *Journal of Orthopedic Trauma*, Vol. 8, No. 6, pp 462-467, 1994.

Lindsey, R.W., Diliberti, T., Doherty, B.J., and Watson, A.B. Efficacy of Radiographic Evaluation of the Cervical Spine in Emergency Situations. *Southern Medical Journal* 86, No. 11 (1993).

Kumar, A., Kozak, J.A., Doherty, B.J., and Dickson, J.H. Interspace Distraction and Graft Subsidence Following Anterior Lumbar Fusion with Femoral Strut Allograft. *Spine* 18, No. 16 (1993).

Leggon, R., Lindsey, R.W., Doherty, B.J., Alexander, J.W., and Noble, P.C. The Holding Strength of Cannulated Screws Compared to Solid Core Screws in Cortical and Cancellous Bone. *Journal of Orthopedic Trauma* 7, No. 5 (1993).

Sasso, R., Doherty, B.J., Crawford, M.J., and Heggeness, M.H. Biomechanics of Odontoid Fracture and Fixation. Comparison of the One and Two Screw Technique. *Spine* 18, No. 14 (1993).

Heggeness, M.H. and Doherty, B.J. "The Trabecular Anatomy of the Axis." *Spine*, Vol 18, No. 14, 1993.

Heggeness, M.H. and Doherty, B.J. "Discography Causes Endplate Deflection." *Spine* Vol. 18, No. 16, 1993.

Doherty, B.J., Heggeness, M.H., and Esses, S.I. "A Biomechanical Study of Odontoid Fractures and Fracture Fixation." *Spine*, Vol. 18, No. 2, 1992.

Myers, B.S., McElhaney, J.H., Nightingale, R.W., and Doherty, B.J. The Influence of End Conditions on Human Cervical Spine Injury Mechanisms and the Use of a Single Cervical Injury Criterion. *Proc. of the 35th Stapp Car Crash Conference* (1991).

Myers, B.S., McElhaney, J.H., Doherty, B.J., Paver, J.G., and Gray, L. The Role of Torsion in Cervical Spine Trauma. *Spine* 16, No. 8 (1991): 870-874.

McElhaney, J.H., Doherty, B.J., Paver, J.G., Myers, B.S., and Grey, L. Flexion, Extension, and Lateral Bending Responses of The Cervical Spine. *AGARD Meeting on Neck Injury in Advanced Military Aircraft Environments*, Munich, 1989.

Doherty, B.J., and Paver, J.G. Mathematical Modeling of the Hybrid III Manikin Head-Neck Structure. *Mathematical and Computer Modeling.* 11 (1988): 430.

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