Boster, Kobayashi & Associates

59 Rickenbacker Circle
P.O. Box 2049
Livermore, CA 94551-2049

Office: 925.447.6495
FAX: 925.447-6589

Dean Keith Stolworthy, PhD, PE, CXLT

Curriculum Vitae

EDUCATION:

Ph.D. Mechanical Engineering (Biomechanics/Design emphasis), Brigham Young University, 2015
M.S. Mechanical Engineering (Biomechanics/Design emphasis), Brigham Young University, 2012
B.S. Mechanical Engineering (Medical emphasis, Business minor), Brigham Young University, 2009

PRESENT POSITION:

Associate of Boster, Kobayashi & Associates, a consulting firm specializing in the technical aspects of accident reconstruction, failure analysis, highway design, and injury causation. Typical assignments involve the application of physical laws and principles of mechanical/biomechanical engineering to general and vehicular accident reconstruction, product design/defect analysis, and injury causation.

PREVIOUS POSITIONS:

Senior Engineer, Delta V Biomechanics, Inc., 2018 to present
Consulting Design Engineer, Independent Consultant, 2011 to present
Postdoctoral Fellow, Vanderbilt University, 2017 to 2018
Senior Biomechanical Engineer, Rimkus Consulting Group, 2015 to 2017
Senior Research & Development Engineer, Action Target, 2013 to 2015
Research & Teaching Assistant, BYU Department of Mechanical Engineering, 2007 to 2015

PROFESSIONAL MEMBERSHIPS:

American Society of Mechanical Engineers (ASME) – Professional Member
Wearable Robotics Association (WearRA) – Professional Member
Orthopaedic Research Society (ORS) – Associate Member
Association for the Advancement of Automotive Medicine (AAAM) – Professional Member

PROFESSIONAL CERTIFICATIONS:

Certified English XL Tribometrist (CXLT); Excel Tribometers, LLC: Certificate #1703654
Registered Professional Engineer (PE); National Council of Examiners for Engineering & Surveying (NCEES) – Utah License #7355130-2202

FELLOWSHIPS & GRANTS:

Vanderbilt University, Academic Pathways Fellowship, 2017-2018
Brigham Young University, Mechanical Engineering Graduate Research Fellowship, 2014-2015
Brigham Young University, Research Assistantship, 2009-2013
Brigham Young University, Academic Scholarship, 2006-2009

TEACHING:

Advanced Dynamics of Mechanical Systems, Brigham Young University, Teaching Assistant: 2011, 2013
Mechanical System Design Fundamentals, Brigham Young University, Teaching Assistant: 2011, 2012
Dynamic System Modeling and Analysis, Brigham Young University, Teaching Assistant: 2009, 2011
Material Science, Brigham Young University, Teaching Assistant: 2009, 2010
Engineering Mechanics – Statics, Brigham Young University, Teaching Assistant: 2007

DESIGN PATENTS:

Brent Johnson, Ken Hardman, Leslie Johnson, Caleb Waugh, Jonathan Woahn, Tyson Triplett, Eric Radford, Dean Keith Stolworthy, Karl M. Taylor, Brad Hyatt, Jeffrey Webster, James Kearl, David Matsumra. "Three Dimensional Variable Forming Apparatus and Methods of Use Thereof," US2009/0273109A1, Iterations, Inc.
Dean Stolworthy, Darren Wall. "Dust Containment Unit Manifold," US20160209057A1, Action Target

SELECTED PUBLICATIONS and PRESENTATIONS:

Yandell, Matthew, Lamers, Erik, Stolworthy, Dean, Zelik, Karl. "Mechanized Clothing: A Wearable Robot for Every Home." Wearable Robotics Association Annual Conference (2018)

Stolworthy, Dean, Keith, "Mechanical Medicine for the Injured Spine" Academic Pathways Symposium 2017, Vanderbilt University (2017)

Stolworthy, Dean K, Bowden, Anton E, Roeder, Beverly L, Robinson, Todd F, Holland, Jacob G, Christensen, S Loyd, Beatty, Amanda M, Bridgewater, Laura C, Eggett, Dennis L, Wendel, John D, Stiegar-Vanegas, Susanne M, Taylor, Melody D, "MRI Evaluation of Spontaneous Intervertebral Disc Degeneration in the Alpaca Cervical Spine," Journal of Orthopaedic Research (2015)

Stolworthy, Dean K, Fullwood, Rebecca A, Merrell, Tyler M, Bridgewater, Laura C, Bowden, Anton E., "Biomechanical Analysis of the Camelid Cervical IVD," Journal of Orthopaedic Translation (2015)

SELECTED PUBLICATIONS and PRESENTATIONS: cont'd

Stolworthy, Dean K, Fullwood, Rebecca A, Merrell, Tyler M, Bowden, Anton E, Bridgewater, Laura. "Mechanical Parallels of a Camelid Cervical Spine Model of Lumbar Disc Degeneration." Philadelphia Spine Research Symposium (2013)

Anderson, Brady, Merrell, A. Jake, Fullwood, David T., Bowden, Anton E, Stolworthy, Dean K, Bilodeau, Adam. "Self-sensing Materials: Applications of a piezo-electric foam sensing material." Emerging Ideas in Biomedical Research (2013)

Christensen, Loyd, Holland, Jacob G, Fullwood, R. Amy, Stolworthy, Dean K, Bowden, Anton E, Robinson, Todd F, Bridgewater, Laura C. "Development of an alpaca disc culture system for the study of intervertebral disc degeneration." Emerging Ideas in Biomedical Research (2013)

Fullwood, Rebecca A, Stolworthy, Dean K, Bowden, Anton E, Bridgewater, Laura. "Alpaca Cervical Spine Anatomy, Shape, Size, AF/NP-Ratio." Emerging Ideas in Biomedical Research (2013)

Merrell, A. Jake, Fullwood, David T, Bowden, Anton E, Remington, Taylor D, Stolworthy, Dean K, Bilodeau, Adam. "Applications of Nano-composite Piezo-electric Foam Sensors." American Society of Mechanical Engineering Conference on Smart Materials, Adaptive Structures and Intelligent Systems (2013)

Merrell, A. Jake, Remington, Taylor D, Stolworthy, Dean K, McArthur, Daniel, Bilodeau, Adam, Fullwood, David T, Bowden, Anton E, Hansen, Nathan. "Applications of Quantum Nano-composite Piezorestive Foam Sensors," American Society of Mechanical Engineering Conference on Smart Materials, Adaptive Structures, and Intelligent Systems (2013)

Remington, Taylor D, Merrel, A. Jake, Stolworthy, Dean K, Fullwood, David T, Hansen, Nathan." Biomechanical Applications of Nano-Composite Strain Gauges," Annual Meeting of the Society for the Advancement of Material and Process Engineering; Selected as a Semi-finalist for the SAMPE Graduate/Senior Student Award and Symposium Competition (2013)

Stolworthy, Dean K, Fullwood, Rebecca A, Merrell, Tyler M, Bowden, Anton E, Bridgewater, Laura. "Mechanical Parallels of a Camelid Cervical Spine Model of Lumbar Disc Degeneration." Philadelphia Spine Research Symposium (2013)

Stolworthy, D.K., Bowden, A.E., "Biomechanical Investigations of Llamas and Alpacas as Potential Animal Models for the Human Spine," Orthopaedic Research Society (2013)

Bowden, AE, Howell, LH, Stolworthy, DK. "A Compliant Mechanism Approach to Restoring the Lumbar Spine." Philadelphia Spine Research Symposium (2012)

Zirbel, S.A., Stolworthy, D.K., Howell, L.L. and Bowden, A.E., "Intervertebral Disc Degeneration Alters Lumbar Spine Segmental Stiffness in All Modes of Loading under a Compressive Follower Load," The Spine Journal (2012)

Stolworthy, D.K, Zirbel, S.A., Howell, L.L., and Bowen, A.E., "Characterization and Prediction of Rate-dependent Flexibility in Lumbar Spine Biomechanics at Room and Body Temperature." The Spine Journal (2012)

SELECTED PUBLICATIONS and PRESENTATIONS: cont'd

Zirbel, S.A., Stolworthy, D.K., Howell, L.L., and Bowden, A.E. "A Standardized Representation of Spinal Quality of Motion, Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine (2012)

Stolworthy, D.K., Zirbel, S.A., Howell, L.L., Bowden, A.E. "Predicting rate-dependent lumbar spine biomechanics: range of motion, neutral zone, stiffness, and hysteresis," Orthopaedic Research Society (2012)

Stolworthy, D.K., Zirbel, S.A., Howell, L.L. "Non-intuitive changes in spine biomechanical response with testing temperature and compressive load," Orthopaedic Research Society (2012)

Stolworthy, D.K., Zirbel, S.A., Howell, L.L., Bowden, A.E. "A Predictive Model of Rate-Dependent Spinal Segment Biomechanics," Philadelphia Spine Research Symposium (2011)

Zirbel, S.A., Stolworthy, D.K., Howell, L.L., Bowden, A.E. "Intervertebral Disc Degeneration Alters Lumbar Spine Segmental Stiffness in All Modes of Loading Under a Compressive Follower Load," Philadelphia Spine Research Symposium (2011)

Stolworthy, D.K., S.A. Zirbel, M. Samuels, A.E. Bowden, L.L. Howell "Increased Loading Rate Decreases Hysteresis and ROM in the Human Lumbar Spine," Orthopaedic Research Society (2011)

Stolworthy, D.K., Zirbel, S.A., Bowden, A.E., Howell, L.L. "Non-intuitive Changes in Spine Biomechanical Response with Testing Temperature and Compressive Load Effects," Utah Biomedical Engineering Conference (2011)

Stolworthy, D.K., Zirbel, S.A., Howell, L.L., Bowden, A.E., "Effects of Temperature and Bending Rate on Biomechanical Analysis of the Human Lumbar Spine," Mountain West Bioengineering Conference (2010)

Zirbel S.A., Stolworthy D.K., Dodgen E., Bowden A.E., Howell L.L., "Intervertebral disc degeneration alters lumbar spine segmental stiffness in all modes of loading under a compressive follower load," Mountain West Bioengineering Conference (2010)