Craig Lusk

University of South Florida
4202 East Fowler Avenue, ENB118
Tampa, Florida 33620-5350

(813) 974-1394 phone
(813) 974-3539 fax
E-mail: clusk2@eng.usf.edu

Professional Preparation

PhD **Brigham Young University**, Mechanical Engineering, August 2005
Dissertation Title: Ortho-planar mechanisms for Microelectromechanical Systems

MS **Virginia Tech**, Engineering Science and Mechanics, May 1999
Thesis Title: Morlet Wavelet Signal Analysis of Transitioning Mixing Layers

BS **Virginia Tech**, Engineering Science and Mechanics, May 1998
Minor: Mathematics

Appointments

Assistant Professor, University of South Florida, Tampa, FL, 08/05- present
Research program in area of compliant mechanisms for MEMS and prosthetics. Teaching: *Kinematics/Dynamics of Machinery*

Research/Teaching Assistant, Brigham Young University, Provo, UT, 1/2001-07/05
MEMS and compliant mechanism research. Instructor for *Kinematics.* Teaching Assistant for *Compliant Mechanisms*

System Safety Engineer, EG&G Systems, Dahlgren, VA, 1/00-12/00.
Safety analysis of Tomhawk missile launch control software.

Research/Teaching Assistant, Virginia Tech, Blacksburg VA, 8/96-12/99
Research on Morlet wavelet analysis for flows transitioning to turbulence. Teaching assistant for *Engineering Analysis of Physiologic Systems, Fluids*, and *Mechanical Behavior of Materials Lab*

Publications

Publications most closely related to the proposed project:

Jagardir, S. and Lusk, C.P., "Preliminaries for Compliant Spherical Mechanism: Psuedo-Rigid-Body Model Kinematics", in *Proceedings of the International Design Engineeering Technical Conference IDETC/CIE*, Las Vegas, NV. Sept. 7-9, 2007.

Lusk, C.P. and Howell, L.L., "Spherical Bistable Micromechanism" in Press *Journal of Mechanical Design*

Lusk, C.P. and Howell, L.L., "Components, Building Blocks, and Demonstrations of Spherical Mechanisms for Microelectromechanical Systems" in Press *Journal of Mechanical Design*

Lusk, C. P. and Howell, L. L., "A Micro Helico-Kinematic Platform via Spherical Crank-Sliders", in *Proceedings of the International Mechanical Engineering Conference and Exposition (IMECE*), Anaheim CA, November 13-19, 2004.

Jensen, K.A., Lusk, C.P., and Howell, L.L., “An XYZ Micromanipulator with Three Translational Degrees of Freedom,” *Robotica*, Vol. 24, No. 3, pp. 305-314, 2006.

Other significant publications:
Lusk, C.P. and Howell, L.L., “Design Space of Single-loop Folded Out-of-plane Micro Mechanisms,” accepted for publication in *Journal of Mechanical Design* (also published in *Proceedings of the 2004 ASME Mechanisms and Robotics Conference,* DETC 2004-57503).

Yu, Y.-Q., Howell, L.L., Yue, Y., He, M.-G., Lusk, C.P., “Dynamic Modeling of Compliant Mechanisms Based on the Pseudo-Rigid-Body Model,” *Journal of Mechanical Design,* Vol. 127, No. 4, pp. 760-765, 2005.

Jensen, K.A., Lusk, C.P. and Howell, L.L., “Force Relationships for an XYZ Micromanipulator with Three Translational Degrees of Freedom”, in *Proceedings of the Design Engineering Technical Conference (DETC)*, Salt Lake City, UT, September 29-October 2, 2004.

Campbell, K.J., Morine, J.C., George, Z.A., Lusk, C.P., Howell, L.L., Schultz, S.M., Hawkins, A.R., “Polymer Stretching to Produce Flat Suspended Micro-Membranes,” accepted for publication in *Journal of Microlithography, Microfabrication and Microsystems*.

Cannon, J. R., Lusk, C.P. and Howell, L.L., “Compliant Rolling-Contact Element Mechanisms,” in *Proceedings of the 2005 ASME Mechanisms and Robotics Conference*, DETC2005-84073.

Synergistic Activities

Undergraduate coordinator for 2006 ASME Student Mechanism Design Competition
Member, American Society of Mechanical Engineers (ASME)
Reviewer, *Journal of Mechanical Design* and *IEEE Computers in Science and Engineering*
Advisor, USF Student Chapter of ASME
Assistant Editor, ASME Mechanisms & Robotics Committee Videos

Other
Collaborators in the past 48 months that are not listed above:
Rajiv Dubey, William Quillen, Michael Highsmith; University of South Florida;
Murray Maitland, University of Washington

Current Graduate students: 6

Graduate advisors:
Larry Howell, Brigham Young University,
Muhammad Hajj, Virginia Tech.