

I. BIOGRAPHICAL DATA

Christopher John Hunter
12/12/1973
Associate Professor
Department of Mechanical and Manufacturing Engineering
2500 University Dr. NW
Calgary, AB T2N 1N4
chunter@ucalgary.ca

II. PROFESSIONAL RECORD

a. Academic Record

- i. Undergraduate
B.S., 1996
Engineering and Applied Science
California Institute of Technology, Pasadena, California
- ii. Graduate
M.S., 2000
Mechanical Engineering
Georgia Institute of Technology, Atlanta, Georgia
Ph.D., 2001
Bioengineering
Georgia Institute of Technology, Atlanta, Georgia
- iii. Post-doctoral
Post-doctoral fellow, 2002-03
Bioengineering
University of Calgary, Calgary, Alberta

b. Academic and Other Appointments

Associate Professor, MME and CBRE, 2008-
Assistant Professor: Department of Mechanical and Manufacturing Engineering (MME), Schulich School of Engineering, University of Calgary, 2004-2008
Assistant Professor: Centre for Bioengineering Research and Education (CBRE), Schulich School of Engineering, University of Calgary, 2004-2008
Adjunct Research Assistant Professor: Department of Cell Biology and Anatomy, Faculty of Medicine, University of Calgary, 2004-
Adjunct Assistant Professor: Department of Civil Engineering, Schulich School of Engineering, University of Calgary, 2003-
Junior McCaig Professor: McCaig Centre for Joint Injury and Arthritis Research, University of Calgary, 2003-2004

c. Administrative Responsibilities

- i. Department
None

- ii. School
None
- iii. University
None
- d. Professional Certification and Memberships in Learned Societies
 - Scientist Knowledge Translation Training certificate (AHFMR), 2009
 - Professional Engineer, Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA)
 - Member, American Society for Quality (ASQ)
 - Member, American Society of Mechanical Engineers (ASME)
 - Member, ASTM International
 - Member, Orthopaedic Research Society (ORS)
 - Member, AO Spine International
- e. Awards, Distinctions, and Fellowships
 - Nominee, University of Calgary Teaching Excellence Award, 2006
 - Alberta Heritage Foundation for Medical Research Health Scholar, 2005-2010
 - Alberta Ingenuity Fund New Faculty, 2005-2007
 - Finalist, Orthopaedic Research Society New Investigator Award, 2003
 - Medtronic Graduate Research Fellowship, 2001
 - International Society of Biomaterials Travel Award, 2000
 - National Institutes of Health Cellular Engineering Traineeship, 1997-2000
 - Whitaker Graduate Supplement Fellowship, 1996-2000

III. EDUCATIONAL ACTIVITIES

- a. Instruction
 - Instructor*, Engineering Analysis of Natural Systems (ENME 619.08), 2009-2010
 - Instructor*, Biomaterials & Biocompatibility (BMEN 511), 2007-09
 - Course Coordinator*, BMES Project Course (BMEN 501), 2007-08
 - Instructor*, Biomaterials (ENME 619.44), 2006 (USRI overall 6.50, 3/4 responses)
 - Instructor*, Applied Statistics for the Experimental Sciences (BMEN 319), 2006 (overall 4.55, 21/31 responses)
 - Instructor*, Anatomy and Physiology for Engineers (BMEN 309), 2006 (overall 6.85, 20/28 responses)
 - Instructor*, Anatomy and Physiology for Engineers (BMEN 309), 2005 (overall 6.77, 27/31 responses)
 - Instructor*, Probability and Statistics for Engineers (ENGG 319), 2004 (two sections) (overall 5.31 and 5.75, 71/94 and 72/124 responses)
 - Instructor*, Probability and Statistics for Engineers (ENGG 319), 2003 (two sections) (USRI data unavailable)

Thesis Supervisor, BMES Thesis (BMEN 500), one student, 2007-08
Project Supervisor, BMES Project course (BMEN 519.01), three students, 2007
Project Advisor, Mechanical Design (ENME 538), 2006-07
Project Sponsor, Mechanical Design (ENME 538), 2003-04, 2005-07
Lecturer, Introduction to Tissue Engineering, 2002
Lecturer, Frontiers in Biomedical Engineering, 2002-2006

b. Graduate and Undergraduate Supervision

Current Graduate Students:

Geoffrey Desmoulin, Mechanical Engineering, M.Sc., 2009-
Stephanie Fisher, Biomedical Engineering, M.Sc., 2009-
Kitty Choy, Biomedical Engineering, M.Sc., 2009-
Haeyeon Lee, Biomedical Engineering, M.Sc., 2008-
Ganesh Swamy, Medical Sciences, Ph.D., 2005-

Past-supervised Graduate Students:

Katherine Louman-Gardiner (NSERC), Mechanical Eng., M.Sc., 2006-2008
Troy Eggum, Mechanical Engineering, MSc., University of Calgary, 2004-2006
Kaz Bremner, EVDS, M.A., 2008-09

Examiner/supervision committee:

Jana MacMillan, Biomedical Engineering, M.Sc., 2009
Anne Gutmann, Medical Sciences, Ph.D., 2009
Shon Darcy, Civil Engineering, Ph.D., 2009
Matt Szarko, Health Sciences, Ph.D., 2009
Pooria Sattari, Mechanical Engineering, M.Sc., 2008
Graeme M Campbell, Mechanical Engineering, Ph.D., 2008
R. Joshua Klinck, Mechanical Engineering, M.Sc., 2007
Josh MacNeil, Mechanical Engineering, M.Sc., 2006
Shantanu Banik, Geomatics, Ph.D., 2008
Ben Youn, Chemical Engineering, Ph.D., 2007
Shaun Darcy, Civil Engineering, M.Sc., 2006
Chris MacKay, Health Sciences, M.Sc., 2006

Neutral chair:

Ahmed El-Kabbany, Mechanical & Manufacturing Engineering, 2009
Josh Rosvold, Civil Engineering, 2008
Mohammad Malekian, Mechanical & Manufacturing Engineering, 2008
Barua Upal, Civil Engineering, 2008
Jean Gabriel Hasbani, Geomatics, 2008
Kejin Huang, Electrical and Computer Engineering, 2006
Anas Albakkar, Electrical and Computer Engineering, 2006

Supervision of undergraduate students:

Kitty Choy, 2008-09, BME Thesis
Jan Owoc, 2008, Summer research student (NSERC)

Mia Steiner, 2008, Summer research student (PURE); 2008-09, Honors Thesis
 Aleksandar Tomic, 2007, Summer research student (NSERC)
 Vladic Lavrovsky, 2006, Summer research student
 Wendy Lyzenga, 2006, Summer research student (USRP)
 Jaret Radford, 2006, Summer research student (NSERC)
 Tegan Morrison, 2005-06, Summer research student; 2007-08, BME Thesis
 Taryn Hill, 2005, Summer research student (NSERC)

c. Postdoctoral Fellow Trainees

Dr. Xinxin Shao, Biomaterials development, 2004-2005, NSERC

d. Research Associates

Dr. Elena Ostroumov, Chordoma biology, 2005-2008, AHFMR

IV. SCHOLARLY ACTIVITIES

a. Research Support (Grants)

Total research funds obtained, 2003-08: **\$1,520,000 (PI Only)**

| Granting Agency | Award Program | Title | Total Amount | Years | PI/Co-PI |
|--------------------------------|--|--|--------------|-----------|---|
| Doctor's Research Group | Research Contract | <i>Investigations to Optimize Use of KRYPTONITE™ Bone Cement In Spinal Applications</i> | \$21,336 | 2009-2010 | PI |
| NSERC/CIHR | Collaborative Health Research Projects | <i>Regenerative therapy for the intervertebral disc</i> | \$413,328 | 2008-2011 | PI |
| Optima Health Solutions | Research Contract | | \$17,694 | 2008 | PI |
| AO Spine North America | New Faculty Award | <i>The role of IL-1β receptor antagonist in intervertebral disc degeneration</i> | \$31,034 | 2007-08 | PI |
| NSERC | Research Tools and Instruments | <i>Establishment of a Bioengineering Cell Sorting Facility in the Calgary Centre for Innovative Technology</i> | \$149,500 | 2006 | Co-PI with Kristina Rinker (lead) and Robert Martinuzzi |
| CIHR | Operating | <i>The lamina splendens</i> | \$448,623 | 2006-09 | Co-PI with |

| | | | | | |
|---------------------------------------|--------------------------------|---|-----------|---------|---|
| | Grant | <i>of normal and osteoarthritic articular cartilage</i> | | | John Matyas (lead) and Marc Hurtig (Guelph) |
| AIF | New Faculty Grant | <i>Development of mechanically and biochemically tailored biomaterials for growth of collagenous tissues</i> | \$108,103 | 2005-07 | PI |
| CFI | New Opportunities Award | <i>Establishment of a Core Tissue and Cellular Engineering Research Facility within the Centre for Bioengineering Research and Education at the University of Calgary</i> | \$133,916 | 2005-07 | PI |
| Alberta Innovation and Science | Matching funds to CFI | | \$102,631 | 2005-07 | PI |
| AHFMR | Scholar Grant | <i>Tissue engineering of the intervertebral disc</i> | Salary | 2005-10 | PI |
| AHFMR | Establishment Grant | <i>Tissue engineering of the intervertebral disc</i> | \$210,000 | 2005-08 | PI |
| NSERC | Research Tools and Instruments | <i>Development of a biomaterial for the growth of directionally oriented engineered tissues</i> | \$125,000 | 2005 | PI |
| NSERC | Discovery Grant | <i>Development of a biomaterial for the growth of directionally oriented engineered tissues</i> | \$147,500 | 2004-09 | PI |
| CIHR | Operating Grant | <i>Tissue engineering of the nucleus pulposus of the intervertebral disc: Application of notochordal cells</i> | \$210,000 | 2003-06 | PI |
| CIHR | Post-doctoral Fellowship | | \$35,000 | 2002-03 | |

b. Invited Keynote Addresses

- Hunter CJ. "The notochordal cell in the intervertebral disc." *World Forum for Spine Research*. January 2008. Kyoto, Japan.
- Hunter CJ. "The notochordal cell in the intervertebral disc." *International Cartilage Repair Society*. October 2007. Warsaw, Poland.
- Hunter CJ. "The notochordal cell in the postnatal intervertebral disc." *ECM VI Spinal Motion Segment: From Basic Science to Clinical Application*. July 2005. Davos, Switzerland.
- Hunter CJ. "Biological repair of the intervertebral disc." *Canadian Orthopaedic Association*. May 2003. Toronto, Ontario, Canada. (Conference cancelled due to SARS outbreak)
- Levenston ME, Hunter CJ. "Oscillatory compression of a hybrid engineered/native cartilage culture system." *2nd International Symposium on Mechanobiology of Cartilage and Chondrocyte*. April 2001. Paris, France.
- Levenston ME, Hunter CJ. "Unconfined compression of articular cartilage explants: electromechanical phenomena and mechanotransduction." *12th Conference of the European Society of Biomechanics*. August 2000. Dublin, Ireland.

c. Publications

Peer-reviewed journal papers

- Duncan NA, Bruehlmann SB, Hunter CJ, Shao X, Kelly E. "In Situ Cell-Matrix Mechanics in Tendon Fascicles and Seeded Collagen Gels: Implications for Biomaterials Design." *J Biomech* (In review)
- Desmoulin GT, Szostek JS, Khan AH, Al-Ameri OS, Hunter CJ, Bogduk N, Correction of Abnormal Cervical Vertebral Axes of Rotation and its Relation to Treatment Assessment, Pain, Disability, and Psychosocial Measures." *Orthopaedics* (In review)
- Louman-Gardiner KL, Coombe D, and Hunter CJ, "Computational models used to simulate the aging of an intervertebral disc from grade 1 to 2" *J Biomech* (In review)
- Malekian M, Owoc JS, Park SS, and Hunter CJ, "Experimental Comparison between Intervertebral Disc (IVD) and Fused Joint Dynamics" *ASME J Biomech Eng* (In Press)
- Desmoulin GT, Reno C, and Hunter CJ, "Free axial vibrations at 0-200 Hz positively affect extracellular matrix mRNA expression in bovine nucleus pulposi" *Spine* (In press)
- Hill TE, Desmoulin GT, and Hunter CJ, "Review: is vibration truly an injurious stimuli in the human spine?" *J Biomech* (In press).
- Schwab JH, Boland PJ, Agaram NP, Socci ND, Guo T, O'Toole GC, Block JA, Ostroumov E, Hunter CJ, Doty S, Ferrone S, Healey JH, Antonescu CR. "High Transcriptional Expression of Extracellular Matrix Genes By Both Human Chordoma and Chondrosarcoma Tumors." *Cancer Immunology Immunotherapy*, 2008 58(3):339-49.
- Ostroumov E and Hunter CJ. "Identifying mechanisms for therapeutic intervention in chordoma: c-Met oncoprotein." *Spine* 2008 33(25):p. 2774-80.

- Eggum TJ and Hunter CJ. "A novel system for application of hydrostatic pressure to growing cells and tissues." *ASME J Biomech*, 2008 130(6): 064501.
- Hunter CJ, "The Notochordal Cell in the Intervertebral Disc" *Osteoarthritis and Cartilage*, 2007 15(Supp 2): B17-20.
- Hunter CJ, Bianchi S, Chen P, Muldrew K. "A Novel Osmoregulatory Organelle Found in Notochordal Cells of the Intervertebral Disc." *Molecular and Cellular Biomechanics* 2007 4(4): p.227-38.
- Ostroumov E and Hunter CJ. "Aspects of phenotype characterization of human chordoma cells in vitro" *Spine*, 2007 32(26): p. 2957-64.
- Mwale F, Wang HT, Petit A, Girard-Lauriault P-L, Hunter CJ, Antoniou J, Wertheimer MR. "The effect of novel nitrogen-rich plasma polymer coatings on the phenotypic profile of notochordal cells." *Biomedical Engineering Online*, 2007 6(33).
- Shao X and Hunter CJ. "Developing an alginate/chitosan hybrid fiber scaffold for annulus fibrosus cells." *Journal of Biomedical Materials Research Part A*, 2007 82(3): p. 701-10.
- Hunter CJ, Matyas JR, Duncan NA. "Cytomorphology of notochordal and chondrocytic cells from the nucleus pulposus: a species comparison." *Journal of Anatomy*, 2004. 205: p. 357-62
- Hunter CJ, Matyas JR, Duncan NA. "Functional aspects of cellular structures in the notochordal nucleus pulposus: survival and cellular signaling in the canine intervertebral disc." *Spine*, 2004 29(10): p. 1099-1104.
- Hunter CJ, Levenston ME. "Maturation and integration of tissue engineered cartilages within an *in vitro* defect repair model." *Tissue Engineering*, 2004 10(5-6): p. 736-746.
- Hunter CJ, Mouw JK, Levenston ME. "Dynamic compression of chondrocyte-seeded fibrin gels inhibits matrix accumulation and the development of mechanical properties." *Osteoarthritis and Cartilage*, 2004. 12(2): p. 117-30.
- Hunter CJ, Matyas JR, Duncan NA. "The notochordal cell in the nucleus pulposus: a review in the context of tissue engineering." *Tissue Engineering*, 2003. 9(4): p. 667-77.
- Hunter CJ, Matyas JR, Duncan NA. "The three-dimensional architecture of the notochordal nucleus pulposus: novel observations on cell structures in the canine nucleus pulposus." *Journal of Anatomy*, 2003. 202(3): p. 279-92.
- Hunter CJ, Levenston ME. "The influence of repair tissue maturation on the response to oscillatory compression in a cartilage defect repair model" *Biorheology*, 2002. 39(1-2): p. 79-88.
- Hunter CJ, Imler SM, Malaviya PM, Nerem RM, Levenston ME. "Mechanical compression alters gene expression and extracellular matrix synthesis by chondrocytes cultured in collagen-I gels." *Biomaterials*, 2002. 23(4): p. 1249-59.
- Waniewski TA, Hunter CJ, and Brennen CE, "Bubble measurements downstream of hydraulic jumps." *International Journal of Multiphase Flow*, 2001. 27(7): p. 1271-84.
- Neitzel GP, Nerem RM, Sambanis A, Smith MK, Wick TM, Brown JB, Hunter CJ, Jovanovic I, Malaviya P, Saini S, Tan S. "Cell function and tissue growth

in bioreactors: fluid-mechanical and chemical environments.” *J Jpn Soc Microgravity Appl*, 1998. **15**(Supplement II): p. 602-7.

Invited posters/abstracts

Ostroumov E and Hunter CJ, “Human chordoma cell phenotype *in vitro*” *First International Chordoma Research Worksop*, May 3-4, 2007.

Hunter CJ, “Towards cellular regeneration of the intervertebral disc” *Canadian Arthritis Network Restoration of Joint Function Workshop*, June 8, 2006.

Peer-reviewed full conference papers

Swamy G, Salo P, Hunter CJ, Matyas JR, Jirik F. “Pinprick Injury Of Mouse Intervertebral Disc Mimics Rabbit Pinprick” *55th Annual Meeting of the Orthopaedic Research Society*. Feb 2009. Las Vegas, NV.

Greaves, C.Y., Gilchrist, S., Morris, T., Crompton P.A., Hunter C.J. “Impact properties of bovine tail intervertebral discs” *Northwest Biomechanics Symposium*. May 2008. Boise, ID.

Malekian M, Park S, Hunter CJ. “Experimental Modal Analysis of Intervertebral Disc Joint Dynamics.” *ASME Summer Bioengineering Conference*. June 2008. San Marco Island, FL.

Malekian M, Park S, Hunter CJ, Xiao X. “Identification of Intervertebral Disc (IVD) Joint Dynamics Using Experimental Modal Analysis.” *Canadian Society for Mechanical Engineering*. June 2008. Ottawa, ON.

Ostroumov E and Hunter CJ. “c-Met oncogene in human chordoma cells.” *54th Annual Meeting of the Orthopaedic Research Society*. March 2008. San Francisco, CA.

Ostroumov E, Swamy G, and Hunter CJ. “Phenotype characterization of human chordoma cells.” *29th Canadian Medical and Biological Engineering Conference*. June 2006. Vancouver, BC.

Eggum T and Hunter CJ. “‘Educated’ cells for IVD therapy: differential response of mscs to oxygen, glucose, and notochord conditioned medium.” *52nd Annual Meeting of the Orthopaedic Research Society*. March 2006. Chicago, IL.

Shao X and Hunter CJ. “Developing an alginate/chitosan hybrid fiber scaffold for intervertebral disc annulus fibrosus cells.” *52nd Annual Meeting of the Orthopaedic Research Society*. March 2006. Chicago, IL.

Bianchi S, Chen P, Muldrew K, Hunter CJ. “An experimental and computational examination of osmotic stress response in adult canine nucleus pulposus cells.” *51st Annual Meeting of the Orthopaedic Research Society*. February 2005. Washington, DC.

Chung J, Hunter CJ. “Gene expression response of annulus fibrosus fibrocytes, articular chondrocytes and bone marrow stromal cells to influence by adult nucleus pulposus cells.” *51st Annual Meeting of the Orthopaedic Research Society*. February 2005. Washington, DC.

Shao X, Hunter CJ. “Evaluation of a 3-D alginate scaffold for intervertebral disc annulus fibrosus cells tissue engineering.” *51st Annual Meeting of the Orthopaedic Research Society*. February 2005. Washington, DC.

- Chung J, Hunter CJ. "Gene expression response of annulus fibrosus fibrocytes, articular chondrocytes, and bone marrow stromal cells to influence by adult nucleus pulposus cells." *5th Combined Meeting of the Orthopaedic Research Societies*. October 2004. Banff, AB, Canada.
- Hunter CJ, Matyas JR, Duncan NA. "Gene expression in an endplate perforation model of intervertebral disc degeneration." *50th Annual Meeting of the Orthopaedic Research Society*. March 2004. San Francisco, CA.
- Hunter CJ, Matyas JR, Duncan NA. "Hypoosmotic stress induces changes in intracellular compartmentalization in notochordal cells from adult canine nuclei pulposi." *50th Annual Meeting of the Orthopaedic Research Society*. March 2004. San Francisco, CA.
- Hunter CJ, Matyas JR, Duncan NA. "The comparative cytomorphology of nucleus pulposus cells." *49th Annual Meeting of the Orthopaedic Research Society*. February 2003. New Orleans, LA.
- Hunter CJ, Matyas JR, Duncan NA. "Cellular architecture of the canine nucleus pulposus." *49th Annual Meeting of the Orthopaedic Research Society*. February 2003. New Orleans, LA.
- Hunter CJ, Levenston ME. "Oscillatory compression of articular cartilage: release of cell signaling molecules and the effect of conditioned medium on chondrocytes in agarose gel culture." *Fourth World Congress of Biomechanics*. August 2002. Calgary, AB.
- Imler SM, Hunter CJ, Vanderploeg EJ, and Levenston ME. "Matrix biosynthesis due to exogenous stimuli differs for cartilage and fibrocartilage." *Fourth World Congress of Biomechanics*. August 2002. Calgary, AB.
- Hunter CJ, Levenston ME. "Oscillatory compression stimulates matrix production in an *in vitro* articular cartilage repair model." *48th Annual Meeting of the Orthopaedic Research Society*. February 2002. Dallas, TX.
- Hunter CJ, Levenston ME. "Native/engineered cartilage adhesion varies with scaffold material and does not correlate to gross biochemical content." *48th Annual Meeting of the Orthopaedic Research Society*. February 2002. Dallas, TX.
- Hunter CJ, Mouw JK, Levenston ME. "Oscillatory compression inhibits matrix accumulation by chondrocytes in fibrin gel culture." *48th Annual Meeting of the Orthopaedic Research Society*. February 2002. Dallas, TX.
- Imler SM, Vanderploeg EJ, Hunter CJ, Levenston ME. "IGF-1 stimulation of meniscal biosynthesis." *48th Annual Meeting of the Orthopaedic Research Society*. February 2002. Dallas, TX.
- Mouw JK, Hunter CJ, Levenston ME. "Modulation of porcine tendon biosynthesis by *in vitro* mechanical load." *48th Annual Meeting of the Orthopaedic Research Society*. February 2002. Dallas, TX.
- Imler SM, Vanderploeg EJ, Hunter CJ, Levenston ME. "Static and oscillatory compression modulate protein and proteoglycan synthesis by meniscal fibrochondrocytes." *47th Annual Meeting of the Orthopaedic Research Society*. February 2001. San Francisco, CA.

- Hunter CJ, Shieh AC, Nerem RM, Levenston ME. "Effects of collagens I and II and chitosan on chondrocyte behavior in fibrin gel cultures." *6th World Biomaterials Congress*. May 2000. Kamuela, HI.
- Hunter CJ, Malaviya P, Nerem RM, Levenston ME. "Static compression inhibits collagen I and II gene expression in chondrocyte-laden collagen gels." *46th Annual Meeting of the Orthopaedic Research Society*. March 2000. Orlando, FL.
- Shieh A, Hunter CJ, Nerem RM, Levenston ME. "Collagen induces contraction and inhibits matrix assembly by chondrocytes in fibrin gel cultures." *46th Annual Meeting of the Orthopaedic Research Society*. March 2000. Orlando, FL.
- Wu F, Davisson T, Dunkelman N, De la Torre R, Hunter CJ, Jain D. "Development of a Dynamic Bioreactor for Synthesis of Tissue Engineered Cartilage." *Bioartificial Organs II, Engineering Foundation Conference*. July 1998. Banff, Canada.
- Malaviya P, Hunter CJ, Seliktar D, Schreiber R, Symons KT, Ratcliffe A, Nerem RM. "Fluid-induced shear stress promotes chondrocyte phenotype alteration." *44th Annual Meeting of the Orthopaedic Research Society*. February 1998. New Orleans, LA.

Abstracts

- Hu R, Duncan NA, Hunter CJ, Bruehlmann S, Kawchuk GN, Seck C-S, Matyas JR. "Altered cell morphology and gene expression in a porcine endplate perforation model of intervertebral disc degeneration." *38th Annual Meeting of the Canadian Orthopaedic Research Society*. June 2004. Calgary, AB, Canada.
- Hunter CJ, Matyas JR, Duncan NA. "Functional behaviour of notochordal cell clusters in the canine nucleus pulposus: cell communication and survival." *30th Annual Meeting of the International Society for the Study of the Lumbar Spine*. May 2003. Vancouver, BC, Canada.
- Hunter CJ, Levenston ME, Nerem RM. "Engineered/native cartilage adhesion varies with scaffold selection." *2001 BMES Annual Fall Meeting*. October 2001. Durham, NC.
- Hunter CJ, Levenston ME. "Oscillatory compression inhibits matrix synthesis by chondrocytes in fibrin gels." *2001 BMES Annual Fall Meeting*. October 2001. Durham, NC.
- Imler SM, Hunter CJ, Levenston ME. "Cryopreservation does not impair chondrocyte response to growth factor stimuli." *2001 BMES Annual Fall Meeting*. October 2001. Durham, NC.
- Magill C, Hunter CJ, Levenston ME. "A novel bioreactor system for the growth of engineered tissues under mechanical stimulation." *2001 BMES Annual Fall Meeting*. October 2001. Durham, NC.
- Vanderploeg EJ, Imler SM, Hunter CJ, Levenston ME. "Oscillatory Tension Modulates Chondrocyte Proliferation, Biosynthesis and Morphology." *2001 BMES Annual Fall Meeting*. October 2001. Durham, NC.

Hunter CJ, Nerem RM, Levenston ME. “Interactions between native and tissue engineered cartilage in a hybrid culture system.” *Tissue Engineering Society International*. December 2000. Orlando, FL.

Imler SM, Vanderploeg EJ, Hunter CJ, Levenston ME. “Mechanical compression modulates matrix synthesis in meniscal tissue and gels.” *Tissue Engineering Society International*. December 2000. Orlando, FL.

Malaviya P, Hunter CJ, Seliktar D, Schreiber R, Symons KT, Ratcliffe A, Nerem RM. “Fluid-induced shear stress promotes chondrocyte phenotype alteration.” *Keystone Tissue Engineering Symposium*. January 1998. Copper Mountain, CO.

d. Technology Transfer

Engagement with UTI for three technologies, 2007-

Consultant, Optima Health Solutions, Vancouver, B.C., 2006-

Consultant, Visionary Biomedical, San Francisco, CA, 2004

V. SERVICE ACTIVITIES

a. University Service

| | Committee | Role | Years |
|-------------------|---|------------|-----------|
| Department | | | |
| <i>CBRE</i> | Curriculum | Member | 2004-2009 |
| | Advertising | Co-chair | 2004-2009 |
| | Industry & Industrial Experience | Chair | 2006-2009 |
| | Faculty Search Committee | Member | 2006 |
| | Faculty Search Committee | Member | 2007 |
| <i>MME</i> | Graduate studies | Member | 2004-2007 |
| | Applied mechanics and biomechanics | Member | 2004-2009 |
| | Materials & Manufacturing Processes | Member | 2007-2009 |
| | Resources & Space Committee | Member | 2007-2008 |
| School | High School Liaison | Member | 2005-2007 |
| | Engineering Internship Advisory Council | Member | 2007-2009 |
| | Engineering Internship Standing Committee | CBRE Rep. | 2007-2009 |
| | Hiring Committee: Director, Engineering Career Center | Member | 2008 |
| | New Building Committee | CBRE Rep. | 2008-2009 |
| University | TUCFA | Dept. Rep. | 2006-2008 |
| | CFREB | Member | 2008-2009 |

b. Professional Service

Co-Chair, Canadian Connective Tissue Conference, July 2009

Academic Co-Chair, Canadian Medical and Biological Engineering Conference, May 2009

Peer Reviewer, *Biotechnology and Bioengineering*, 2009
Peer Reviewer, *Journal of Biomaterials Applications*, 2009
Peer Reviewer, *Acta Biomateriala*, 2009
Peer Reviewer, *Journal of Biomechanics*, 2005-2009
Peer Reviewer, *Disease Models and Mechanisms*, 2008
Peer Reviewer, *Journal of Orthopaedic Research*, 2008
Peer Reviewer, *International Journal of Artificial Organs*, 2007-08
Peer Reviewer, *NSERC*, 2006-08
Peer Reviewer/Panelist, *Canadian Institutes of Health Research*, 2004-09
Peer Reviewer, *Osteoarthritis and Cartilage*, 2005
Peer Reviewer, *Stem Cells*, 2005
Session Chair, *51st Annual Meeting of the Orthopaedic Research Society*.
February 2005. Washington, D.C.
Session Chair, *5th Combined Meeting of the Orthopaedic Research Societies*.
October 2004. Banff, AB.
Peer Reviewer, *Annals of Biomedical Engineering*, 2003
Peer Reviewer, *Journal of Biomechanics*, 2002
Peer Reviewer, *Tissue Engineering*, 2002
Peer Reviewer, *Biomaterials*, 2002
Session Chair, *4th World Congress of Biomechanics*. August 2002. Calgary,
AB.
Session Chair, *8th Annual Symposium in Orthopaedic Biomechanics*. March
2000. Orlando, FL.
Peer Reviewer, *Tissue Engineering*, 1999

c. Other Service/Activities

Panels/workshops:

- The Canadian Medical Hall of Fame / Pfizer Canada Discovery Day in Health Sciences Career Panel, October 17, 2008
- CIHR Science With Impact Workshop, February 15, 2007
- University of Calgary Engineering Research Forum, November 27, 2006
- Heritage Youth Research Summer Program Panel, August 2, 2006
- University of Calgary Sigma Xi Seminar Series, “Regenerative Medicine: Building a Healthier You”, Nov. 17, 2005

Public interviews:

- *AHFMR Research News*, Fall 2009, “Regenerative Medicine for the Spine”
- *CBC Canada French Radio*, August 23, 2009, interview
- *Readers Digest*, September 2008, “Back-Pain Breakthroughs”
- *Calgary Herald*, APEGGA insert, Fall 2007
- *Swerve Magazine*, Spring 2007 (publication date unknown)
- *U Magazine*, Spring 2007
- *AHFMR Research News*, Fall 2006, “A Pain In the Back, Spinal Disc Degeneration”

VI. OTHER ACTIVITIES

Outside Professional Activity:

- Consulting to Health Canada as a Senior Scientific Reviewer for regulatory applications in musculoskeletal medical devices

Hobbies:

- Bicycling (road and mountain)
- Dog training (English Springer Spaniels)
- Photography