

Curriculum Vitae

Tannin A. Schmidt, Ph.D., P.Eng.

University of Calgary
Faculty of Kinesiology
KNB426, 2500 University Dr NW
Calgary, AB, Canada, T2N 1N4
Tel: 403-220-7028
Fax: 403-284-3553
Email: tschmidt@ucalgary.ca
Website: www.ucalgary.ca/schmidtlab/

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PERSONAL

Birth Date: August 13, 1978. Location: Bismark, ND, USA.
 Citizenship: Canada & United States of America.
 Status: Married.

EDUCATION

<u>Institution</u>	<u>Field</u>	<u>Degree</u>	<u>Period</u>
Rush University Medical Center, Chicago	Biochemistry	Post Doc	2006-2008
University of California, San Diego	Bioengineering	Ph.D.	2002-2006
University of California, San Diego	Bioengineering	M.S.	2000-2002
University of Toronto	Engineering Science	B.A.Sc.	1996-2000

APPOINTMENTS

<u>Title</u>	<u>Organization</u>	<u>Period</u>
Co-Director (Interim)	Human Performance Lab Faculty of Kinesiology, University of Calgary	2016-2017
Visiting Professor	New York University – Polytechnic School of Engineering Bioengineering Institute	2015
Associate Professor	University of Calgary Cumming School of Medicine, Department of Surgery (joint)	2014-
Canada Research Chair	Canada Research Chairs (CRC) Program Natural Sciences & Engineering Research Council of Canada Tier II CRC in Biomedical Engineering - Biomaterials	2014-
Associate Assistant Professor	University of Calgary Faculty of Kinesiology; Schulich School of Engineering - Centre for Bioengineering Research and Education, Department of Mechanical & Manufacturing Engineering (joint); McCaig Institute for Bone and Joint Health;	2012- 2008-2012
Associate Director	University of Calgary Biomedical Engineering Graduate Program	2010-
Instructor/ Post-Doctoral Fellow	Rush University Medical Center Departments of Internal Medicine and Biochemistry	2006-2008
Research Assistant	University of California, San Diego, Department of Bioengineering Cartilage Tissue Engineering Laboratory	2000-2006
Project Consultant	University of California, San Diego, BENG 241A Applications in Tissue Engineering Science BENG 166A Cell and Tissue Engineering	2005 2005

RESEARCH INTERESTS

My research interests in bioengineering lie within biomaterials, biomechanics, biotribology, and biochemistry. The overarching goal of my research program is to understand the fundamental mechanisms and properties of PRG4, also known as lubricin (a critical lubricating protein found throughout the human body, recently discovered to also have anti-inflammatory properties), at relevant biointerfaces and biomaterials, and to apply that knowledge to the development of PRG4-containing biotherapeutics and biomaterials.

My research program has 4 objectives: 1) elucidating the molecular basis of synovial fluid's articular cartilage boundary lubricating function, and providing the framework for development of PRG4-containing osteoarthritis biotherapeutics; 2) understanding PRG4's role on the ocular surface, and characterizing/developing novel PRG4-containing contact lens biomaterials and artificial tears for the treatment of dry eye disease; 3) assessing PRG4's potential as a boundary lubricant of biomaterials for a variety of other clinical applications, e.g. orthopaedic biomaterials; 4) examining PRG4's biological properties and its potential as a therapeutic treatment of a variety of inflammatory conditions, tissue adhesions, and cancer.

Knowledge generated from this multidisciplinary work could ultimately lead to the development of new cell, protein or tissue based biomaterials/biofluids that may: 1) halt or reverse the progressive loss of cartilage after an injury or with aging and arthritis; 2) provide a therapeutically effective treatment, in the form of artificial tears or novel contact lens biomaterials, for those who suffer from dry eye disease; 3) improved performance of clinical biomaterials; and 4) contribute to the effective treatment of inflammatory conditions, tissue adhesions, and cancer.

HONORS AND AWARDS

AS RECIPIENT – NATIONAL

Killam Emerging Research Leader Award - Natural Sciences & Engineering Research Council of Canada, University of Calgary, 2015.

Tier II Canada Research Chair, Biomaterials – Biomedical Engineering, Natural Sciences & Engineering Research Council of Canada, 2014-2019.

Network Scholar Award, Canadian Arthritis Network, 2009-2012.

Summer Research Scholarship (declined), Natural Sciences & Engineering Research Council of Canada, 1999.

AS RECIPIENT – LOCAL

Schulich School of Engineering – Outstanding Teaching Performance, University of Calgary, 2015-2016.

University of Calgary Entrepreneur and Innovator Recognition, Advisory Committee for Entrepreneurship and Innovation, University of Calgary, 2014.

Biomedical Engineering Graduate Program – Outstanding Supervisor, University of Calgary, 2013-2014.

Schulich School of Engineering – Outstanding Teaching Performance, University of Calgary, 2013-2014.

Schulich School of Engineering – Outstanding Teaching Performance, University of Calgary, 2012-2013.

U Make a Difference Award - Demonstrating Core Values of the *Eyes High* Strategy, University of Calgary, 2013

Top 40 Under 40, Avenue Magazine, Calgary, 2012.

Roger Jackson Centre for Health & Wellness Research, U Calgary, Faculty Award, 2011.

U California Wide Tissue Engineering Teaching Assistant, developing education material, 2003.

U Toronto Faculty of Applied Science & Engineering Dean's Honor List, 1997-2000.

3rd place in U Toronto 2nd year Engineering Design Tag Playing Robot Competition, 1997.

U Toronto Department of Engineering Science admission scholarship, 1996.

AS MENTOR/SUPERVISOR/COLLABORATOR – INTERNATIONAL

Michael Samsom, ISCLR Hikaru Hamano Fellowship - Best Student Presentation - 18th International Society of Contact Lens Research Symposium, Budapest Hungary 2015. (*Supervisor*)

AS MENTOR/SUPERVISOR/COLLABORATOR – NATIONAL

Leah Guenther (University of Manitoba, Supervisor: Dr. J-M. Brandt), Canadian Orthopaedic Research Society Founder's Medal – Best Basic Science Oral Presentation, 2013. (*Collaborator*)

AS MENTOR/SUPERVISOR – LOCAL

Allison McPeak, The Dean's Poster Award - Clearest Message (Undergraduate), Faculty of Kinesiology Science in Seconds. University of Calgary, 2015. (*Supervisor*)

Taryn Ludwig, Best Poster Presentation, Leaders In Medicine Symposium, University of Calgary, 2013. (*Supervisor*)

Saleem Abubacker, Three Minute Thesis Competition - Finalist, Faculty of Graduate Studies, University of Calgary, 2013. (*Supervisor*)

Amanda Chan, Schulich School of Engineering Award for Excellence in Engineering Research, Student's Union Undergraduate Research Symposium, University of Calgary, 2012. (*Supervisor*)

Michael Samsom, 2nd Best Oral Presentation, Alberta Biomedical Engineering Conference, Banff, AB, 2012. (*Supervisor*)

Saleem Abubacker, Best PhD Presentation, Alberta Innovates – Health Solutions Interdisciplinary Team Osteoarthritis Grant Meeting, Calgary, AB, 2011. (*Supervisor*)

M Cecilia Alvarez, BMEN 500 Best Thesis Award, Schulich School of Engineering - Centre for Bioengineering Research & Education, University of Calgary, 2011. (*Supervisor*)

Taryn Ludwig, Best Oral Presentation, Alberta Biomedical Engineering Conference, Banff, AB, 2010. (*Supervisor*)

Daniel Aguilar, Minority High School Student Summer Program, Department of Biochemistry, Rush University Medical Center, 2007. (*Mentor*)

Nicholas S. Gastelum, California Alliance for Minority Participation in Science, Engineering and Mathematics Program Scholar, 2003. (*Mentor*)

Eun Hee Han, McNair Program Scholar, 2001. (*Mentor*)

PUBLICATIONS**REFEREED JOURNAL PAPERS**

1. Alquraini A, Jamal M, Zhang LX, **Schmidt TA**, Jay GD, Elsaid KA. The Autocrine Role of Proteoglycan-4 (PRG4) in Modulating Osteoarthritic Synoviocyte Proliferation and Expression of Matrix Degrading Enzymes. *Arth Res Therapy* (submitted), 2016.
2. Lee D, Lu Q, Sommerfeld S, Chan A, **Schmidt TA**, Elisseeff J, Singh A. Sialic acid and hyaluronan binding polymer peptide system for targeted delivery to ocular surface mucins. *Acta Biomater* (submitted), 2016.
3. Qadri M, Jay GD, Zhang LX, Wong W, Reginato W, **Schmidt TA**, Elsaid KA. Recombinant Human Proteoglycan-4 Inhibits Monosodium Urate Crystal Phagocytosis, Inflammation and Ameliorates Crystal Induced Mechanical Allodynia. *Osteoarthritis Cartilage* (submitted), 2016.
4. Samsom M, Iwabuchi Y, Sheardown H, **Schmidt TA**. Proteoglycan 4 and hyaluronan as boundary lubricants for model contact lens hydrogels. *J Biomed Mat Res B* (submitted), 2016.
5. Samsom M, Korogiannaki M, Suabbaraman L, Sheardown H, **Schmidt TA**. Hyaluronan incorporated into model contact lens hydrogels as a built-in lubricant. *J Biomed Mat Res B* (submitted), 2016.
6. Regmi SR, Samsom ML, Jay GD, Sullivan BD, **Schmidt TA**. Degradation of Proteoglycan 4 / Lubricin by Cathepsin S: Potential Mechanism for Diminished Ocular Surface Lubrication in Sjögren's Syndrome. *Exp Eye Res* (in revision), 2016.
7. Boettcher K, Dorosz SG, **Schmidt TA**, Lieleg O. Porcine gastric mucins reduce friction and wear in cartilage boundary lubrication. *Sci Report* (in revision), 2016.
8. Majd SE, Rizqy AI, Kaper HJ, **Schmidt TA**, Kuijjer R, Sharma PK. An in vitro study of Cartilage-Meniscus Tribology to Understand the Changes Caused by a Meniscus Implant. *Adv Health Mat* (in revision), 2016.
9. Waller KA, Chin KE, Jay GD, Zhang LX, Teeple E, McAllister S, Badger GD, **Schmidt TA**, Fleming BC. Intra-articular rhPRG4 Mitigates Cartilage Damage Following Destabilization of the Medial Meniscus in the Yucatan Minipig. *Am J Sports Med* (accepted), 2016.
10. Lambiasi A*, Sullivan BD*, **Schmidt TA**, Sullivan DA, Jay GD, Truitt ER, Bruscolini A, Sacchetti M, Mantelli F. A Two Week, Randomized, Double-masked Study to Evaluate Safety and Efficacy of Lubricin (150 µg/mL) Eye Drops Versus Sodium Hyaluronate (HA) 0.18% Eye Drops (Vismed®) in Patients with Moderate Dry Eye Disease. *Ocular Surface* (in press), 2016. doi: 10.1016/j.jtos.2016.08.004
11. Larson K, Zhang L, Elsaid K, **Schmidt TA**, Fleming B, Jay GD. Restoration of Endogenous Proteoglycan 4 Expression and Chondroprotection by Recombinant Human Proteoglycan 4 in Interleukin-1 α Stimulated Bovine Cartilage Explants. *J Orthop Res* (in press), 2016. doi: 10.1002/jor.23367
12. Oh J, Kean K, Tiong LU, Trochsler M, Jay GD, **Schmidt TA**, Barnett, JD, Maddern G. Recombinant human lubricin for prevention of postoperative intra-abdominal adhesions in a rat model. *J Surg Res* (in press), 2016. <http://dx.doi.org/10.1016/j.jss.2016.08.092>
13. Giles WR, Clark RB, **Schmidt TA**, Sachse F, Firestein GS, and Boyle DL. Cellular electrophysiology principles that modulate secretion from synovial fibroblasts. *J Physiol* (in press), 2016. doi: 10.1113/JP270209.

14. Abubacker S, Ponjevic D, Ham HO, Messersmith PB, Matyas JR, and **Schmidt TA**. Effect of disulfide bonding and multimerisation on Proteoglycan 4's cartilage boundary lubricating ability and adsorption. *Conn Tiss Res* 57:113, 2016.
15. Abubacker S, Dorosz SG, Ponjevic D, Jay GD, Matyas, JR, **Schmidt TA**. Cartilage boundary lubricating ability of full-length human recombinant PRG4 - alone and in combination with hyaluronan. *Ann Biomed Eng* 44:1128, 2016.
16. Ludwig TE, McAllister JR, Lun VMY, Wiley JP, **Schmidt TA**. Effect of flare reaction to intra-articular hyaluronan injection on cartilage boundary lubricating ability of human synovial fluid. *Int J Sports Ex Med* 2:42, 2016.
17. Iqbal SM, Leonard C, Regmi S, De Rantere D, Tailor P, Ren G, Ishida H, Hsu CY, Abubacker S, Pang DSJ, Salo P, Vogel HJ, Hart DA, Waterhouse CC, Jay GD, **Schmidt TA**, Krawetz RJK. Lubricin / Proteoglycan 4 binds to and regulates the activity of Toll-Like Receptors *In Vitro*. *Sci Rep* 6:18910, 2016.
18. Martin-Alarcon L, **Schmidt TA**. Rheological effects of macromolecular interactions in synovial fluid. *Biorheology* 53:49, 2016.
19. Alquraini A, Graguilo S, D'Souza G, **Schmidt TA**, Jay GD, Elsaid KA. The Interaction of Lubricin/Proteoglycan 4 (PRG4) with Toll-like Receptors 2 and 4: An Anti-inflammatory Role of PRG4 in Synovial Fluid. *Arth Res Ther* 17:353, 2015.
20. Cowman MK, **Schmidt TA**, Raghavan P, Stecco A. Viscoelastic properties of hyaluronan in physiological conditions. *F1000Res* 4:622, 2015.
21. Ludwig TE, Hunter MM, **Schmidt TA**. Effects of concentration and structure on synergistic proteoglycan 4 + hyaluronan cartilage boundary lubrication. *BMC Musculoskel Dis* 16:386, 2015.
22. Mickiewicz B, Kelly J, Ludwig TE, Weljie AM, Wiley JP, **Schmidt TA**, Vogel HJ. Metabolic analysis of knee synovial fluid as a potential diagnostic approach for osteoarthritis. *J Orthop Res* 11:1631-8, 2015.
23. Majd SE, Kuijjer R, **Schmidt TA**, Sharma PK. Role of hydrophobicity on the adsorption of synovial fluid proteins and biolubrication of polycarbonate urethane, a material for permanent meniscus implant. *Materials & Design* 83:514-521, 2015.
24. Samsom M, Chan A, Iwabuchi Y, Subbaraman L, Jones L, **Schmidt TA**. In vitro friction testing of contact lenses and human ocular tissues: Effect of proteoglycan 4 (PRG4). *Int Trib* 89:27-33, 2015.
25. Al-Sharif A, Jamal M, Zhang L, Larson K, Waller K, **Schmidt TA**, Jay GD, Elsaid KA. Lubricin/Proteoglycan 4 (PRG4) binding to CD44 receptor: A potential mechanism underlying lubricin's ability to suppress pro-inflammatory cytokine induced synoviocyte proliferation. *Arth Rheum* 67:1503-13, 2015.
26. Atarod MA, Ludwig TE, Frank CB, **Schmidt TA**, Shrive NG. Cartilage boundary lubrication of ovine synovial fluid following anterior cruciate ligament transection: a longitudinal study. *Osteoarthritis Cartilage* 23:640-7, 2015.
27. Elsaid KA, Zhang L, Shama Z, **Schmidt TA**, Jay GD. The impact of early intra-articular administration of interleukin-1 receptor antagonist on lubricin metabolism and cartilage degeneration in an anterior cruciate ligament transection model. *Osteoarthritis Cartilage* 23:114-121, 2015.
28. Kosinska MK, Ludwig TE, Liebisch G, Siebert H-C, Wilhelm J, Kaesser U, Dettmeyer RB, Ishaque B, Rickert M, Schmitz G, **Schmidt TA**, Steinmeyer J. Altered levels, composition,

- and molecular weight distribution of lubricin, phospholipids, and hyaluronan in synovial fluid during osteoarthritis and rheumatoid arthritis. *PLOS One* 10:e0125192, 2015.
29. Ludwig TE, Cowman MK, Jay GD, **Schmidt TA**. Effects of concentration and structure on proteoglycan 4 rheology and interaction with hyaluronan. *Biorheology* 51: 409-422, 2014.
 30. **Schmidt TA**. Soft Contact Lenses and (Dis)comfort: A look at where we've been and where we're headed in terms of materials. *Contact Lens Spectrum*, 29:22-27 2014.
 31. Majd SE, Kuijjer R, Köwitsch A, Groth T, **Schmidt TA**, Sharma PK. Both hyaluronan and collagen type II keep proteoglycan 4 (Lubricin) at the cartilage surface in a condition that provides low friction during boundary lubrication. *Langmuir* 30:14566-72, 2014.
 32. Samsom M, Morrison S, Masala N, Sullivan BD, Sullivan DA, Sheardown H, **Schmidt TA**. Characterization of full-length recombinant human proteoglycan 4 as an ocular surface boundary lubricant. *Exp Eye Res* 127:14-19, 2014.
 33. Guenther L, Pyle BW, Turgeon T, Bohm E, Wyss U, **Schmidt TA**, Brandt J-M. Biochemical comparisons between osteoarthritic and periprosthetic human synovial fluid. *Proc Inst Mech Eng H, J Eng Med* 228:127-139, 2014.
 34. Abusara Z, Krawetz R, Steele B, DuVall M, **Schmidt TA**, Herzog W. Muscular loading of joints triggers cellular secretion of PRG4 into the synovial fluid. *J Biomech* 46:1225-30, 2013.
 35. Barton KI, Ludwig TE, Achari Y, Shrive NG, Frank CB, **Schmidt TA**. Characterization of cartilage boundary lubricant composition and function in ovine synovial fluid following knee surgery. *J Orthop Res* 31:1549-54, 2013.
 36. Jones L, Brennan NA, Gonzalez-Méijome JM, Lally J, Maldonado-Codina J, **Schmidt TA**, Subbaraman LN, Young G, Nichols JJ. The TFOS International Workshop on Contact Lens Discomfort: Report of the Contact Lens Materials, Design & Care Subcommittee. *IOVS* 54: TFOS37-70, 2013.
 37. **Schmidt TA***, Sullivan DA*, Knop E, Richards SM, Knop N, Liu S, Sahin A, Rahimi Darabad R, Morrison S, Kam WR, Sullivan BD. Transcription, translation and function of lubricin, a boundary lubricant, at the ocular surface. *JAMA Ophthalmol* 131:766-76, 2013.
 38. Steele BL, Alvarez-Veronesi MC, **Schmidt TA**. Molecular weight characterization of PRG4 proteins using multi-angle laser light scattering (MALLS). *Osteoarthritis Cartilage* 21:498-504, 2013.
 39. Abubacker S, Ham HO, Messersmith PB, **Schmidt TA**. Cartilage boundary lubricating ability of aldehyde modified proteoglycan 4 (PRG4-CHO). *Osteoarthritis Cartilage* 21:186-9, 2013.
 40. Ludwig TE, McAllister JR, Lun VMY, Wiley JP, **Schmidt TA**. Diminished cartilage lubricating ability of human OA synovial fluid deficient in PRG4: restoration through PRG4 supplementation. *Arthritis Rheum* 64:3963-71, 2012.
 41. Antonacci JM, **Schmidt TA**, Serventi LA, Cai MZ, Shu YL, Schumacher BL, McIlwraith CW, Sah RL. Effect of equine joint injury on boundary lubrication of articular cartilage by synovial fluid: Role of hyaluronan. *Arthritis Rheum* 64:2917-26, 2012.
 42. Morrison S, Sullivan DA, Sullivan BD, Sheardown H, **Schmidt TA**. Dose-dependent and synergistic effect of PRG4 on boundary lubrication at a human cornea – polydimethylsiloxane biointerface. *Eye & Contact Lens* 38:27-35, 2012.
 43. Kwiecinski JJ*, Dorosz SG*, Ludwig TE, Abubacker S, Cowman MK, **Schmidt TA**. The effect of molecular weight on hyaluronan's cartilage boundary lubricating ability – alone and in combination with proteoglycan 4. *Osteoarthritis Cartilage* 19:1356-62, 2011.

44. **Schmidt TA**, Plaas AH, Sandy JD. Disulfide-bonded multimers of proteoglycan 4 (PRG4) are present in normal synovial fluids. *Biochim Biophys Acta* 1790:375-84, 2009.
45. **Schmidt TA**, Gastelum NS, Han EH, Nugent-Derfus GE, Schumacher BL, Sah RL. Differential regulation of proteoglycan 4 metabolism by IL-1 α , IGF-I, and TGF- β 1. *Osteoarthritis Cartilage* 16:90-7, 2008.
46. Blewis ME, Nugent-Derfus GE, **Schmidt TA**, Schumacher BL, Sah RL. A model of synovial fluid lubricant composition in normal and injured joints. *Eur Cell Mater* 13:26-39, 2007.
47. Blewis ME, Schumacher BL, Klein TJ, **Schmidt TA**, Voegtline MS, Sah RL. Microenvironment regulation of PRG4 phenotype of chondrocytes. *J Orthop Res* 25:685-95, 2007.
48. **Schmidt TA**, Gastelum NS, Nguyen QT, Schumacher BL, Sah RL. Boundary lubrication of articular cartilage: role of synovial fluid constituents. *Arthritis Rheum* 56:882-91, 2007.
49. **Schmidt TA**, Sah RL. Effect of synovial fluid on boundary lubrication of articular cartilage. *Osteoarthritis Cartilage* 15:35-47, 2007.
50. Chawla K, Klein TJ, Schumacher BL, **Schmidt TA**, Voegtline MS, Thonar EJ-MA, Masuda K, Sah RL. Tracking chondrocytes and assessing their proliferation with PKH26: effects on secretion of proteoglycan 4 (PRG4). *J Orthop Res* 24:1499-1508, 2006.
51. Klein TJ, Schumacher BL, Blewis ME, **Schmidt TA**, Voegtline MS, Thonar EJ-MA, Masuda K, Sah RL. Tailoring secretion of proteoglycan 4 (PRG4) in tissue-engineered cartilage. *Tissue Eng* 12:1429-39, 2006.
52. Nugent GE, Aneloski NA, **Schmidt TA**, Schumacher BL, Voegtline MS, Sah RL. Dynamic shear stimulates cartilage biosynthesis of proteoglycan 4 (PRG4). *Arthritis Rheum* 54:1888-96, 2006.
53. Nugent GE, **Schmidt TA**, Schumacher BL, Voegtline MS, Bae WC, Jadin KD, Sah RL. Static and dynamic compression regulate cartilage metabolism of proteoglycan 4 (PRG4). *Biorheology* 43:191-200, 2006.
54. Schumacher BL, **Schmidt TA**, Voegtline MS, Chen AC, Sah RL. Proteoglycan 4 (PRG4) synthesis and immunolocalization in bovine meniscus. *J Orthop Res* 23:562-568, 2005.
55. **Schmidt TA**, Schumacher BL, Klein TJ, Voegtline MS, Sah RL. Synthesis of proteoglycan 4 by chondrocyte subpopulations in cartilage explants, monolayer cultures, and resurfaced cartilage cultures. *Arthritis Rheum* 50:2849-57, 2004.
56. Klein TJ, Schumacher BL, **Schmidt TA**, Li KW, Voegtline MS, Masuda K, Thonar EJ-MA, Sah RL. Tissue engineering of articular cartilage with stratification using chondrocyte subpopulations. *Osteoarthritis Cartilage* 11:595-602, 2003.
57. Kurtis MS, **Schmidt TA**, Bugbee WD, Loeser RF, Sah RL. Integrin-mediated adhesion of human chondrocytes to cartilage. *Arthritis Rheum* 48:110-8, 2003.

BOOK CHAPTERS

1. Sah RL, Klein TJ, **Schmidt TA**, Albrecht DR, Bae WC, Nugent GE, McGowan KB, Temple MM, Jadin KD, Schumacher BL, Chen AC, Sandy JD: Articular cartilage repair, regeneration, and replacement. In: *Arthritis and Allied Conditions: A Textbook of Rheumatology*, ed by WJ Koopman, Lippincott Williams & Wilkins, Philadelphia, PA, 2005, pp 2277-2301.
2. **Schmidt TA**, Schumacher BL, Han EH, Klein TJ, Voegtline MS, Sah RL: Chemo-mechanical coupling in articular cartilage: IL-1 α and TGF- β 1 regulate chondrocyte

synthesis and secretion of proteoglycan 4. In: *Physical Regulation of Skeletal Repair*, ed by RK Aaron and ME Bolander, American Academy of Orthopaedic Surgeons, Chicago, IL, 2005, pp 151-162.

OTHER WORKS

1. Samsom ML, **Schmidt TA**. In vitro contact lens boundary lubrication friction method development, characterization, and validation. Industry Report, Johnson & Johnson Vision Care 2016.
2. Abubacker S, Chan A, Samsom ML, **Schmidt TA**. Effect of Hydro-PEG Surface Treatment on Friction of Safrafilcon A Silicone Hydrogel Contact Lenses at a Human Eyelid – Contact Lens Biointerface. Industry Report, Contamac Ltd. 2015.
3. **Schmidt TA**. Proteoglycan 4 Metabolism and the Boundary Lubrication of Articular Cartilage. Ph.D. Thesis supervised by Professor Robert L. Sah, University of California – San Diego, La Jolla, CA, USA, 2006.
4. **Schmidt TA**. Recombinant Human Elastin Like Peptide Incorporation into Acellularized Porcine Tissue. B.A.Sc. Thesis supervised by Professor Kim A. Woodhouse, University of Toronto, Toronto, ON, Canada, 2000.

REFEREED CONFERENCE ABSTRACTS

1. Morin AA, Regmi SC, Jay GD, **Schmidt TA**. Biophysical Evidence for a Molecular Interaction between Proteoglycan 4 and Hyaluronan in Solution: Effect of Exposure to a Zwitterionic Detergent on Cartilage Boundary Lubricating Function. *Trans Orthop Res Soc*, 42:1448, 2017.
2. Karamchedu NP, Li LT, **Schmidt TA**, Jay GD. Anti-adhesive Properties Of Recombinant Human PRG4. *Trans Orthop Res Soc*, 42:490, 2017.
3. Sharma PK, Majd SE, Kuijer R, **Schmidt TA**. An In Vitro Study Of Cartilage-meniscus Tribology To Understand The Changes Caused By A Meniscus Implant. *Trans Orthop Res Soc*, 42:520, 2017.
4. Qadri M, **Schmidt TA**, Jay GD, Elsaid KA. Recombinant Human Proteoglycan-4 (rhPRG4) Inhibits Monosodium Urate (MSU) Crystal Phagocytosis by Human Macrophages and Resultant Inflammatory Response. *Am College Rheum Ann Meeting* 3071, 2016.
5. Reginato AM, Qadri M, Sun C, Yang N, **Schmidt TA**, Elsaid KA, Jay GD. Anti-inflammatory role of lubricin/proteoglycan 4 (PRG4) in monosodium urate (MSU)-crystal induced arthritis. *Am College Rheum Ann Meeting* 2260, 2016.
6. Park DS, Regmi S, Svystonyuk D, Belke D, Teng G, Mewhort H, Guzzardi D, Kang S, **Schmidt TA**, Fedak PWM. Expression and Role of Lubricin in the Human Pericardium: Implications as a Therapeutic to Prevent Post-Operative Adhesions. *Trans ISACB*, 2017.
7. Loundagin LL, Schmidt TA, Edwards WB. Is the Mechanical Fatigue of Bone Influenced More by the Impact or Active Phase of Running? *Trans Am Soc Biomech* 226, 2016
8. Majd SE, Rizqy AK, Kaper HJ, **Schmidt TA**, Kuijer R, Sharma PK. An in vitro study of cartilage-meniscus tribology to understand the changes caused by a meniscus implant. *Trans Int Conf BioTribology* 18.02, 2016.

9. Korogiannaki M, Samsom M, Jones L, **Schmidt TA**, Sheardown H. The impact of hyaluronic acid coating on the surface properties of model contact lenses. *World Congress Biomaterials* P.0227, 2016.
10. Alquraini A, Garguilo S, Zhang LX, **Schmidt TA**, Jay GD, Elsaid KA. The Interaction of Lubricin/Proteoglycan-4 (PRG4) with Toll-like Receptor 2: An Anti-inflammatory role of PRG4 in synovial fluids from Patients with Osteoarthritis. *World Congress OARSI* 861, 2016.
11. Bowman SA, Regmi S, **Schmidt TA**, West-Mays JA. Effect of Proteoglycan 4 treatment on focal adhesions of lens epithelia cells during TGF β -induced EMT. *Invest Ophthalmol Vis Sci* 57:2019, 2016.
12. Jamal M, Alquraini A, **Schmidt TA**, Jay GD, Elsaid KA. Lubricin/proteoglycan-4 (PRG4) Inhibits Interleukin-1 Beta (IL-1 β) Induced Nuclear Factor Kappa B (NF κ B) Activation And Proliferation Of Osteoarthritic Synoviocytes In A CD44-dependent Manner. *Trans Orthop Res Soc*, 41:227, 2016.
13. Larson K, Elsaid K, **Schmidt TA**, Fleming B, Jay GD. Restoration of PRG4 mRNA and Chondroprotection by rhPRG4 in IL-1 α Stimulated Cartilage Explants. *Trans Orthop Res Soc*, 41:11404, 2016.
14. Loundagin LL, **Schmidt TA**, Edwards WB. The influence of loading frequency on the compressive fatigue behavior of bovine cortical bone. *Trans Orthop Res Soc*, 41:2189, 2016.
15. Morin AA, Regmi SC, **Schmidt TA**. Effect of Hydrodynamic Shear on Proteoglycan 4 Synthesis and Secretion by Bovine Cartilage Explants. *Trans Orthop Res Soc*, 41:494, 2016.
16. Morin AA, Regmi SC, **Schmidt TA**. Effect of Hydrodynamic Shear on Proteoglycan 4 Synthesis and Secretion by Bovine Cartilage Explants. *Trans Can Med and Bio Eng Conf*, 2016.
17. Waller KA, Teeple E, McAllister SC, Schmidt TA, Jay GD, Fleming BC. Intra-articular rhPRG4 mitigates cartilage damage following DMM in a porcine model. *Trans Orthop Res Soc*, 41:1358, 2016.
18. Waller KA, Zhang L, Teeple E, McAllister SC, **Schmidt TA**, Jay GD, Fleming BC. Recombinant lubricin reduces joint damage and inflammation following traumatic injury. *World Congress OARSI* 900, 2016.
19. Samsom ML, Korogiannaki M, Subbaraman L, Sheardown H, T Schmidt TA. Effect of Immobilized Proteoglycan 4 on Contact Lens Hydrogel Surface Properties and Lubrication. *Trans STLE Tribology Frontiers Conference*, 2015.
20. Ludwig TE, Cowman MK, Jay GD, **Schmidt TA**. Effects of Concentration and Structure on PRG4 Viscosity and Interaction with Hyaluronan. *Trans Int Conf Hyaluronan* 85, 2015.
21. Dorosz SG, **Schmidt TA**. Synergistic boundary lubricating ability of recombinant human proteoglycan 4 (lubricin) and hyaluronan at an articular cartilage – meniscus biointerface. *World Congress OARSI*, 2, 2015.
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42. Samsom ML, Subbaraman NL, Jones L, Sheardown H, **Schmidt TA**. *In Vitro* Friction Testing of Contact Lens Biomaterials and Human Ocular Tissues. *Trans Int Conf BioTribology* 200, 2014.
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50. Majd SE, Kuijer R, **Schmidt TA**, Sharma PK. Adsorption of synovial fluid proteins on biomaterials for permanent meniscus replacement and their bio-lubrication. *Trans World Tribology Congress* 1112, 2013.
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53. Andrews SJH, Samsom MJ, **Schmidt TA**, Shrive NG, Ronsky JL, Rattner JB. Lubricin distribution in the bovine meniscus. *Trans Orthop Res Soc*, 38:1346, 2013.
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56. Ludwig TE, McAllister JR, Lun VMY, Wiley JP, **Schmidt TA**. Effect of flare reaction to intra-articular injection on cartilage lubricating ability of human synovial fluid. *Clinical Journal of Sport Medicine* 23 (2) e20, 2013,

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60. Chau SB, Ludwig TE, Ponjevic D, Matyas JR, **Schmidt TA**. Lubricant composition in canine synovial fluid 12 weeks post ACL-transection: Alterations in proteoglycan 4 and hyaluronan. *Trans Can Conn Tiss Conf*, 2012.
61. Ludwig TE, McAllister JR, Lun VMY, Wiley JP, **Schmidt TA**. Diminished cartilage lubricating ability of human OA synovial fluid deficient in PRG4: restoration through PRG4 supplementation. *Clinical Journal of Sports Medicine* 22; 300-301, 2012.
62. Abubacker S, Masala N, Morrison S, Jay GD, **Schmidt TA**. Role of lubrication and joint homeostasis: Cartilage Boundary Lubricating Ability of Full-Length Recombinant Human PRG4 - Alone and In Combination with Hyaluronan. *Int Cart Repair Soc* 10:21.1.1, 2012.
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64. Samsom ML, Sullivan BD, **Schmidt TA**. Effect of Hyperosmolarity on PRG4's Ocular Surface Boundary Lubricating Ability at a Human Cornea-Eyelid Biointerface. *Invest Ophthalmol Vis Sci* 53:551, 2012.
65. Subbaraman LN, **Schmidt TA**, Sheardown H. Proteoglycan 4 (lubricin) Enhances the Wettability Of Model Conventional And Silicone Hydrogel Contact Lenses. *Invest Ophthalmol Vis Sci* 53:525, 2012.
66. **Schmidt TA**, Masala N, Morrison S, Samsom M, Sheardown H. Characterization of Recombinant Human PRG4 as an Ocular Surface Boundary Lubricant. *Invest Ophthalmol Vis Sci* 53:552, 2012.
67. Abubacker S, Ham HO, Messersmith PB, **Schmidt TA**. Cartilage boundary lubricating ability of aldehyde modified PRG4. *Trans Orthop Res Soc* 37:50, 2012.
68. Abusara Z, Steele BL, **Schmidt TA**, Herzog W. Muscular loading of joints and its effect on synovial fluid composition. *Trans Orthop Res Soc* 37:1683, 2012.
69. Barton KI, Ludwig TE, Achari Y, Shrive NG, Frank CB, **Schmidt TA**. Characterization of cartilage boundary lubricant composition and function in ovine synovial fluid following knee surgery. *Trans Orthop Res Soc* 37:794, 2012.
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71. Kwiecinski J, Dorosz SG, Hill TE, Cowman MK, **Schmidt TA**. The effect of molecular weight on hyaluronan's cartilage lubricating ability – alone and in combination with proteoglycan 4. *Trans Orthop Res Soc* 36:2127, 2011.
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74. Subbaraman LN, **Schmidt TA**, Sheardown H. Incorporating a Glycoprotein (Proteoglycan 4) to Enhance Wettability of Conventional and Silicone Hydrogel Contact Lenses. *Trans Am Acad Ophthalmol* E14, 2011.
75. Alvarez MC, Kooyman J, **Schmidt TA**. Synthesis of proteoglycan 4 (PRG4) disulfide-bonded multimers by chondrocytes in cartilage explants. *Trans Orthop Res Soc* 35:850, 2010.
76. Kooyman J, Alvarez MC, **Schmidt TA**. Cartilage boundary lubricating properties of native proteoglycan 4 purified from normal bovine synovial fluid. *Trans Orthop Res Soc* 35:255, 2010.
77. Morrison S, Snider B, Sullivan BD, Truitt ER III, Sullivan DA, **Schmidt TA**. Lubricin as an ocular surface – contact lens boundary lubricant: dose-dependent & synergistic effects. *Tear Film & Ocular Surface Society*, 60, 2010.
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83. Sullivan BD, Richards SM, Talbot D, **Schmidt TA**, Sullivan DA. Proteoglycan 4 mRNA expression in human corneal and conjunctival epithelial cells. *Invest Ophthalmol Vis Sci* 48:E795, 2007.
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87. Blewis ME, Schumacher BL, Klein TJ, **Schmidt TA**, Voegtline MS, Sah RL. Microenvironment regulation of superficial zone phenotype of chondrocytes. *Trans Orthop Res Soc* 30:1, 2005.
88. Chawla K, Klein TJ, Schumacher BL, Jadin KD, **Schmidt TA**, Chen AC, Wong V, Nakagawa K, Thonar EJ-MA, Masuda K, Sah RL. Enhanced formation of stratified tissue-engineered porcine cartilage from chondrocyte subpopulations with bone morphogenetic protein-7 (BMP-7). *Trans Orthop Res Soc* 30:294, 2005.

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91. Chawla K, Klein TJ, Schumacher BL, Jadin KD, **Schmidt TA**, Voegtline MS, Thonar EJ-MA, Masuda K, Sah RL. Tracking donor chondrocytes stratified tissue-engineered cartilage after implantation *in vivo*. *Trans Orthop Res Soc* 29:306, 2004.
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94. Schumacher BL, **Schmidt TA**, Bae WC, Wong VW, Temple MM, Kim TW, Voegtline MS, Chawla K, Chen AC, Bugbee WD, Sah RL. Localization and expression of lubricin/superficial zone protein in human articular cartilage: alterations in osteoarthritis. *Trans Orthop Res Soc* 29:281, 2004.
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96. Sah RL, Lottman LM, **Schmidt TA**, Mankarious S. Effects of fibrin glue components on chondrocyte growth and matrix formation. *Trans Orthop Res Soc* 28:721, 2003.
97. **Schmidt TA**, Schumacher BL, Klein TJ, Voegtline MS, Sah RL. Resurfacing articular cartilage with chondrocytes expressing superficial zone protein. *Trans Orthop Res Soc* 28:137, 2003.
98. Schumacher BL, Voegtline MS, **Schmidt TA**, Klein TJ, Chen AC, Sah RL. Immunolocalization and synthesis of superficial zone protein (SZP) in meniscus. *Trans Orthop Res Soc* 28:613, 2003.

ACADEMIC EXPERIENCES

Visiting Professor, New York University – Polytechnic School of Engineering, Bioengineering Institute, New York, NY, USA, 2015.

Development of assay(s) for characterization and quantification of PRG4, hyaluronan, and their interaction.

Associate Professor, Tier II Canada Research Chair, University of Calgary, Faculty of Kinesiology, Department of Mechanical and Manufacturing Engineering, Centre for Bioengineering Research and Education, McCaig Institute for Bone and Joint Health, Calgary, AB, Canada, 2008 - .

- *Interim Co-Director, Human Performance Lab, Faculty of Kinesiology, 2016-2017*
- *Associate Professor, Faculty of Medicine, Department of Surgery (joint), 2014-*
- *NSERC Tier II Canada Research Chair, 2014-*

- *Associate Professor, 2012-*
- *Associate Director - Biomedical Engineering Graduate Program, 2010 -*
- *Network Scholar – Canadian Arthritis Network, 2009 – 2012.*
- *Assistant Professor, 2008-2012.*

Examination and elucidation of the structure-function relationship governing the multiple biological properties of PRG4 that contribute to the overall maintenance and integrity of the knee and eye.

Development of novel biomechanical-biotribological (boundary lubrication), biophysical, and biochemical methods.

Instructor / Post-Doctoral Scholar, Rush University Medical Center, Departments of Internal Medicine & Biochemistry, Chicago, IL, 2006 - 2008.

Developed methods for purification and characterization of PRG4 multimers and monomers.

Aided in development biological assays for use in conjunction with in vivo murine studies.

Contributed to tissue harvest, cell culture, and lab safety/maintenance procedures.

Graduate Student Researcher, University of California San Diego, Cartilage Tissue Engineering Lab, La Jolla, CA, 2000-2006.

Specified requirements for a customized multi-axial biomechanical tester, designed custom scaffolding for testing, and developed test protocols.

Aided in developing enzyme linked immunosorbent assays for PRG4.

Contributed to standardization of tissue harvest and cell culture procedures.

Summer Student Researcher, St. Michael's Hospital, Toronto, ON, Cardiovascular Research, Toronto, ON, Canada, 2000.

Developed a protocol for smooth muscle cell migration studies through acellularized vessel tissue within a Rotating Cell Culture System.

Designed an apparatus for cell contractility studies.

Aided in animal angioplasty surgery.

Summer Student, Cancer Care Manitoba, Winnipeg, MB, Canada, 1999.

Created software which scheduled and recorded electron therapy for cancer patients.

Calibrated a film scanner for a film dosimetry study and established a protocol for scanning and reading films.

Aided in daily quality assurance of therapy machines and created software for other smaller projects.

INDUSTRY EXPERIENCES

Consultant, Allergan, Irvine, CA, 2014.

Spent ½ with scientists in Consumer Eye Care Research & Development providing input on biophysical mechanisms of action related to a recently launched commercial eye drop.

Consultant, Johnson & Johnson Vision Care Inc. (JJCVI), Jacksonville FL, 2013-

Traveled to JJCVI to spend 1 day speaking on in vitro contact lens friction testing against human tissues methods and provided an interactive session with JJCVI research staff. Nov, 2013

Traveled to JJCVI to spend 3 days participating and speaking in the Contact Lens Friction Summit. Nov, 2014

Chief Scientific Officer (2011-2016), Senior Scientific Consultant (2016-) Lubris, Boston, MA, 2011-

Singularis (see below) merged with Lubris LLC in Q4 2011, a Boston based startup company developing PRG4 for osteoarthritis, surgical adhesions and joint pain.

Demonstrated ophthalmic proof-of-principle, multiple animal studies demonstrating safety and efficacy for osteoarthritis, joint pain relief and cartilage protection.

Dominant and expanding international IP Estate – 14 patent families including 15 issued patents and more than 27 pending applications.

Transitioned to Senior Scientific Consultant role due to successful growth of company, focusing on bioprocessing and purification of recombinant human PRG4 protein.

Co-Founder & Chief Scientific Officer, Singularis, San Diego, CA, 2008-2011.

Co-invented patents related to proteoglycan 4 (PRG4) in the eye licensed exclusively by Singularis. This technology includes therapeutic compositions for dry eye disease, the modulation of PRG4 synthesis, secretion and presence at the ocular surface, and formulations for contact lens supplementation.

Developed novel in vitro methods for evaluation and demonstration of PRG4's ocular surface boundary lubricating ability.

Intend to commercialize, through Singularis, PRG4 as an ophthalmic lubricant in artificial tears, rewetting drops, or on contact lenses. Singularis has established a partnership with a leading European artificial tear manufacturer and CHO cell line development company to facilitate this process.

Summer Intern Engineering Assistant, Krebs Engineers, Tucson, AZ, 1998.

Established a procedure for testing material wear due to particle impingement within hydro cyclones.

Summarized data in technical reports from daily experiments using several different types of materials.

RESEARCH SUPPORT

- | | |
|-----------|---|
| 2016-2017 | <p>Canadian Institutes of Health Research, Project Grant – Bridge Funding:
 <i>Elucidating the role of Proteoglycan 4 (PRG4) / Lubricin in Pericardial Fluid & its Therapeutic Potential to Prevent Cardiac Tissue Adhesions</i>
 Principal Investigator, \$100,000
 (Co-Principal Investigator: Dr. Paul Fedak, U Calgary)</p> |
| 2016-2017 | <p>University of Calgary, Faculty of Kinesiology Seed Grant:
 <i>Recombinant Human Proteoglycan 4 (PRG4) / Lubricin as a Potential Anti-Metastatic Therapeutic Protein</i>
 Principal Investigator, \$50,000</p> |

- 2016-2017 **Johnson & Johnson Vision Care Inc., Research Sub Contract:**
Effect of Lipid Deposition on Dehydration Kinetics of Contact Lenses
Site Principal Investigator, \$63,642
 (Research Contract Principal Investigator: Dr. Lyndon Jones, U Waterloo)
- 2015-2020 **Alberta Innovation and Advanced Education, Research Capacity Program:**
Biophysical & Biomechanical Characterization of Biomaterials & Biofluids: Engineering Solutions for Health
Principal Investigator, \$251,000
- 2015-2016 **Contamac, Ltd, Research Contract:**
In Vitro Evaluation of Surface Treated Silicone Hydrogel Contact Lenses
Principal Investigator, \$21,000
- 2014-2016 **Johnson & Johnson Vision Care Inc., Research Contract:**
In Vitro Contact Lens Boundary Lubrication Friction Method Development, Characterization, and Validation
Principal Investigator, \$99,540
- 2014-2019 **Canada Foundation for Innovation, John R. Evan Leaders Fund:**
Biophysical & Biomechanical Characterization of Biomaterials & Biofluids: Engineering Solutions for Health
Principal Investigator, \$251,000
- 2014-2019 **Natural Sciences & Engineering Research Council of Canada, Discovery Grant:**
Biointerface Science: Composition-Structure-Function Relationship of Synovial Fluid's Cartilage Boundary Lubricants
Principal Investigator, \$150,000
- 2014-2019 **Canada Research Chairs Program, Tier II, Natural Sciences & Engineering Research Council of Canada:**
Biomedical Engineering - Biomaterials
Principal Investigator, \$500,000
- 2013-2018 **Canadian Institutes of Health Research, Operating Grant:**
The Mechanical Causes of Osteoarthritis
Co-Investigator, \$665,010
 (Principal Investigator: Dr. Nigel Shrive, U Calgary)
- 2013-2015 **University of Calgary, Eyes High Post Doctoral Scholars Award:**
Strategic Research Theme: Engineering Solutions for Health
Principal Investigator, \$100,000
- 2013-2014 **Canadian Institutes of Health Research, Knowledge Translation Grant:**
Translating Osteoarthritis Care in Alberta Through Knowledge Exchange Strategies
Co-Investigator, \$25,000
 (Principal Investigator: Dr. Linda Woodhouse, U Alberta)
- 2012-2015 **The Arthritis Society, Strategic Operating Grant**

- Identification of Subtle Biomechanical Alterations Leading to Knee Osteoarthritis*
Co-Investigator, \$360,000
 (Principal Investigator: Dr. Nigel Shrive, U Calgary)
- 2012-2015 **Natural Sciences & Engineering Research Council of Canada & Canadian Institutes of Health Research, Collaborative Health Research Project:**
Biointerface Science: Proteoglycan 4 (PRG4) with and without Hyaluronic Acid as a Novel Ocular Surface Boundary Lubricant & Contact Lens Coating
Principal Investigator, \$368,000
- 2012-2013 **Canadian Arthritis Network, Discovery Advancement Program**
Recombinant Human Proteoglycan 4 (rh-PRG4) as a Novel Implant Surface Lubricant: Decreased Friction and Wear Leading to Prolonged Implant Life
Principal Investigator, \$50,000
- 2011-2013 **Zymetrix (renamed BOSE Center) & Singularis Inc., Translational Research Project Funding:**
PRG4 as a Novel Ocular Surface Boundary Lubricant
Principal Investigator, \$80,000
- 2011 **Singularis Inc., Gift Award:**
Donation for Research
Principal Investigator, \$20,000
- 2010 **Singularis Inc., Gift Award:**
Donation for Research
Principal Investigator, \$25,000
- 2009-2012 **Canadian Arthritis Network, Network Scholar Award:**
Proteoglycan 4 (PRG4) characterization and supplementation in human post-knee injury synovial fluid: Implications for restoration of impaired cartilage lubricating ability and osteoarthritis biotherapeutics
Principal Investigator, \$180,000
- 2009-2014 **Natural Sciences & Engineering Research Council of Canada, Discovery Grant:**
Biointerface Science: Molecular Basis of Articular Cartilage Boundary Lubrication
Principal Investigator, \$140,000
- 2009 **University of Calgary, URGC Starter Grant:**
Biophysical Characterization of Proteoglycan 4 in Post-Injury Human Synovial Fluid
Principal Investigator, \$17,851
- 2009 **Wyeth, Evaluation Study Agreement:**
Ocular Surface Lubrication by Recombinant Proteoglycan 4 (Lubricin)
Principal Investigator, \$12,750

- 2009 **Canada Foundation for Innovation, Leaders Opportunity Fund – Infrastructure Funds:**
Harnessing leading edge technology for osteoarthritis therapeutics: Unprecedented resolution of cartilage cell signaling & macromolecular interaction within synovial fluid
Co-Principal Investigator, \$513,360
 (Principal Investigator: Dr. Wayne Giles, U Calgary)
- 2008 **Alberta Advanced Education and Technology, Small Equipment Grant Program:**
Harnessing leading edge technology for osteoarthritis therapeutics: Unprecedented resolution of cartilage cell signaling & macromolecular interaction within synovial fluid
Co-Principal Investigator, \$513,360
 (Principal Investigator: Dr. Wayne Giles, U Calgary)
- 2008-2014 **Alberta Heritage Foundation for Medical Research, Interdisciplinary Team Grant:**
Creating Bone and Joint Health from the Bedside to the Bench and Back Again
Co-Principal Investigator, \$6,000,000
 (Principal Investigators: Drs. Cy Frank & Walter Herzog, U Calgary)
- 2008 **University of Calgary, Faculty of Kinesiology:**
Start Up Funds
Principal Investigator, \$150,000

PATENTS

US Patent Applications

1. *Method for Therapeutic Replenishment and Enrichment of Ocular Surface Lubrication*; PCT/US2009/039887, published November 12, 2009 (Pub. No WO/2009/137217), Issued Oct 28, 2015 (14/272,634); National Phase in Canada, Europe (published February 23, 2011), Japan, Russia initiated. Inventors: Sullivan BD, Sullivan DA, **Schmidt TA**.
2. *Therapeutic Modulation of Ocular Surface Lubrication*; PCT/US2009/043015, published November 12, 2009 (Pub. No WO/2009/137602), issued Jun 2, 2015 (12/940,425). National Phase in Canada, Europe (published January 26, 2011), Japan initiated. Inventors: Sullivan BD, Sullivan DA, **Schmidt TA**.
3. *Ophthalmic Device, and Method of Use Therefore, for Increasing Ocular Boundary Lubrication*; PCT/US2009/043018, published November 12, 2009 (Pub. No WO/2009/137603), issued Feb 3, 2015 (8,945,605 B2); National Phase in Canada, Europe (published January 26, 2011), Japan initiated. Inventors: Sullivan BD, Sullivan DA, **Schmidt TA**.
4. *Application and Uses of PRG4 and Therapeutic Modulation Thereof*; PCT/US2010/035956, published November 25, 2010 (Pub. No WO/2010/135736); National Phase in Canada, Europe (published March 28, 2012), Japan initiated. Inventors: Sullivan BD, **Schmidt TA**, Truitt ER, Truitt NBJ, Sullivan DA.

5. *Replenishment and Enrichment of Ocular Surface Lubrication*; PCT/US2009/053797, published April 28, 2011 (Pub. No WO/2011/050287). Inventors: Sullivan BD, Sullivan DA, **Schmidt TA**.
6. *Control of Rheological Properties of Mixed Hyaluronate/Lubricin Solutions*; PCT/US2014/52272, published September 1, 2016. Inventor: **Schmidt TA**.
7. *Production of Recombinant Lubricin*; PCT/US2014/061827, published April 30, 2015 (US National stage patent filed April 20, 2016, 15/030,825). Inventors: Jay GD, **Schmidt TA**.
8. *Compositions and Methods for inhibiting Intercellular Interactions*; PCT/US2014/067464, published October 5, 2016. Inventors: Jay GD, **Schmidt TA**, Sullivan BD.
9. *Use of PRG4 As an Anti-Inflammatory Agent*; PCT/US16/14952, published August 4, 2016. Inventors: Jay GD, Sullivan BD, **Schmidt TA**, Elsaid KA, Truitt ER, Krawetz R, Szmydynger-Chodobska J, Chodobska A, Fareed J.

PRESENTATIONS

PODIUM - INTERNATIONAL & NATIONAL

1. *8th International Conference on the Tear Film & Ocular Surface: Basic Science and Clinical Relevance*, Montpellier, France. 2016. **Invited Speaker**.
2. Canadian Orthopaedic Nurses Association (39th) Annual Conference, Edmonton, Canada. 2016. **Invited Speaker**.
3. University of Gothenburg, The Sahlgrenska Academy – Institute of Biomedicine, Gothenburg, Sweden. 2014. **Visiting Speaker**.
4. *University of Houston College of Optometry, Periopsia Lecture*, 2014. **Invited Speaker**.
5. *17th International Society of Contact Lens Research Symposium*, Kyoto, Japan, 2013. **Invited Speaker (Prospective Member)**.
6. *7th International Conference on the Tear Film & Ocular Surface: Basic Science and Clinical Relevance*, Taormina, Italy, 2013. **Invited Speaker**.
7. *19th Canadian Connective Tissue Conference*, Montreal, Canada, 2013. **Invited Speaker**.
8. *16th Symposium on the Material Science and Chemistry of Contact Lenses*, New Orleans, LA, 2012. **Invited Speaker**.
9. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2012. **Selected Short Talk**.
10. *International Cartilage Repair Society*. Montreal, Canada, 2012. **Invited Session Speaker**.
11. *The International Conference on BioTribology*, London, England, 2011.
12. *Annual Meeting of the Kolff Institute for Biomedical Engineering and Materials Science, University Medical Center*, Groningen, The Netherlands, 2011. **Invited Keynote Speaker**.
13. *Tear Film & Ocular Surface Society*, Florence, Italy, 2010.
14. *Gordon Research Conference on Biointerface Science*, Les Diablerets, Switzerland, 2010. **Invited Speaker**.
15. *International Cartilage Repair Society*, San Diego, CA, 2006.
16. *Orthopaedic Research Society*, Chicago, IL, 2006.

17. *Contact Phenomena in Materials and Biological Systems*, Ringberg Castle - Max Planck Society, Germany, 2005. **Invited Speaker** (for PhD Advisor Dr. Robert Sah).
18. *International Cartilage Repair Society*, Gent, Belgium, 2004.
19. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2004. **Invited Short Talk**.
20. *Orthopaedic Research Society*, New Orleans, LA, USA, 2003.

POSTER - INTERNATIONAL & NATIONAL

1. *International Society for Hyaluronan Sciences*, Florence, Italy, 2015.
2. *Gordon Research Conference on Bioinspired Materials*, Newry, ME, 2014.
3. *Association for Research in Vision & Ophthalmology*, Fort Lauderdale, FL, 2014.
4. *International Society for Hyaluronan Sciences*, Oklahoma City, OK, 2013.
5. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2012.
6. *CIHR Institute of Musculoskeletal Health and Arthritis - Young Investigators Forum*, King City, ON, 2012.
7. *Association for Research in Vision & Ophthalmology*, Fort Lauderdale, FL, 2012.
8. *Tear Film & Ocular Surface Society*, Florence, Italy, 2010.
9. *Association for Research in Vision & Ophthalmology*, Fort Lauderdale, FL, 2010.
10. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2010.
11. *Gordon Research Conference on Biology & Pathobiology of the Cornea*, Ventura, CA, 2010.
12. *Gordon Research Conference on Proteoglycans*, Andover, NH, 2008.
13. *Orthopaedic Research Society*, San Francisco, CA, 2008.
14. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2006.
15. *Orthopaedic Research Society*, Washington, DC, 2005.
16. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Andover, NH, 2004.
17. *Orthopaedic Research Society*, San Francisco, CA, 2004.

PODIUM – REGIONAL & LOCAL

1. *University of Calgary Mechanical Engineering Graduate Program Meeting*, Calgary, 2016.
2. *Ophthalmology Grand Rounds, Rocky View Hospital*, Calgary, 2013
3. *Midwest Connective Tissue Workshop*, Chicago, IL, 2007.
4. *UCSD Bioengineering Graduate Students Meeting*, La Jolla, CA, 2004.
5. *UCSD Orthopaedics Research Conference*, La Jolla, CA, 2004.

POSTER - REGIONAL & LOCAL

1. *Midwest Connective Tissue Workshop*, Chicago, IL, 2006.
2. *UCSD Jacobs School of Engineering Research Expo*, La Jolla, CA, 2002-2006.
3. *UCSD Bioengineering Graduate Students Meeting*, La Jolla, CA, 2002-2005.

TRAINEES**POST DOCTORAL FELLOWS***CURRENT**PAST*

1. Suresh Negmi (Supervisor), Faculty of Kinesiology, U Calgary Eyes High PostDoctoral Scholar Award - *Strategic Research Theme: Engineering Solutions for Health*, “Characterization of Molecular Interactions of Synovial Fluid Lubricants & Development of Synovial Fluid Biotherapeutics” Nov 2013 – Nov 2015.
2. Bridgett Steele (Supervisor), Faculty of Kinesiology, NSERC CREATE Award, “Molecular Basis of Cartilage Boundary Lubrication: Contributions of Proteoglycan 4 in Synovial Fluid and at the Articular Cartilage Surface” June 2010 – Dec 2012.

GRADUATE STUDENTS*CURRENT*

1. Kayla Martens (MSc Supervisor), Biomedical Engineering Graduate Program, “The mechanical and biological role of PRG4 ligands” Sept 2016-.
2. Karim Narsingani (MSc Co-Supervisor), Cardiovascular & Respiratory Sciences Graduate Program, “Electrical Regulation of PRG4 and Hyaluronan synthesis by synovial fibroblasts” July 2016- .
3. Austyn Matheson (PhD Supervisor), Biomedical Engineering Graduate Program, “MechanoBiology of PRG4 in equine synovial fluid in health and disease” May 2016- .
4. Anusi Sarkar (PhD Supervisor), Medical Sciences Graduate Program, Eyes High Scholar “Recombinant human PRG4 as a potential anti-metastatic therapeutic protein” Jan 2016 - .
5. Leonardo Martín Alarcón (PhD Supervisor), Biomedical Engineering Graduate Program, QEII NSERC Award, “Rheological Properties of PRG4 and Hyaluronan containing solutions and tissues” September 2015- .
6. Abdulaziz Alarifi (PhD Supervisor), Medical Sciences Graduate Program, “Mechano-Biological Properties of PRG4 in the Vitreous Humour and Potential Therapeutic Applications” September 2015- .
7. Amanda Chan (MSc Supervisor), Biomedical Engineering Graduate Program, NSERC CGS, “Development and Characterization of Novel PRG4-Containing Contact Lens Biomaterials and Commercially Available Contact Lenses” Sept 2015-.
8. Lyndsay Loundagin (PhD Co-Supervisor), Faculty of Kinesiology, Deans Doctoral Scholarship, “Mechanisms of Bone Fatigue” Jan 2015-.

9. Michael Samsom (PhD Supervisor, transferred from MSc), Biomedical Engineering Graduate Program, QEII NSERC Award & NSERC CREATE, “Characterizing the Function of Proteoglycan 4 (PRG4) with and without Hyaluronic Acid as a Novel Ocular Surface Boundary Lubricant & Contact Lens Coating” Jan 2013 (started MSc program September 2011) - .
10. Alyssa Morin (MSc Supervisor), Biomedical Engineering Graduate Program, “Identification and Characterization of Proteoglycan 4 Adherins Synthesized and Secreted by Superficial Zone Chondrocytes ” Sept 2014-.

PAST

11. Shah Iqbal (MSc Co-Supervisor), Biomedical Engineering Graduate Program, QEII NSERC Award, “The Inflammatory Profile of Lubricin” September 2013- Sept 2015.
12. Sam Dorosz (MSc Supervisor), Biomedical Engineering Graduate Program, QEII NSERC Awards, “Effect of Synovial Fluid on Boundary Lubrication at a Meniscus – Cartilage Biointerface ” May 2013-July 2015.
13. Saleem Abubacker (PhD Supervisor), Biomedical Engineering Graduate Program, AIHS Team OA Trainee & The Arthritis Society Graduate Award, “Molecular Basis of Cartilage Boundary Lubrication: Structural Effects of Proteoglycan 4 at the Articular Cartilage Surface” September 2010 – December 2014.
14. Adam Bloom (MSc Supervisor), Biomedical Engineering Graduate Program, NSERC CREATE Award, “Characterizing the Molecular Interactions of Proteoglycan and Hyaluronan in Solution” September 2012 – August 2014.
15. Taryn Ludwig (PhD Supervisor, transferred from MSc), Biomedical Engineering Graduate Program, NSERC CREATE Award & Alberta Innovates Technology Futures, “PRG4 Characterization: Structural Implications for Restoration of Impaired Cartilage Lubricating Ability” May 2011 (started MSc program September 2009) – June 2014.
16. Kristen Barton (4+1 MSc Co-Supervisor), Faculty of Kinesiology, NSERC CREATE Award, “Characterization of Boundary Lubricant Composition & Function in Ovine Synovial Fluid Following Knee Surgery” September 2010 – June 2012.

UNDERGRADUATE STUDENTS

CURRENT

1. Camilla Piatkowski (Supervisor), Biological Sciences, MDSC 508 Undergraduate Honors Thesis, “In Vitro Characterization of Proteoglycan 4 (PRG4) / Lubricin Expression and Synthesis in the Vitreous Humor” September-April, 2016-2017.
2. Kristin Stevens (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Effect of Injury on Lubricant Composition and Function in Equine Synovial Fluid” September-April, 2016-2017.

PAST

3. Matthew Flynn (Supervisor), Alberta Innovates Health Solutions Summer Studentship Award, “Can PRG4-soaked contact lenses lubricate after sterilization?” May-August, 2016.

4. Luke Zhu Zhu (Supervisor), Alberta Innovates Health Solutions Summer Studentship Award, “Role of Proteoglycan 4 (PRG4) / Lubricin on the Rheology of Synovial Fluid” May-August, 2016.
5. Sammy Ahn (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Effect of Counterface of Cartilage Lubrication by PRG4 and Hyaluronan Solutions: Cartilage-Cartilage vs Cartilage-Glass” September-April, 2015-2016.
6. Amanda Chan (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 501 Undergraduate Project, “PRG4 as a scleral lens boundary lubricant” September-Dec, 2014.
7. Janna Haladuick (Supervisor), Faculty of Kinesiology, Program for Undergraduate Research Experience Award, “Synergism of Proteoglycan 4 Multimers with Hyaluronan for Cartilage Boundary Lubrication” May-August, 2014.
8. Allison McPeak (Supervisor), Faculty of Kinesiology, NSERC Undergraduate Student Research Award, “Effect of Shear on Proteoglycan 4 Multimer Biosynthesis by Chondrocytes in Cartilage Explants” May-August, 2014.
9. Miles Hunter (Supervisor), Faculty of Kinesiology, KNES 490 Interpretation of Research & Research Project, “Cartilage Boundary Lubricating Properties of Hyaluronan with Surface Active Phospholipids” September-April, 2013-2014.
10. Nemanja Masala (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Boundary Lubricating Properties of PRG4 on Fresh and Worn Daily Disposable Silicone Hydrogel Contact Lenses” September-April, 2013-2014.
11. Yuno Iwabuchi (Supervisor), Faculty of Kinesiology, NSERC CREATE Award, “PRG4 as a Lubricant in a Tear-Like Solution on Commercially Available Contact Lenses” May-August, 2013.
12. Rachel Malone (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, NSERC CREATE Award, “PRG4 Multimerization: Effect on PRG4’s Cartilage Absorption – Alone and In Combination with Hyaluronan” May-August, 2013.
13. John Eddy (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Effect of Articular Cartilage Surface Fibrillation on Boundary Lubricating Ability of Synovial Fluid” September-April, 2012-2013.
14. Paula Kutzner (Supervisor), Faculty of Kinesiology, KNES 490 Interpretation of Research & Research Project, “Changes in Vitreous Humour PRG4 Expression in an Antigen-Induced Rabbit Model” September-April, 2012-2013.
15. Zen Shikaze (Supervisor), Faculty of Kinesiology, KNES 466 Biomechanics Research Project, “Development and Characterization of an Oral Tissue Boundary Lubrication Test” September-April, 2012-2013.
16. Karen Wong (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, BMEN 501 Undergraduate Project, “Lubrication of Artificial Knee Implant Surfaces” Jan-April, 2013.
17. Amanda Chan (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, Program for Undergraduate Research Experience Award, “PRG4 as a Novel Lubricant of Commercially Available Silicone Hydrogel Contact Lenses” May-August, 2012.

18. Miles Hunter (Supervisor), Faculty of Kinesiology, NSERC Undergraduate Student Research Award, “Recapitulation of Synovial Fluid’s Cartilage Lubricating Ability with Hyaluronan & Lubricin” May-August, 2012.
19. Leah Peterson (Supervisor), Faculty of Kinesiology, “Recombinant Human Proteoglycan 4 (rh-PRG4) as a Novel Implant Surface Lubricant” May-August 2012.
20. Amir Arsany (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Evaluation of Proteoglycan 4 (PRG4) Interactions with the Surface of Articular Cartilage” September-April, 2011-2012.
21. Spencer Chau (Supervisor), Biological Sciences, MDSC 508 Undergraduate Honors Thesis, “Joint Friction Ability of Altered Cartilage Surface and the Characterization of Cartilage Boundary Lubricant Composition & Function of Canine Synovial Fluid Following ACL Transection” September-April, 2011-2012.
22. Sam Dorosz (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, Engineering Internship Student, Undergraduate Student Research Program (USRP) in Health & Wellness in Health & Wellness, “Ocular Surface Boundary Lubrication by Lubricin on Hyaluronan-Coated Contact Lenses” Sept-Sept, 2011-2012.
23. Nemanja Masala (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, NSERC CREATE Award, “Ocular Surface Boundary Lubrication by Lubricin on Hyaluronan-Coated Contact Lenses” May-August, 2011.
24. M Cecilia Alvarez (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Characterization of Proteoglycan 4: Size, Structure and Shape” September-April, 2010-2011.
25. Agnes Soos (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Proteoglycan 4 as an Ocular Surface Boundary Lubricant at an Eyelid - Contact Lens Interface” September-April, 2010-2011.
26. Sheila Morrison (Supervisor), Faculty of Kinesiology, KNES 593 Practicum Experience, “Molecular Mechanisms of Ocular Surface Boundary Lubrication” Sept-Dec, 2010.
27. Sam Dorosz (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, NSERC CREATE Award, “The Effect of Molecular Weight on Hyaluronan’s Cartilage Lubricating Ability – Alone and in Combination with Proteoglycan 4” May-August, 2010.
28. Sheila Morrison (Supervisor), Faculty of Kinesiology, Undergraduate Summer Student, “Lubricin Functions as an Ocular Surface Boundary Lubricant” May-August, 2010.
29. Kristen Barton (Co-Supervisor), Faculty of Kinesiology, Undergraduate Student Research Program (USRP) in Health & Wellness, “Development of an Assay for Proteoglycan 4 (PRG4) Quantification in Synovial Fluid” October-February, 2009-2010.
30. Matthew Bahniuk (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, BMEN 500 Undergraduate Honors Thesis, “Characterization of an Automated Process for the Purification of Proteoglycan 4” September-April, 2009-2010.
31. Brenn Snider (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, BMEN 500 Undergraduate

- Honors Thesis, “Effects of Proteoglycan 4 on boundary lubrication at the ocular surface” September-April, 2009-2010.
32. M Cecilia Alvarez (Supervisor), Schulich School of Engineering, Department of Chemical & Petroleum Engineering – Biomedical Specialization, Undergraduate Student Research Program (USRP) in Health & Wellness in Health & Wellness, “Characterization of lubricin structure and concentration in normal and post knee injury human synovial fluid” May-August, 2009.
 33. Jeremy Kooyman (Supervisor), Schulich School of Engineering, Department of Mechanical & Manufacturing Engineering – Biomedical Specialization, NSERC Undergraduate Student Research Award, “Lubricin Multimers and the Molecular Basis of Articular Cartilage Boundary Lubrication” May-August, 2009.
 34. Nicholas S. Gastelum (Mentor), Department of Bioengineering, California Alliance for Minority Participation in Science, Engineering and Mathematics, “Boundary Lubrication of Articular Cartilage” September, 2003-June, 2006.
 35. Eun Hee Han (Mentor), Department of Bioengineering, McNair Program, “Cytokine Regulation of PRG4 synthesis and secretion by chondrocytes” Jan, 2001-Jan, 2003. Subsequent position, Ph.D. Program, University of California - San Diego, 2005.

HIGH SCHOOL STUDENTS

PAST

1. Holliston Logan (Co-Mentor), Alberta Heritage Foundation for Medical Research, Heritage Youth Research Summer, “Rehabilitation and Osteoarthritis Prevention Following Anterior Cruciate Ligament (ACL) Reconstruction” July-August, 2009.

CONTRIBUTIONS TO SCIENTIFIC MEETINGS

MEETING ORGANIZATION - INTERNATIONAL

1. *International Society for Contact Lens Research 18th Symposium*, Session Co-Chair, Budapest, Hungary 2015.
2. *Orthopaedic Research Society Annual Meeting*, Session Moderator, Las Vegas, NV 2015.
3. *World Congress Biomechanics*, Session Moderator, Boston, MA 2014.
4. *Canadian Connective Tissue Conference*, Scientific Committee Member, Poster Judge, Montreal, QC, 2013.
5. *Orthopaedic Research Society Annual Meeting*, Session Moderator, San Antonio, 2013.
6. *International Cartilage Repair Society*, Staff, San Diego, CA, 2006.
7. *Gordon Research Conference on Musculoskeletal Biology & Bioengineering*, Activity Co-Coordinator, Andover, NH, 2004.

MEETING ORGANIZATION - REGIONAL

1. *Biomedical Engineering Industry Forum*, Panel Moderator, University of Calgary, 2013.
2. *University of Calgary Ophthalmology Research Day*, Judge, University of Calgary, 2013.

3. *Student Union Undergraduate Research Symposium*, Poster Judge, University of Calgary, 2012.
4. *Alberta Biomedical Engineering Conference*, Poster Judge, Banff, AB, 2012.
5. *Alberta Biomedical Engineering Conference*, Poster Judge, Banff, AB, 2011.
6. *Alberta Biomedical Engineering Conference*, Session Chair, Banff, AB, 2010.
7. Faculty of Kinesiology Human Performance Lab Biomechanics Seminar, Chair & Organizer, University of Calgary, Calgary, AB, 2009-2010.
8. *Alberta Biomedical Engineering Conference*, Session Chair, Banff, AB, 2008.
9. *Midwest Connective Tissue Workshop*, Audio-Visual Support, Chicago, IL, 2007.
10. *UCSD Biomedical Imaging Conference*, Audio-Visual Support, La Jolla, CA, 2005.

CONTRIBUTIONS TO JOURNALS, SOCIETIES, GRANTING AGENCIES, BOOKS & WEBSITES

EDITORIAL BOARD MEMBER

Section Editor, Orthopedics and Biomechanics, BMC Musculoskeletal Disorders, 2016

Editorial Board, Biorheology, 2016.

REVIEWER

Journals

Acta Biomaterialia, 2013-

Advances in Tribology, 2009-

Archives of Biochemistry and Biophysics, 2013-

Annals of Biomedical Engineering, 2013-

Archives of Oral Biology, 2013-

Arthritis Research & Therapy, 2015-

Arthritis Rheumatism, 2013-

Artificial Organs, 2013-

Biomechanics and Modeling in Mechanobiology, 2012-

Biotechnology Progress, 2012-

Biotribology, 2015

BMC Musculoskeletal Disorders, 2015

Connective Tissue Research, 2015

Equine Veterinary Journal, 2015-

Experimental Eye Research, 2016-

International Tribology, 2014-

Investigative Ophthalmology & Visual Science, 2016-

Journal of Biomechanical Engineering, 2011 -
Journal of Biomechanics, 2012-
Journal of Biomedical Materials Research: Part B – Applied Biomaterials, 2016-
Journal of Biomaterials Applications, 2012 -
Journal of Orthopaedic Research, 2009-
Journal of Rheumatology, 2011-
Journal of the Royal Society Interface, 2012-
Journal of Undergraduate Research in Alberta, 2012-
Materials and Design, 2015 –
Micron, 2012 –
Osteoarthritis & Cartilage, 2011-
PLoS ONE, 2012 -
Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in
Medicine, 2012 -
Scandinavian Journal of Rheumatology, 2008-
The Ocular Surface, 2015-
Tissue Engineering, 2015-
Tissue Engineering & Regenerative Medicine, 2016-

Granting Agencies

The Arthritis Society / Canadian Arthritis Society

- Post Doctoral Fellowship Competition, 2012.
- Young Investigator Operating Grant, 2013.

Canadian Institutes of Health Research

- Undergraduate: Mobility Musculoskeletal Health and Arthritis, 2013.
- Collaborative Health Research Projects, External Reviewer, 2014, 2016.
- Doctoral Research Awards A, 2014, 2016.
- Canada Research Chair, 2016
- Project Grants, Stage 1 Review, 2017

Canada-Israel Industrial Research & Development Foundation

- Canada-Israel Collaborative Research & Development Project, 2014.

Natural Sciences & Engineering Research Council

- Discovery Grants, External Reviewer, 2012- 2015.
- Collaborative Research and Training Experience – Biomedical Engineers for the 21st Century, University of Calgary, 2013.

Mitacs

- Accelerator Program, External Reviewer, 2016

Meetings

Annual Meeting of the Orthopaedic Research Society

- Abstract reviewer, 2013, 2014, 2015.

Canadian Connective Tissue Conference

- Abstract reviewer, 2013.

University Programs

University of Waterloo, BSc in Biomedical Engineering, External Review, 2013.

CONTRIBUTOR

Tear Film Ocular Surface Society International Workshop on Dry Eye – Tear Film Subcommittee, 2015-2016.

Tear Film Ocular Surface Society Workshop on Contact Lens Discomfort – Contact Lens Materials, Design & Care Subcommittee, 2012-2013.

F1000 (<http://f1000.com>), Rheumatology and Clinical Immunology Faculty, *Associate Faculty Member*, 2011-2013.

PROFESSIONAL EDUCATION

Innovator's Toolkit, Innovate Calgary, Calgary, AB, Feb-March, 2016

Participant, 1 day Project Management Workshop, McCaig Institute for Bone and Joint Health, April, 2015.

Student, Professional Education Short Course (5 day) – Tribology: Friction, Wear, and Lubrication, Massachusetts Institute of Technology, Boston, MA, June, 2015.

PROFESSIONAL SOCIETIES

Association for Research in Vision and Ophthalmology, 2009-present.

Association of Professional Engineers and Geoscientists of Alberta, 2012-present.

Biophysical Society, 2013 – present.

Canadian Arthritis Network, The Arthritis Society 2009-present.

Canadian Orthopaedic Research Society, 2013 – present.

International Society for Contact Lens Research, 2014 – present.

International Society for Hyaluronan Science, 2016 – present.

Orthopaedic Research Society, 2007-present.

Osteoarthritis Research Society International, 2009-present.

Tear Film & Ocular Surface Society, 2010-present.

TEACHING

- BMEN 511: Biomaterials and Biocompatibility, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Fall 2016. *Instructor.*
- BMEN 600: Biomedical Engineering Foundations, Biomedical Engineering Graduate Program, University of Calgary, Oct, 2016. *2 hr Guest Lecturer.*
- BMEN 511: Biomaterials and Biocompatibility, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Fall 2015. *Instructor.*
- BMEN 600: Biomedical Engineering Foundations, Biomedical Engineering Graduate Program, University of Calgary, Sept, 2015. *2 hr Guest Lecturer.*
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Nov, 2015. *20 min Guest Lecture.*
- KNES 466: Biomechanics Research Project, Faculty of Kinesiology, University of Calgary, Fall 2015 & Winter 2016. *Instructor.*
- KNES 503.24: Directed Study – Synovial Fibroblast Electrophysiology, Faculty of Kinesiology, University of Calgary, Fall 2015. *Co-Instructor.*
- KNES 603.22: Bone/Joint Biomechanics and Osteoarthritis, Faculty of Kinesiology, University of Calgary, Fall 2015. *Co-Instructor.*
- MDSC 755.05: Directed Study – Vitreous Humour Physiology, Cumming School of Medicine, University of Calgary, Fall 2015. *Instructor.*
- MDSC 751.31: Bone & Joint Health Course, Medical Sciences Graduate Program, University of Calgary, Oct, 2014. *1.5 hr Guest Lecturer.*
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Oct, 2014. *20 min Guest Lecture.*
- BMEN 611: Fundamentals of Biomedical Engineering – Core Areas, Biomedical Engineering Graduate Program, University of Calgary, Sept, 2014. *2 hr Guest Lecturer.*
- BMEN 500/501F: Biomedical Engineering Research Thesis/Project, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Fall 2014. *Instructor.*
- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2014. *Instructor.*
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, March, 2014. *10 min Guest Lecture.*
- KNES 363: Biomechanics of Biological Materials, Faculty of Kinesiology, University of Calgary, Oct 2013. *1.25 hr Guest Lecturer.*
- KNES 263: Quantitative Biomechanics, Faculty of Kinesiology, University of Calgary, Winter 2013. *Instructor.*
- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2013. *Instructor.*
- BMEN 611: Fundamentals of Biomedical Engineering – Core Areas, Biomedical Engineering Graduate Program, University of Calgary, Sept, 2012. *2 hr Guest Lecturer.*
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Nov, 2012. *10 min Guest Lecture.*
- KNES 263: Quantitative Biomechanics, Faculty of Kinesiology, University of Calgary, Winter 2012. *Instructor.*

- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2012. *Instructor*.
- BMEN 611: Fundamentals of Biomedical Engineering – Core Areas, Biomedical Engineering Graduate Program, University of Calgary, Sept, 2011. *2 hr Guest Lecturer*.
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Oct, 2011. *10 min Guest Lecture*.
- KNES 263: Quantitative Biomechanics, Faculty of Kinesiology, University of Calgary, Winter 2011. *Instructor*.
- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2011. *Instructor*.
- BMEN 103: Biomedical Engineers and Technology in Health Care, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Jan 2011. *1 hr Guest Lecturer – Human Performance Lab Tour Guide*.
- BMEN 611: Fundamentals of Biomedical Engineering – Core Areas, Biomedical Engineering Graduate Program, University of Calgary, Sept, 2010. *2 hr Guest Lecturer*.
- KNES 263: Quantitative Biomechanics, Faculty of Kinesiology, University of Calgary, Winter 2010. *Instructor*.
- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2010. *Instructor*.
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Feb, 2010. *10 min Guest Lecture*.
- BMEN 103: Biomedical Engineers and Technology in Health Care, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Jan 2010. *1 hr Guest Lecturer – Human Performance Lab Tour Guide*.
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Oct, 2009. *10 min Guest Lecture*.
- BMEN 309: Anatomy & Physiology for Engineers, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Winter 2009. *Co- Instructor*.
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Apr, 2009. *10 min Guest Lecture*.
- BMEN 103: Biomedical Engineers and Technology in Health Care, Schulich School of Engineering – Biomedical Specialization, University of Calgary, Jan 2009. *1 hr Guest Lecturer – Human Performance Lab Tour Guide*.
- KNES 213: Introduction to Research in Kinesiology, Faculty of Kinesiology, University of Calgary, Oct, 2008. *10 min Guest Lecture*.

INSTITUTIONAL SERVICE

UNIVERSITY

General Faculties Council Research Scholarship Committee, University of Calgary, 2016-2017.

Faculty of Graduate Studies Council Appeals Committee, Faculty of Graduate Studies, University of Calgary, 2016-2019.

Vanier Scholarship Committee, Faculty of Graduate Studies, University of Calgary, 2015.

University Biomedical Engineering Committee, University of Calgary, 2013-

Strategic University Proposal and Platform Opportunity Review Team (SUPPORT): Research Infrastructure Programs Subcommittee, Office of the Associate Vice President Research, University of Calgary, 2011-2014, 2015-

Margaret Gunn Endowment For Animal Research Committee, University of Calgary, 2010-2012.

Vanier & Banting Scholarship Committee, Faculty of Graduate Studies, University of Calgary, 2010-2013.

Graduate Scholarship Committee, Faculty of Graduate Studies, University of Calgary, 2008-2010.

FACULTY

University of Calgary, Faculty of Kinesiology, Decanal Review Committee, 2016.

University of Calgary, Cumming Institute for Medicine, TENET Innovation to Commercialization (12C) Advisory Committee, 2015-.

University of Calgary, Cumming Institute for Medicine, McCaig Institute for Bone & Joint Director Search Committee, 2015-.

University of Calgary, Faculty of Kinesiology, Graduate Education Committee, 2015-2017.

University of Calgary, McCaig Institute for Bone & Joint Knowledge Translation Committee, 2015-.

University of Calgary, Faculty of Kinesiology, Markin Undergraduate Student Research Project in Health & Wellness Selection Committee, 2014.

University of Calgary, Faculty of Kinesiology, Curriculum Policy Committee, 2014-2015.

University of Calgary, Faculty of Kinesiology, Faculty Promotions Committee & Research and Scholarly Leave Committee - Alternate, 2013-2015.

University of Calgary, Faculty of Kinesiology, Strategic Research and Innovation Committee, 2013-2015.

University of Calgary, Faculty of Kinesiology, Search & Selection Committee for an Exercise Physiologist, 2012-2013 (Associate/Full Professor).

University of Calgary, Schulich School of Engineering, Post Graduate Studies Committee: CBRE Representative, 2012.

University of Calgary, Faculty of Kinesiology, Search & Selection Committee for an Exercise Physiologist (Assistant Professor), 2012.

University of Calgary, Faculty of Kinesiology, Curriculum Review Steering Committee: Member, 2011-2014.

University of Calgary, McCaig Institute for Bone & Joint Health Executive Committee: Faculty of Kinesiology Representative, 2011-2014.

University of Calgary, McCaig Institute for Bone & Joint Health Recruitment Committee: Member, 2011-.

University of Calgary, Biomedical Engineering Graduate Education Committee: Member & Associate Director, 2010-

University of Calgary, Schulich School of Engineering Recruitment Committee: Biomedical Engineering Representative, 2010-2012.

University of Calgary, Faculty of Kinesiology Social Committee: Member, 2010-2011.

University of Calgary, Faculty of Medicine, Department of Surgery, Search & Selection Committee for a Vascular Surgeon: Faculty of Kinesiology Representative, 2010.

University of Calgary, Biomedical Engineering Graduate Program Steering Committee: Member, 2008-2010.

University of Calgary, Schulich School of Engineering Faculty Council: Faculty of Kinesiology Representative, 2008-.

Rush University Medical Center Faculty Council: Instructor Representative, 2007 – 2008.

DEPARTMENT

University of Calgary, Faculty of Medicine, Section of Orthopaedic Surgery, Core Orthopaedic Research Fellowship Grants Review Committee, 2013, 2014.

California Alliance for Minority Participation in Science, Engineering and Mathematics: Graduate Student Panel Member, 2005.

COMMUNITY / OUTREACH & KNOWLEDGE TRANSLATION

PR Newswire “Lubricin Data Demonstrates Significant Improvement in Multiple Signs and Symptoms of Dry Eye Disease Compared to Sodium Hyaluronate”, <http://www.prnewswire.com/news-releases/lubricin-data-demonstrates-significant-improvement-in-multiple-signs-and-symptoms-of-dry-eye-disease-compared-to-sodium-hyaluronate-300330492.html>, Sept 2016.

University of Calgary News & Events: U Today article, “Researcher has his sight set on new treatment for dry eye”, <http://www.ucalgary.ca/utoday/issue/2016-09-20/researcher-has-his-sight-set-new-treatment-dry-eye>, September, 2016.

University of Calgary News & Events: U Today article, “Researchers discover lubricating protein can regulate inflammation”, <http://www.ucalgary.ca/utoday/issue/2016-01-18/researchers-discover-lubricating-protein-can-regulate-inflammation>, January, 2016.

Wood Forum on Knee Injury: A free public even on sports injury prevention, treatment and research, McCaig Institute for Bone and Joint Health, University of Calgary (<http://www.mccaiginstitute.com/woodforum>) & Faculty of Rehabilitation, University of Alberta (<http://blog.ualberta.ca/2015/10/dealing-with-injury-wood-forum-on-knee.html>), Oct 2015. *Guest Speaker*

Schulich School of Engineering – Engineering Associates Breakfast, University of Calgary, Calgary, 2015. *Guest Speaker*

Society of Tribologists and Lubricant Engineers – Calgary Chapter meeting, Faculty of Kinesiology, University of Calgary, Sept, 2015. *Research Demonstration & Lab Tour*.

EyeWorld – The News Magazine of the American Society of Cataract and Refractive Surgery, News and Opinion, “Branching into the ophthalmic space”, <http://www.eyeworld.org/article-branching-into-the-ophthalmic-space>, Magazine Article, June 2015.

TELUS Spark, Meet an Innovator – McCaig Institute for Bone and Joint Health, <http://www.sparkscience.ca/events/special-events-2/meet-an-innovator/> Sept, 2014. *Guest Speaker*

Lunch & Learn: Success with Scholarships, Kinesiology & Biomedical Engineering Graduate Students Association, University of Calgary, Sept, 2014. *Panelist*.

Alberta Innovates Health Solutions, High School Science Teachers Workshop, “Lubricating aching knees and dry eyes”, University of Calgary, March, 2014. *Guest Speaker*.

University of Calgary News & Events: U Today article, “Three faculty members named Canada Research Chairs”, <http://www.ucalgary.ca/utoday/issue/2014-03-31/three-faculty-members-named-canada-research-chairs>, March, 2014.

Graduate Studies – My Grad Skills, Faculty Profile, “Consistent effort the key to research success” <http://grad.ucalgary.ca/monthly-profile/dr-tannin-schmidt>, University of Calgary, March, 2014.

Discovery Days in Health Sciences, “Health Pros Tell All”, Faculty of Medicine, University of Calgary, Oct, 2013. *Panelist*.

Radio Canada International, “Canadian research developing new treatment for eye problems”, <http://www.rcinet.ca/en/2013/05/13/4741/>, May 2013. *Radio Interview*.

U Magazine Spring 2013, “The Game Changers”, University of Calgary, May 2013. *Magazine Article*.

Massachusetts Eye & Ear Press Release, “New Discoveries from Researchers at Mass. Eye and Ear and University of Calgary Hold Promise for Treatments for a Range of Women’s Health Issues”, http://www.masseyeandear.org/news/press_releases/recent/New_Discoveries_Promise_Treatments_for_a_Range_of_Women's_Health_Issues/, April, 2013. *Press Release*.

Picked up my other websites, including but not limited to <http://www.sciencedaily.com>, <http://www.eurekalert.org>

University of Calgary News & Events: U Today article, “Discovery of natural eye lubricant offers promise for more therapies”, http://www.ucalgary.ca/news/utoday/april22-2013/discovery-offers-promise-for-more-therapies?utm_source=UToday&utm_medium=Email&utm_content=textlink&utm_campaign=April-22-2013&utm_term=Discovery-of-natural-eye-lubricant-offers-promise-for-more-therapies, April, 2013.

KNES263 Biomechanics Night - Human Performance Lab, Faculty of Kinesiology, University of Calgary, Apr, 2013. *Research Demonstration & Lab Tour*.

Industry Panel: Bridging Academia and Industry – Commercialization, Careers, and Startups, Kinesiology & Biomedical Engineering Graduate Students Association, University of Calgary, Mar, 2013. *Panelist*.

Discovery Days in Health Sciences, “Health Pros Tell All”, Faculty of Medicine, University of Calgary, Oct, 2012. *Panelist*.

University of Calgary News & Events: U Today article, “Federal Government Invests in Health Research”, <http://www.ucalgary.ca/news/utoday/september25-2012/research>, Sept, 2012.

PR Newswire – United Business Media: ‘Selexis Lubris Partnership Advances Difficult-to-Express Protein Towards Clinic’ (<http://www.prnewswire.com/news-releases/selexis-lubris-partnership-advances-difficult-to-express-protein-towards-clinic-160522835.html>), June 2012. *Spin-Off Company Press Release*.

Picked up by many other websites, including but not limited to: www.investing.businessweek.com, www.marketwatch.com (The Wall Street Journal), www.bio-medicine.org.

- University of Calgary, Faculty of Medicine Annual Research Report: McCaig Institute for Bone & Joint Health 'Team receives osteoarthritis team grant – Lubricating Properties', May, 2012.
- KNES263 Biomechanics Night - Human Performance Lab, Faculty of Kinesiology, University of Calgary, Apr, 2012. *Research Demonstration & Lab Tour.*
- Biomedical Engineering Industry Panel, Startup Companies in Academia, Biomedical Engineering Graduate Students Association, University of Calgary, Mar, 2012. *Panelist.*
- Webber Academy (High School), Calgary, Mar 2012. 'Opportunities and Possibilities in Biomedical Engineering'. *Guest Speaker.*
- University of Calgary News & Events: U Today article, 'Research Opportunities', Samuel Dorosz (USRP Student), Mar, 2012.
- CTV News Calgary: TV interview, 'Research offers relief for dry eyes', Feb, 2012. *Interviewee.*
- Global News Calgary: TV interview, 'Research offers relief for dry eyes', Feb, 2012. *Interviewee.*
- Alberta Primetime: TV interview, 'Dry eye relief', Jan, 2012. *Interviewee.*
- Calgary Herald: newspaper interview, 'Relief found for Calgarians' dry eyes', Jan, 2012. *Interviewee.*
- QR77 Calgary Radio: on-air interview, 'Dry eye relief', Jan, 2012. *Interviewee.*
- University of Calgary News & Events: U Today article, 'New relief for dry eyes', Jan, 2012. *Interviewee.*
- Alberta Innovates – Health Solutions Team OA Grant: Interactive Evening & Global News Advertisement, 'Oh, my aching joints ... the Future of Osteoarthritis Research', Saleem Abubacker (Biomedical Engineering PhD student), University of Calgary, Oct, 2011. *Presenter.*
- University of Calgary Viewbook photo shoot: Undergraduate Student Researcher Sheila Morrison, Faculty of Kinesiology. Apr, 2011. *Supervisor.*
- Alberta Innovates – Health Solutions Team OA Grant: Knowledge Translation (KT) Webinar, <https://aihs.webex.com> 'Water Cooler Series', Mar, 2011. *Presenter.*
- KNES263 Biomechanics Night - Human Performance Lab, Faculty of Kinesiology, University of Calgary, Mar, 2011. *Research Demonstration & Lab Tour.*
- Chancellor's Club Event, Olympic Oval, University of Calgary, Feb, 2011. *Research Demonstration.*
- Open House - Human Performance Lab, Faculty of Kinesiology, University of Calgary, Oct, 2010. *Research Demonstration.*
- Mini University - University of Calgary, Human Performance Lab, Faculty of Kinesiology, Jul, 2010. *Research Demonstration.*
- Alberta Heritage Foundation for Medical Research, Heritage Youth Research Summer, University of Calgary, Human Performance Lab, Faculty of Kinesiology, Jul, 2010. *Research Demonstration.*
- William Aberhart High School - Career Conference Day, Calgary, Apr 2010. *Presenter – Biomedical Engineering.*
- University of Calgary Today & Kinesiology Website, "A Shot to the Knees?", Kristen Barton (Kinesiology USRP Student), Faculty of Kinesiology, University of Calgary, Feb, 2010. *Interview & Video.*

Alberta Heritage Foundation for Medical Research Website, Holliston Logan (Heritage Youth Research Summer Student), University of Calgary, Aug, 2009. *Video Profile*.

Open House - Human Performance Lab, Faculty of Kinesiology, University of Calgary, Oct, 2008. *Tour Guide*.

GRADUATE STUDENT EXAMINATION - COMMITTEE MEMBER

1. Hossein Jiriyaeisharahi <hossein.jiriyaeishar@ucalgary.ca>, Mechanical Engineering Graduate Program, PhD Candidacy Examination, University of Calgary, Oct , 2016.
2. Maria Yamamoto-Engel, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Examination Committee, Sept, 2016
3. Karri Bertram, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Examination Committee, Sept, 2016
4. Leah Allen, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Examination Committee, Aug, 2016
5. Kathrin Boettcher PhD Examination Committee (External Examiner), Faculty of Mechanical Engineering, Technical University of Munich, June 2016.
6. Daniyil Svystonyuk, Cardiovascular & Respiratory Sciences Graduate Program, PhD Candidacy Examination, University of Calgary, May, 2016.
7. Daniel Seijoon Park, Cardiovascular & Respiratory Sciences Graduate Program
 - a. MSc Supervisory Committee, 2016-
8. Jaime De Jesus Resendiz Perez, Mechanical Engineering Graduate Program, PhD Candidacy Examination, University of Calgary, April, 2016.
9. Michael Duval, Biomedical Engineering Graduate Program, PhD Examination Committee, University of Calgary, Aug, 2015.
10. Anita Fung, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Supervisory Committee, 2015-
11. Tylor Walsh, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Supervisory Committee, 2014-
12. Dylan Kobsar, Faculty of Kinesiology, University of Calgary.
 - a. PhD Candidacy Examination, Nov, 2014.
13. Nicole Schrier, Faculty of Kinesiology, University of Calgary.
 - a. MSc Examination Committee, Aug, 2014
 - b. MSc Supervisory Committee, 2013 –
14. Nada Abughazaleh, Biomedical Engineering Graduate Program, University of Calgary
 - a. MSc Examination Committee, July, 2014-
 - b. MSc Supervisory Committee, 2013-
15. Ryan Madsen, MSc Examination Committee, Biomedical Engineering Graduate Program, University of Calgary, July, 2013.

16. Krysta Powers, Biomedical Engineering Graduate Program, University of Calgary.
 - a. PhD Candidacy Examination, July, 2013.
 - b. PhD Supervisory Committee, 2013 -
17. Nathan Solbak, Faculty of Kinesiology, University of Calgary.
 - a. MSc Examination Committee, June, 2013
 - b. MSc Supervisory Committee, 2011 -
18. Bryan Heard, Department of Medical Science, University of Calgary.
 - a. PhD Examination, Apr, 2015.
 - b. PhD Candidacy Examination, Apr, 2013.
 - c. PhD Supervisory Committee, 2011 -.
19. Terri Semler, MSc Examination Committee, Biomedical Engineering Graduate Program, Apr, 2013.
20. Mojtaba Kazemi, PhD Examination Committee, Department of Mechanical & Manufacturing Engineering, University of Calgary, Mar, 2013.
21. Yaghoub Dabiri, PhD Candidacy Committee, Department of Mechanical & Manufacturing Engineering, University of Calgary, Oct, 2012.
22. Ghazaleh Khayat, PhD Examination Committee (External Examiner), Department of Chemical Engineering, McGill University, July 2012.
23. Joshua Kutcher, Faculty of Kinesiology & Department of Medical Science, University of Calgary.
 - a. MSc Examination Committee, Apr, 2012.
 - b. MSc Supervisory Committee, 2009 -
24. Kristen Jorgenson, MSc Examination Committee, Department of Chemical and Petroleum Engineering, University of Calgary, Apr, 2012.
25. Xu Dai, Biomedical Engineering Graduate Program, University of Calgary.
 - a. PhD Candidacy Examination, Sept, 2011.
 - b. PhD Supervisory Committee, 2011 -
26. Kogan Lee, MSc Examination Committee, Biomedical Engineering Graduate Program, University of Calgary, Dec, 2011.
27. Yifuan Yuan, MSc Examination Committee, Biomedical Engineering Graduate Program, University of Calgary, Dec, 2011.
28. Allison Van Winkle, MSc Examination Committee, Department of Chemical and Petroleum Engineering, University of Calgary, Apr, 2011.
29. Bill Wannop, PhD Candidacy Examination Committee, Faculty of Kinesiology, Sept, 2010.
30. Helen Dry, MSc Examination Committee, Department of Chemical and Petroleum Engineering, University of Calgary, Mar, 2010.
31. Cynthia Samaan, MSc Examination Committee, Department of Mechanical and Manufacturing Engineering, University of Calgary, Dec, 2009.
32. Daniel Miller, PhD Examination Committee, Department of Medical Science, University of Calgary, Jan, 2009.

33. Jane Desrochers, PhD Candidacy Examination Committee, Department of Medical Science, University of Calgary, Dec, 2008.

GRADUATE STUDENT EXAMINATION - NEUTRAL CHAIR

1. Kevin Boldt, MSc Defense, Faculty of Kinesiology, Aug, 2016.
2. Maurice Mohr, PhD Candidacy, Faculty of Kinesiology, University of Calgary, May, 2016.
3. Alyssa Mah, MSc Defense, Biomedical Engineering, University of Calgary, Dec, 2015.
4. Quinn Thomson, PhD Defense, Biomedical Engineering, University of Calgary, Sept, 2014.
5. Christina Jablonski, MSc Defense, Faculty of Kinesiology, Apr, 2014.
6. Conrad Tang, MSc Defense, Faculty of Kinesiology, Feb, 2014.
7. Jordyn Vienneau, MSc Defense, Faculty of Kinesiology, Dec, 2013.
8. Bernd Friesenbichler, PhD Defense, Faculty of Kinesiology, Nov, 2013.
9. Talia Webber, MSc Defense, Faculty of Kinesiology, University of Calgary, June, 2013.
10. Megan Hunt, PhD Defense, Biomedical Engineering, University of Calgary, Dec, 2012.
11. Stefan Hoerzer, PhD Candidacy, Faculty of Kinesiology, University of Calgary, Dec, 2012.
12. Saghar Nasr, MSc Defense, Department of Mechanical and Manufacturing Engineering, University of Calgary, Sept, 2012.
13. Geng Luo, PhD Defense, Faculty of Kinesiology, University of Calgary, Apr, 2012.
14. Sarah Richmond, PhD Defense, Faculty of Kinesiology, University of Calgary, Mar, 2012.
15. Bernd Friesenbichler, PhD Candidacy, Faculty of Kinesiology, University of Calgary, Dec, 2011.
16. Madeleine Purves-Smith, MSc Defense, Faculty of Kinesiology, University of Calgary, Aug, 2011.
17. Elysia Davis, MSc Defense, Faculty of Kinesiology, University of Calgary, Nov, 2010.
18. Jeffrey Zahavich, MSc Defense, Faculty of Kinesiology, University of Calgary, Jul, 2010.
19. Sean Osis, MSc Defense, Faculty of Kinesiology, University of Calgary, Jun, 2010.
20. Bjoern Eskofier, PhD Defense, Faculty of Kinesiology, University of Calgary, Apr, 2010.
21. Eveline Graf, PhD Candidacy, Faculty of Kinesiology, University of Calgary, Nov, 2009.
22. Geng Luo, PhD Candidacy, Faculty of Kinesiology, University of Calgary, Sept, 2009.
23. Breda Lau, MSc Defense, Faculty of Kinesiology, University of Calgary, May, 2009.
24. Jane Stewart, MSc Defense, Faculty of Kinesiology, University of Calgary, Mar, 2009.
25. Laura Higgins, MSc Defense, Faculty of Kinesiology, University of Calgary, Dec, 2008.

EXTRACURRICULAR ACTIVITIES & INTERESTS

Long Distance Athlete

Triathlons: Calgary Half Ironman Triathlon, 2009; Ironman Canada Triathlon, 2005; California Vine Man Half Ironman Triathlon, 2003.

Marathons: Philadelphia Marathon, 2010; Chicago Marathon, 2007; Suzuki Rock & Roll Marathon, 2002; Manitoba Marathon, 1999; Tucson Marathon, 1998.

Half marathons: Manitoba Half Marathon, 2013; Calgary Half Marathon, 2010; Manitoba Half Marathon, 2007; Wild Miles 126 Mile Relay, 2004; San Diego Half Marathon, 2001; Toronto International Half Marathon, 1997.

Cycling: El Tour de Tucson 112 Miles, 2004; Solvang 100 Mile Ride, 2003.

Piano

Grade IX Piano Certificate from the Western Board of Music, 1995.

Grade V Theory Certificate from the Western Board of Music, 1995.