

CURRICULUM VITAE
NIGEL GRAHAM SHRIVE

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PERSONAL DATA

Married, 3 children

Education

B.A. 1st Class Honours Degree, Engineering Science, St. Edmund Hall, University of Oxford	1971
M.A.	1976
Doctor of Philosophy, Engineering Science	1974

Current Position

Professor of Civil Engineering	1983-present
Adjunct Professor of Surgery	1981-present
Adjunct Professor of Kinesiology	1999-present
Adjunct Professor, Dept. of Biomedical Engineering, University of Alberta	2003-present

Positions Held

Lecturer in Civil Engineering, Hertford College, Oxford	1973-1974
Department of Civil Engineering, University of Calgary, P.D.F.	1974-1975
Part-time Assistant Professor	1975-1976
Assistant Professor	1976-1979
Associate Professor	1979-1983
Assistant to the Vice-President (Services)	1977-1980
Associate Dean (Student Affairs), Faculty of Engineering	1985-1989
Professor and Head, Dept. of Civil Engineering, University of Calgary	1989-1998
Killam Memorial Professor of the University of Calgary	1999-2011
Acting Director, McCaig Institute for Bone and Joint Health	2008-2009
Director, McCaig Institute for Bone and Joint Health	2009-2014

Visiting Professor

Dept. of Civil Engineering, King's College, University of London, London, U.K.	1981-1982
Cardiff University, UK	2006
University of Newcastle, Australia	2007

Scholarships & Awards

Kitchener Scholar	1968-1971
Scholar of St. Edmund Hall, Oxford	1968-1971
Honorary Scholar of St. Edmund Hall, Oxford	1971-1974
University of Calgary, National Research Council Scholar	1974-1976
Travelling Scholar to University of Petroleum and Minerals	1978
'Superior Teacher', Engineering, University of Calgary	1980
Renee Redfern Hunt Memorial Prize, The Institution of Civil Engineers	1984
Excellence in Research Award, American Orthopaedic Society for Sports Medicine (with others)	1987
Association of Professional Engineers, Geologists & Geophysicists of Alberta	
Voluntary Service Award	1987
First-Year "Best Teacher Award"	1997, 1998, 1999
Faculty of Engineering Research Award	1998, 2001, 2006
Department of Civil Engineering Research Award	1998, 2001, 2006
2000 John B. Scalzi Award, The Masonry Society	2000
Summit Award – APEGGA, Alberta Ingenuity Research Excellence – Bone and Joint, with others	2005
Summit Award – APEGGA, Best Project – Shawnessy LRT Station, with others	2005
Award of Excellence, Alberta Chapter American Concrete Institute – Shawnessy LRT Station, w o	2005

Best Custom Solutions, Precast/Prestressed Concrete Institute, Shawnessy LRT Station, with others	2005
Harry H. Edwards Industry Award – Precast/Prestressed Concrete Institute - Shawnessy LRT Station, with others	2005
CERF Charles Pankow Award for Innovation – Shawnessy LRT Station, with others	2006
International Federation for Structural Concrete: Award for Outstanding Structures - Shawnessy LRT Station, with others	2006
Faculty of Graduate Studies Excellence in Supervision Award	2006
Association of Professional Engineers, Geologists & Geophysicists of Alberta Voluntary Service Award	2008
Elected Fellow of the Canadian Academy of Engineering	2009
Elected Fellow of Engineers Canada	2009
Faculty of Graduate Studies Excellence in Supervision Award	2010
Killam Interdisciplinary Research Prize (with CB Frank) (University of Calgary, first time offered)	2010
Frank Spragins Technical Award, Association of Professional Engineers, Geologists & Geophysicists of Alberta	2011
Killam Interdisciplinary Research Prize (with JV Tyberg) (Univ of Calgary, second time offered)	2011
Canadian Masonry Contractors Association Outstanding Achievement Award	2013
Excellence in Supervision Award, Graduate Students' Association (also nominated for this award in 2008 and 2012, and for the teaching excellence award 2007)	2016
Teaching Excellence Award, Civil Engineering	2016
Elected Fellow of the Royal Society of Canada	2016
Research Excellence Award, Schulich School of Engineering	2017
Professor of the Year, Excellence in teaching, Civil Engineering	2018
HWH West Memorial Award, The International Masonry Society	2018
Excellence in Teaching Award, (for Civil Engineering) Schulich School of Engineering	2018
Professor of the Year, Excellence in Teaching, Civil Engineering	2019
Centennial Leadership Award, Association of Professional Engineers and Geoscientists of Alberta	2019
Graduate Educator Award for Civil Engineering, Schulich School of Engineering	2020
Research Excellence Award, Schulich School of Engineering	2020
Teaching Excellence Award, Schulich School of Engineering	2020
Teaching Excellence Award, Honorary Mention, Students Union, University of Calgary	2021

Professional Affiliations

Professional Engineer:	Registered member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA)
Chartered Engineer:	Registered in the Institution of Civil Engineers, UK
Fellow:	Royal Society of Canada Canadian Academy of Engineering Engineers Canada The Institution of Civil Engineers, UK Canadian Society of Civil Engineers The Masonry Society
Member:	The International Masonry Society

TEACHING

1. Courses Lectured
 - Engineering 203 - Statics
 - Engineering 211 - Design, Technical Communication and Professional Ethics
 - Engineering 249 - Dynamics
 - Engineering 307 - Engineering Mechanics III
 - Engineering 317 - Mechanics of Materials I

Civil Engineering 413 - Civil Engineering Materials I
 Civil Engineering 543 - Introduction to Structural Masonry
 Civil Engineering 547 - Theory of Structures II
 Civil Engineering 551 - Structures II
 Civil Engineering 570 - Final year capstone design project
 Civil Engineering 595.04 - Individual Project (Member judging committee)
 Civil Engineering 617 - Fracture of Civil Engineering Materials
 Civil Engineering 619.25 - Special Problems - Fatigue and Creep
 Civil Engineering 643 - Structural Masonry
 Civil Engineering 649 - Conservation of Historic Structures 1
 Civil Engineering 651- Conservation of Historic Structures 2 (2020 onwards)
 Civil Engineering 651 - Finite Element Modelling (prior to 2016)
 Medical Science 751.31 - Analysis of Biological-Biomechanical Interface of Connective Tissues
 Medical Science 755.95 - Instrumentation for Biomechanics
 Medical Science 755.17 - Mechanics for Physiologists
 Coordinator, Engineering 521 - Engineering for the Environment
 Have given lectures in ENGG 215, Engineering Practice, Design and Communication,
 MDSC 751.31, Joint BioMechanics

2. Other Teaching

- (1) 2018 and 2019 Shad valley program for gifted students – lecture and lab tour
- (2) 2014 Federal University of Sao Carlos, Brazil – Finite element modeling graduate course.
- (3) 2012 Federal University of Sao Carlos, Brazil – Finite element modeling grad course – all lectures videoed, copies of notes, assignments and tutorials provided so that they can teach course again as part of their new structures PhD program.
- (4) 2000, 2001 & 2008 Calgary Science Network – Seminar Workshops on Teaching ‘Structures’ to Jr. High School Teachers
- (5) 2000 Lecture and Lab regarding Biomedical Engineering to Shad Valley Program
- (6) 1999-2001 Class presentations on Structures to City Schools, Grades 3, 7 and 9.
- (7) 1999, 1993 Canadian Professors’ Masonry Workshop, Canada Masonry Centre, McMaster University
- (8) 1986-1987 Lectures on Biomechanics to 1st year Medical students in their Biophysics course
- (9) 1985 Shad Valley Program for Gifted Students
- (10) 1983 “Finite Elements” an introductory seminar, 2-day course, Calgary
- (11) 1981-1982 Year long course, “Mechanics of Materials” Department of Civil Engineering, King’s College, London; whilst on sabbatical leave
- (12) 1981 Lectures in Continuing Education course, “Masonry for the Structural Engineer”, held at the University of Calgary
- (13) 1976-1977 Series of 11 lectures on the application of mechanics to orthopaedics given to Medical Faculty. Level of attendees: Intern to Consultant Surgeon
- (14) 1973-1974 Lecturer in Civil Engineering at Hertford College, Oxford: responsible for teaching students at the college all the mechanics and structural analysis required for the undergraduate degree at Oxford

3. Graduate Supervision

(i) Supervisor of:

N. Khan	to MSc	current
S. Farjad	to PhD	current

B. Haleem	to PhD	current
H. Rathnayake	to PhD	current
A. Ahmed	to PhD	current
G. Iskander	to PhD	current
J. Zhu	to PhD	current
M. Bogoslavov	to MSc	current
S. Rizaee	to PhD	2021
M. Iskander	to PhD	2021
M. Kurukulasuriya	to MSc	2020
P. Vakil	to PhD	2019
A. Rouhi	to PhD	2018
H.Pan	to MSc	2018
M. Shekarforoush	to PhD	2018
P.Kaheh	to PhD	2018
S. Seyedain	to MSc	2017
M. Hudecek	to PhD	2017
J. Sevick	to MSc	2017
L. Burrowes	to PhD	2016
M. El Rayes	to PhD	2016
A. Isfeld	to PhD	2015
B. Heard	to PhD	2015
J. Rosvold	to PhD	2013
M. Atarod	to PhD	2013
B. McIsaac	to MSc	2013
A. Hamedzadeh	to MSc	2013
A. Oan	to PhD	2013
B. Heard	to MSc	2010
M. Sorour	to PhD	2010
A. El Mahdy	to PhD	2010
J. Tapper	to PhD	2009
S. Darcy	to PhD	2009
X. Xiao	to PhD	2008
S. Abdelatif	to PhD	2006
M. Zec	to PhD	2006
R. Howard	to MSc	2004
S. Adeeb	to PhD	2004
A. Ali	to PhD	2004
J. Armitage	to MEng	2004
E. Shaheen	to PhD	2004
R. Bakay	to MSc	2003
B. Scholefield	to MSc	2003
S. Khan	to MEng	2002
C. (Jingyao) Zou	to MSc	2002
J. Yi	to PhD	2002
S. Lissel	to PhD	2001
M. Reda Taha	to PhD	2000
G. Thornton	to PhD	2000
A. Riad	to MSc	1998
S. Grassman	to MSc	1998
C. Petrow	to MEng	1997
D. Tremaine	to MSc	1997

L. Malmqvist	to MSc	1996
E. Sayed-Ahmed	to PhD	1994
E. Wang	to PhD	1994
R. McPherson	to MSc	1994
D. Chimich	to MSc	1993
K.W. Simbeya	to PhD	1992
F. Van der Voet	to PhD	1992
R. Bray	to MSc	1989
W. Eng	to MSc	1989
M. El-Rahman	to PhD	1988
T.C. Lam	to PhD	1986
J. Wall	to MSc	1986
R. Taneja	to MSc	1984
A. Sise	to MSc	1983
M. El-Rahman	to MSc	1983
M.R. Khalil	to PhD	1983
P. Ameny	to PhD	1982

(ii) Co-Supervisor or on Supervisory Committee of:

E. Selman	to MSc (Civ Engg)	
S. Ghazizadeh	to PhD (BME)	
S. Ghasemalizadeh	to MSc (Civ Engg)	
M. Zarrinkoub	to PhD (Civ Engg)	
A. Al Ekkawi	to PhD (Civ Engg)	
M. Ibrahim	to PhD (Civ Engg)	
B. Forrest	to PhD (Civ Engg)	
M. Urroz Lopez	to MSc (BME)	2020
S. Howell	to MSc (BME)	2019
R. Schroeder	to PhD (BME)	2019
B. Ritchie	to MSc (BME)	2017
J. Bhatla	to MSc (BME)	2017
H. Rojob	to PhD (Civ Engg)	2016
K. Abdelrahman	to Ph.D. (Civ. Engg.)	2016
M. Altamimi	to MSc (BME)	2016
R.T. Harris	to PhD (Civ.Engg.)	2016
K. Barton	to PhD (Med. Sc.)	2016
M. Hamedani	to PhD (Civ Engg)	2015
S. Dorosz	to MSc (Kines)	2015
M. Conlan	to PhD (Civ Engg)	2015
F. Oudah	to Ph.D. (Civ Engg.)	2014
D. Chen	to Ph.D. (Civ. Engg.)	2014
S. Mohsen	to Ph.D. (Biomed. Engg.)	2014
O. Yadollahi	to Ph.D. (Civ. Engg.)	2013
G. Buckley-Herd	to M.Sc. (Biomed Engg.)	2013
N. Solbak	to M.Sc (Med Sc.)	2013
K. Huebner	to Ph.D. (Med .Sc.)	2013
S. Burgoyne	to M.Sc (Biomed Engg)	2013
N. Hoque	to M.Sc. (Civ. Engg.)	2013
R. Popal	to M.Sc (Civ.Engg.)	2013
S. Andrews	to Ph.D. (Biomed. Engg.)	2012

K. Barton	to M.Sc (Kines)	2012
C. Bouwmeester	to Ph.D. (Med. Sc.)	2012
J. Beveridge	to Ph.D. (Med. Sc.)	2012
D. Tripathi	to Ph.D. (Civ. Engg.)	2012
A. Gutmann	to Ph.D. (Med. Sc.)	2011
M. El-Seify	to Ph.D. (Civ. Engg.)	2010
J. Thaler	to M.Sc. (Med. Sc.)	2010
B. Yang	to Ph.D. (Biomed Engg)	2009
M. Szarko	to Ph.D. (Med. Sc.)	2009
J. Moroz	to M.Sc. (Civ. Engg.)	2009
D. Gauthier	to Ph.D. (Civ. Engg.)	2008
M. Guzman	to M.Sc. (Civ. Engg.)	2008
A. Elmenshawi	to Ph.D. (Civ. Engg.)	2008
M. Hagel	to Ph.D. (Civ. Engg.)	2007
K. Myers	to Ph.D. (Med. Sc.)	2007
J. Flewitt	to M.Sc. (Med. Sc.)	2006
P. Thompson	to Ph.D. (Civ. Engg.)	2005
A. van Herwignen	to Ph.D. (Civ. Engg.)	2005
L. Dong	to M.Sc. (Geomatics Engg.)	2003
M. Haddad	to Ph.D. (Civil Engg.)	2003
C. Barnsdale	to M.Sc. (Med. Sc.)	2003
Z. Liu	to Ph.D. (Civ. Engg.)	2003
J. Jaremko	to Ph.D. (Med.Sc.)	2002
S. Boyd	to Ph.D. (Mech Eng)	2000
G. Kawchuk	to Ph.D. (Mech. Eng)	2000
G. Nelson	to Ph.D. (Med.Sc.)	1999
M. Maitland	to Ph.D. (Med.Sc.)	1996
N. Wang	to Ph.D. (Civ.Engg.)	1993
S. Sirosh	to Ph.D. (Civ.Engg.)	1992
G.J.W. King	to M.Sc. (Med.Sc.)	1991
T. Weir	to M.Sc. (Med.Sc.)	1991
X.Y. Qui	to Ph.D. (Mech.Engg.)	1991
M. Anton	to Ph.D. (Mech.Engg.)	1991
P. Edwards	to M.Sc. (Med.Sc.)	1990
J. Matyas	to Ph.D. (Med.Sc.)	1990
L. Read	to M.Sc. (Med.Sc.)	1989
S. Vermeulen	to Ph.D. (Mech.Engg.)	1989
S. Walsh	to M.Sc. (Med.Sc.)	1988
F. Schlaepfer	to Ph.D. (Mech.Engg.)	1987
E. O'Brien	to Ph.D. (Civ.Engg.)	1985
K. Simbeya	to M.Sc. (Civ.Engg.)	1985
M. Khalil	to M.Sc. (Civ.Engg.)	1979
P. Ameny	to M.Sc. (Civ.Engg.)	1979

(iii) PhD Candidacy Exams (of students other than above)

M. Gholamirad	M. Swic
S. Ahmed	C. Guss
R. Alfred	K. Pedwell
J. Cormier	T. Aryiawardena
R. Brown	A. Sherif

B. Xu	S. Megally
C. Good	J.Croft
G. Birkle	A. Samieh
L.Chen	Z. Lin
J. Wilson	X. Pan
Z. Liu	N. McLaughlin
K. Forrester	G. Ghoneim
J. Miller	W. El-Degwy
G. Skulmoski	K.M. Suri
S. Rodrigues	A. Elgabry
	D. Butterwick

(iv) Examination of Theses (other than (i) and (ii) above) University of Calgary

L.Rios	MSc (Chem Engg)	2021
N.Morris	MSc (Kines)	2020
K. Varughese	MSc (Civil Engg)	2019
M. Birkland	MSc (Civil Engg)	2019
M. Eghbalian	PhD (Civil Engg)	2019
Q.Chen	PhD (Civil Engg)	2018
P. Joulani	MSc (Civil Engg)	2016
N.Salameh	MSc (Civil Engg)	2015
P.Sun	MSc (Elec Engg)	2015
M. Harandi	MSc (Civil Engg)	2015
S. Rizaee	MSc (Civil Engg)	2015
R. Ford	MSc (Civil Engg)	2014
M. Hadiseraji	MSc (Civil Engg)	2013
M. Aghahassani	MSc (Civil Engg)	2013
K.Barton	MSc (Biomed Engg)	2012
R. Maalek	MSc (Civil Engg)	Nov 2012
J. Scherpenisse	MSc (Civil Engg)	Jan 2012
A. Melnikov	MSc (Mech Engg)	Dec 2011
P. Zanganeh	MSc (Civil Engg)	2011
M. Mashrik	MSc (Civil Engg)	2011
K Lincoln	MSc (Civil Engg)	2010
D. Chen	MSc (Civil Engg)	2010
C.Ross	MSc (Civil Engg)	2010
C.K. Fu	MSc (Biomed Engg)	2009
D.Talinga	PhD (Geoscience)	2009
H.Sadek	MSc (Civil Engg)	2009
H.Zeki	MSc (Civil Engg)	2009
S.Joon	PhD (Chem. and Pet Engg)	2009
S. Bailey	MSc (Biomed Engg)	2009
H. Sadek	MSc (Civil Engg)	2008
B.A. Baghbaderani	PhD (Chem and Pet Engg)	2008
M. Hons	MSc (Geo Sci)	2008
J. Floyer	PhD (Geo Sci)	2008
R. Brown	PhD (Biomed Engg)	2008
C.Yuen	MSc (Civil Engg)	2007
M. Emam	MSc (Civil Engg)	2007
Y. Zheng	PhD (Geology/Geophys)	2006
A. Gayevoy	MSc (Civil Engg)	2006
D. Tiwari	MSc (Civil Engg)	2005

J. Baumeister	MSc (Geology)	2005
C. Scovil	PhD (Mech Engg)	2004
H. Yadete	MSc (Civil Engg)	2004
K. Han	MSc (Mech.Engg)	2003
Z. Liu	PhD (Biomed Engg)	2003
G. Wohl	PhD (Mech Engg)	2003
C. Sun	MSc (Mech.Engg)	2002
C. Dussault	MSc (Civil/BME Engg)	2002
S. Couillard	MSc (Mech/BME Engg)	2002
B. Kralovic	MSc (Mech.Engg)	2000
B.C. Johnson	MSc (Civil Engg)	2000
Sergio Rodrigues	PhD (Psych)	1999
Dominic Young	MSc (Mech/BME Engg)	1998
M. Forcintito	PhD (Mech. Engg)	1997
S. Baker	M.Sc. (MDCV)	1996
A. Illincuta	M.Sc. (Civil Engg)	1996
X. Zhong	M.Sc. (Civil Engg)	1994
J. Springer	M.Sc. (Mech.Engg)	1994
S. McFadden	M.Sc. (Med.Sc)	1994
A. Coffin	M.Sc. (Civil Engg.)	1992
H. Licorish	Ph.D. (Geol.Geophys)	1992
G. Scrimgeour	Ph.D. (Bio Sc)	1992
E. Wackerle	M.Sc. (Civil Engg)	1991
C.M. Pollock	M.Sc. (Bio Sc.)	1991
A.A. Elgabry	Ph.D. (Civil Engg)	1990
A.K-H. Wu	Ph.D. (Civil Engg)	1990
T. Allinger	M.Sc. (Mech.Engg)	1990
M. McDonough	Ph.D. (Geol/Geophs)	1989
A.S. Ayoub	M.Sc. (Civil Engg)	1989
J. Chieslar	Ph.D. (Civil Engg)	1985
C. Woo	M.Sc. (Mech.Engg)	1985
R.J. Gray	Ph.D. (Civil Engg)	1982
A. Daniel	M.Sc. (Civil.Engg)	1978
P.M. Gifford	M.Sc. (Civil Engg)	1977

(v) MEng Comprehensive Examinations

B. Fanjeh	(Civil Engineering)	Apr 2011
P. Phillips	(Civil Engineering)	Apr 2011
S. Li	(Civil Engineering)	
E. Elfazari	(Civil Engineering)	
G.Jia	(Civil Engineering)	
H. Otoufi	(Civil Engineering)	
M. Freeman	(Civil Engineering)	
K. Jaska	(Civil Engineering)	
L. Garrett	(Civil Engineering)	
D. Au	(Mech Engineering)	

(vi) Examination of Theses External to the University of Calgary

N. Aly	PhD (CE)	Concordia University, Canada
M. Tohidul Islam	PhD (CE)	University of Alberta, Canada
A. Siam	PhD (CE)	MacMaster University, Canada

X. Chen	PhD (CE)	Dalhousie University, Canada
MAG Abdelmaksoud	PhD (CE)	Ain Shams University, Egypt
H. Seif ElDin	PhD (CE)	Concordia University, Canada
J. Centeno	PhD (CE)	University of British Columbia, Canada
T. Janaraj	PhD (CE)	Queensland University of Technology, Australia
D.Dizhur	PhD (CE)	University of Auckland, New Zealand
Li-Tze Brendon Soh	PhD (CE)	University of Queensland, Australia
I. Aldous	PhD (BME)	Dalhousie University, Canada
Lihai Zhang	PhD (BME)	University of Melbourne, Australia
Kin Hong Ip	PhD (CE)	University of Technology, Sydney, Australia
Y. Han	PhD (CE)	University of Newcastle, Australia
P.A. Sing-Sang	PhD (CE)	University of Newcastle, Australia
H.Liu	PhD (BME)	Cardiff University, Wales, UK
D. Viens	PhD (BME)	University of Waterloo, Canada
Z. Taylor	PhD (BME)	The University of Western Australia, Australia
W. Haider	PhD (CE)	Central Queensland University, Australia
D.J. Sutcliffe	PhD (CE)	University of Newcastle, Australia
S. Olsen	PhD (BME)	Queensland University of Technology, Australia
H. Sugo	PhD (CE)	University of Newcastle, Australia
Craig Simmons	PhD (M&IE)	University of Toronto, Canada
Mark Masia	PhD (CE)	University of Newcastle, Australia
Deborah Young	MSc (BME)	McGill University, Canada
A.R.M. Muniruzzaman	PhD (CE)	University of Newcastle, Australia
R. van der Pluijm	PhD (CE)	Tech. University of Eindhoven, Netherlands
R. Wang	PhD (CE)	University of Alberta, Canada
P. Hubsch	PhD (CE)	University of Swansea, Wales, UK
K. Sakr	PhD (CE)	University of Saskatchewan, Canada

SCHOLARSHIP

I Refereed Journal Papers.

1. Medeiros, K.A.S., Parsekian. G.A., Shrive N.G., Fonseca, F.S., "Shear load capacity prediction of unperforated and perforated partially grouted masonry walls" *Engineering Structures*, 256, 113927, 2022
2. Veronese, R.B.A., Madeiros, W.A., Parsekian. G.A., Shrive N.G." Numerical Analysis of Eco-friendly Ductile Cementitious Composite Influence on Structural Masonry Reinforcement" *Engineering Structures*, 252, 113686, 2022
3. Hart, D. A., Nakamura, N., Shrive, N.G. "Perspective: Challenges Presented for Regeneration of Heterogeneous Musculoskeletal Tissues that Normally Develop in Unique Biomechanical Environments" *Frontiers in Bioengineering and Biotechnology*, 9, 760273, 2021
4. Heard, B.J., Barton, K.I., Abubacker, S., Chung, M., Martin, C.R., Schmidt, T.A., Shrive, N.G., Hart, D.A. "Synovial and Cartilage Responsiveness to Peri-Operative Hyaluronic Acid +/- Dexamethasone Administration Following a Limited Injury to the Rabbit Stifle Joint" *Journal of Orthopaedic Research*, pub-on-line, June 2021
5. Hart, D.A., Martin, C.R., Scott, M., Shrive N.G., "The Instrumented Sheep Knee to Elucidate Insights into Osteoarthritis Development and Progression: A Sensitive and Reproducible Platform for Integrated Research Efforts" *Clinical Biomechanics*, 87, 105404, 2021

6. Rizaee, S., Lissel, S.L., Shrive N.G., “The Effect of the Amount, Distribution and End Anchorage Conditions of Bond Beam Reinforcement on the Behaviour of Concrete Masonry Shear Walls” *Canadian Journal of Civil Engineering*, Pub-on-line, Dec 2020.
7. Medeiros, K.A.S., Chavez, K.H., Fonseca, F.S., Parsekian, G.A., Shrive, N.G., “Parametric study of multi-story, perforated, partially grouted masonry walls subjected to in-plane cyclic actions” *Canadian Journal of Civil Engineering*, 48 (8), 1046-1055, 2021.
8. Iskander, M., Shrive, N.G., “Fracture of Brittle Materials Containing Multiple Voids Subject to Uniaxial Compression” *Building and Construction Materials*, 290, article 123217, 2021.
9. Kurukulasuriya, M., Shrive N.G., “Flat Arch masonry Retaining wall” *Masonry International*, 33 (3), 64-74, 2021. (winner, 2020 best graduate project award, International Masonry Society)
10. Vakiel, P., Shekarforoush, M., Dennison, C., Scott, M., Muensch, G., Hart, D.A., Shrive, N.G. “Mapping Stresses on the Tibial Plateau Cartilage in an Ovine Model Using in vivo Gait Kinematics” *Annals of Biomedical Engineering*, 49 (5), 1288-1297, 2021.
11. Vakiel, P., Dennison, C., Shekarforoush, M., Scott, M., Hart, D.A., Shrive, N.G. “Measuring the internal stress in ovine meniscus during simulated in vivo gait kinematics: a novel method using fibre optic technology” *Annals of Biomedical Engineering*, 49 (4), 1199 – 1208, 2021.
12. Barton, K.I., Heard, B.J., Kroker, A., Sevick, J.L., Raymond, D., Chung, M., Achari, Y., Martin, C.R., Frank, C.B., Boyd, S.K., Shrive, N.G., Hart, D.A., “Structural Consequences of A Partial Anterior Cruciate Ligament Injury On Remaining Joint Integrity: Evidence For Ligament And Bone Changes Over Time in an Ovine Model” *American Journal of Sports Medicine*, 49 (3), 637 - 648, 2021.
13. Barton, K.I., Chung, M., Frank, C.B., Shrive, N.G., Hart, D.A., “Methylprednisolone Acetate Mitigates IL1 β Induced Changes in Matrix Metalloproteinase Gene Expression in Skeletally Immature Ovine Explant Knee Tissues” *Inflammation Research*, 70 (1), 99 - 107, 2021.
14. Isfeld, A.C., Mueller, A.L., Hagel, M., Shrive, N.G., “Testing and Finite Element Modelling of Concrete Block Masonry Walls under Axial and Out-of-Plane Loading” *International Journal of Masonry Research and Innovation*, 6 (1), 60-80, 2021.
15. Vakiel, P., Shekarforoush, M., Dennison, C., Muensch, G., Scott, M., Hart, D.A., Shrive, N.G. “Correlation of Damage Score in PTOA with Changes in Stress on Cartilage in an Ovine Model” *Osteoarthritis and Cartilage Open*, 2 (4), Article 100109, 2020.
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II Camera Ready Papers In Refereed Conference Proceedings

1. Hudecek, M., Shrive N.G., Skabar, K., “Design Guidelines for Spatial Arch Bridges with Inferior Decks Considering the Effects of Thermal Loads and the Variability in Arch and Deck Geometry” Proceedings, 11th International Conference on Short and Medium Span Bridges, CSCE, Toronto July 2022
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4. Ahmed, A., Iskander, G., Bogoslavov, M., Isfeld, A.I., Shrive, N.G. “Examining the Mode of Failure of Slender Concrete Block Walls” Proceedings, 14th Canadian Masonry Symposium, 11 pp, 2021.
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17. Shrive, N.G., “Materials and Material Properties”, Chapter 2 of Reinforced and Prestressed Masonry, Ed. A.W. Hendry, Longmans, 25-57, 1991.
18. B.M. Irons and N.G. Shrive, “Finite Element Primer”, Ellis Horwood, Publishers, 157 pp., 1983.
19. B.M. Irons, N.G. Shrive, “Numerical Methods in Engineering and Applied Science (Numbers are Fun)”, Ellis Horwood Publishers, 248 pp., 1987.

V Review

1. “Failure Modes for Eccentrically Loaded Concrete Block Masonry Walls”, by Hatzinikolas, M., Warwaruk, J., Longworth, J., Journal of the American Concrete Institute, 78, 3, 239, 240, 1981.

VI Invited, Non-Reviewed Papers

1. Shrive N.G., Tyberg, J.V., “A Different View of Cardiovascular Hæmodynamics” Open Access Government, 178-179, Oct 2021.
2. Shrive N.G., Hart D.A. "Osteoarthritis: Innovation in biomechanics, biology and imaging." Open Access Government, 110-113, April 2021.
3. Lo, I.K.Y., Randle, JA, Majima, T. Thornton, G., Rattner, J.B., Shrive, N.G., Frank, C.B. and Hart, D.A. "New directions in understanding and optimizing ligament and tendon healing", Current Opinion in Orthopaedics, Vol. 11, pp. 421-428, 2000.
4. Reda Taha, M.M., Shrive, N.G., “Foam Mortars”, Annual Masonry Review, Canadian Masonry Contractors Association , 2000.
5. Shrive, N.G. “The ISIS NCE”, Annual Masonry Review, Canadian Masonry Contractors Association, 1999.

6. Reda Taha, M.M., Shrive, N.G., “Cheaper Better Mortar”, Annual Masonry Review, Canadian Masonry Contractors Association, pp. 56., 1999.
7. Frank, C.B., Shrive, N.G., “Ligament Biology, Repair and Transplantation”, Current Opinion in Orthopaedics, Vol. 7, No. 6, pp. 50-56, 1996.
8. Schachar, N.S., McGann, L.E., Shrive N. “Cryo Preservation of Articular Cartilage for Transplantation”, Current Opinion in Orthopaedics, 4, V, pp. 90-97, 1993.
9. Frank, C.B., Shrive, N.G., Bray, R. “Ligament Healing: A Review of Some Current Clinical and Experimental Concepts”, Iowa Orthopaedic Journal, 12, 21-28, 1992.
10. N.G. Shrive, “Measuring Strain on Soft Tissues”, Proceedings, Canadian Medical & Biological Engineering Society, Workshop on Strain, Banff, 87-96, 1991.

VII Abstracts/Poster Presentations

1. Vakiel, P., Shekarforoush, M.M., Martin, C.R., Scott, M., Dennison, C.R., Hart, D.A., Shrive, N.G. “Addressing the Challenge of Understanding the Development and Progression of Osteoarthritis - The Need to Integrate Biomechanics, Biology and Imaging” OARSI Connect-Virtual meeting, 2021
2. Huducek, M., Shrive, N.G., Skabar, K., “Design Guidelines for Spatial Arch Bridges with an inferior deck considering thermal loads and variability in arch and deck geometry” International Bridge Conference, Engineer’s Society of Western Pennsylvania” 2020
3. Shekarforoush, M.M., Barton, K.I., Beveridge, J.E., Heard, B.J., Martin, C.R., Hart, D.A., Shrive, N.G. “Kinematic translational instability is more significantly correlated to the osteoarthritis-like damage than are rotational instabilities in two in vivo sheep ACL injury models” Poster presentation, 8th World Congress of Biomechanics, Dublin, Ireland, July 2018
4. Pasquantonio, R., Parsekian, G. A., Fonseca, F. S., Shrive, N. G. “Parameters of Characterization of Masonry of Concrete Blocks of Small Scale” Proceedings 60th Brazilian Concrete Congress, Iguassu Falls, Parana, 2018.
5. Vakil, P., Dennison, C.R., Shrive, N.G., “A Novel Approach to Measuring Stresses on the Knee cartilage Using Fiber-optic Technology” Computer Methods in Biomechanics and Biomedical Engineering, Lisbon, 2018.
6. Shekarforoush, M., Beveridge, J., Barton, K.I., Heard, B.J., Sevick, J., Martin, R., Hart, D.A., Frank, C.B., Shrive, N.G. “The Magnitude of Change in Joint Angular Velocity after Injury Correlates with Osteoarthritis Development: A Longitudinal in vivo Study in two Sheep Models” Annual Meeting of the Orthopaedic Research Society, New Orleans 2018.
7. Sevick, J., Abusara, Z., Agbojo, O., Andrews, S.H.J., Shrive, N.G. “The Fibre-Level Load Response and Composition of the Rabbit Medial Collateral Ligament Femoral Entesis” Annual meeting of the Orthopaedic Research Society, San Diego, 2017.
8. Barton, K.I., Shekarforoush, M., Heard, B.J., Sevick, J., Martin, C.R. , Frank, C.B., Hart, D.A., Shrive, N.G. “*In vivo* kinematics of the ovine knee joint following partial anterior cruciate ligament transection” International Society of Biomechanics, Brisbane, 2017.

9. Barton, K.I., Raymond, D.A., Kroker, A., Heard, B.J., Sevick, J.L., Chakravarty, D., Martin, C.R., Frank, C.B., Boyd, S.K., Shrive, N.G., Hart, D.A. “Bone Mineral Density Alterations Significantly Correlate with Longer Term Gross Morphological Changes in the Tibial Plateaus in an Ovine Model of Post Traumatic Osteoarthritis” Annual meeting of the Orthopaedic Research Society, San Diego, 2017.
10. Vakil, P., Shekarforoush, M., Muench, G., Scott, M., Achari, Y., Dennison, C.R., Shrive, N.G. “Application of Fiber-optical Sensors to Quantify Mechanical Stress in the Knee”, Annual Alberta BME meeting, Banff, 2017.
11. Quan, K.K., Barton, K.I., Chung, M., Heard, B.J., Achari, Y., Shrive, N.G., Hart, D.A., “Histological Changes in the Ovine Patellar Tendon Following Idealized Anterior Cruciate Ligament Reconstruction Surgery” Osteoarthritis Research Society International (OARSI), Annual Meeting, Amsterdam, 2016. (*Osteoarthritis and Cartilage*, 24(Suppl 1): S411-412. DOI: <http://dx.doi.org/10.1016/j.joca.2016.01.741>)
12. Barton, K.I., Chung, M., Achari, Y., Shrive, N.G., Hart, D.A., “Glucocorticoids Effectively Inhibit IL-1 β Induced Metalloproteinase Expression in Tibial Plateau Articular Cartilage in a Sheep Model” Osteoarthritis Research Society International (OARSI), Annual Meeting, Amsterdam, 2016. (*Osteoarthritis and Cartilage*, 24(Suppl 1): S504. DOI: <http://dx.doi.org/10.1016/j.joca.2016.01.921>)
13. Barton, K. I., Norman, J. L., Heard, B.J., Shekarforoush, M., Atarod, M., Sevick, J., Achari, Y., Frank, C.B., Hart, D.A., Shrive, N.G. “Long Term *In Vivo* Kinematics of the Ovine Stifle Joint Following Anterior Cruciate Ligament Transection” Annual Meeting of the Orthopaedic Research Society, Orlando, 2016.
14. Sevick, J., Heard, B., Lo, I., Frank, C., Shrive, N.G., Thornton, G. “Contrasting Effects of Re-Injury on the Structural and Material Properties of the Rabbit Medial Collateral Ligament” International Symposium on Ligaments and Tendons Podium Presentation, Orlando 2016
15. Heard, B.J., Barton, K.I., Abubacker, S., Chung, M., Achari, Y., Schmidt, T.A., Shrive, N.G., Hart, D.A., “A Single Administration of Hyaluronic Acid with Dexamethazone to Protect Cartilage in a Rabbit Model of Post-traumatic Osteoarthritis” Annual Meeting of the Orthopaedic Research Society, Orlando, 2016.
16. Andrews, S.H., Ziad, A., Chung, M., Rattner, J.B., Herzog, W., Shrive, N.G., Adesida, A., “Insights on Human Meniscus Structure and Cellularity: Implications for Aging and Injury” Annual Meeting of the Orthopaedic Research Society, Orlando, 2016.
17. Shekarforoush, S.M.M., Barton, K.I., Atarod, M., Heard, B.J., Sevick, J., Hart, D.A., Shrive, N.G. “An analytic method for analysis of the three dimensional linear and angular velocity of the knee joint” Alberta Biomedical Engineering Symposium, Banff, 2015.
18. Sevick, J., Heard B.J., Shrive, N.G., Thornton, G. “Are re-injured ligaments as strong as singly injured ligaments?” Alberta Biomedical Engineering Symposium, Banff, 2015.
19. Norman J.L., Barton, K. I., Atarod, M., Shekarforoush, M., Heard, B.J., Sevick, J., Achari, Y., Frank, C.B., Hart, D.A., Shrive, N.G. “Long Term *In Vivo* Kinematics of the Ovine Stifle Joint Following Anterior Cruciate Ligament Transection” Alberta Biomedical Engineering Symposium, Banff, 2015.

20. Isfeld, A.C., Shrive, N.G., “Economic and Other Benefits Accrue from Collaborative Research”, Heritage Energized: National Trust Conference, Calgary, 2015.
21. Shrive, N.G., Achari, Y., Atarod, M., Barton, K.I., Beveridge, J., Heard, B.J., Huebner, K., Schmidt, T.A., Frank, C.B., Hart, D.A. “Causes of the initiation and progression of post-traumatic osteoarthritis” World Congress on Controversies, Debate & Consensus in Bone, Muscle & Joint Diseases, 2015
22. Burrowes, L. M., Satriano, A., Thompson, R., Shrive, N., Tyberg, J. V., “Analysis of left ventricular filling dynamics” Presented at “Artery 15”, Krakow, Poland; published in Artery Research, 12, p 6. <http://doi.org/10.1016/j.artres.2015.10.206>, 2015.
23. Barton, K.I., Heard, B.J., Chung, M., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A. “Analysis of Articular Cartilage after Anterior Cruciate Ligament Reconstructive Surgery with Dexamethasone Treatment” 6th Annual University of Calgary Leaders in Medicine Research Symposium. Clinical & Investigative Medicine, 2015.
24. Atarod M, Heard BJ, Beveridge JE, O’Brien EJ, Shrive NG. “Gait Variability Parameter as a Measure to Distinguish Low and High-Risk OA Subjects” Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Montreal, 2015.
25. Heard B.J., Beveridge J.E., Atarod M., O’Brien E.J., Rolian C., Frank C.B., and Shrive N.G. “Absolute Total Change in Combination with Principal Component Analysis as a Method of Kinematic Gait Analysis” CMBBE, Montreal, 2015.
26. Burrowes, L.M., Satriano, A., Thompson, R., Shrive, N., Tyberg, J. V., “Analysis of left ventricular filling dynamics” Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Montreal, 2015.
27. Achari Y., Atarod M., Barton K., Beveridge J., Heard B., Huebner K., Schmidt T., Frank C., Hart D., Shrive N. “Causes of the Initiation and Progression of Post-Traumatic Osteoarthritis” 3rd World Congress on Controversies, Debates and Consensus in Bone Muscle and Joint Diseases (BMJD), Montreal, 2015.
28. Sevick J., Shrive, N.G., “Proposed Research for the Development of a Validated Computational Model of the Ligament to Bone Insertion Using Second-Harmonic Generation Microscopy” Canadian Connective Tissue Conference, Quebec, 2015
29. Heard, B.J., Barton, K.I., Chung, M., Achari, Y., Shrive, N.G., Frank, C.B., Hart, D.A.”Administration of a Single Intra-Articular Dose of Dexamethazone Mitigates the Impact of PTOA-like Changes: A Histologic Study in a Rabbit Model” Osteoarthritis Research Society International (OARSI), Annual Meeting, Seattle, 2015.
30. Barton, K.I., Chung, M., Heard, B.J., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A. “Mediation of Inflammation Induced Early Protease Activity in Knee Joint Explants Through Timely Intervention with Glucocorticoids” OARSI, Annual Meeting, Seattle, 2015.
31. Beveridge, J.E., Bhatla, C., Sharma, G., Kuntze, G., Shrive, N.G., Frank, C.B., Ronsky, J.L. “Preliminary Evidence Supporting Shared Mechanical Abnormalities in ACL-Deficient Human and Ovine Knees” Orthopaedic Research Society, 2015.

32. Atarod, M., Rosvold, J., Frank C.B., Shrive, N.G., “Reproduction of In-Vivo Gait Using a Novel Robotic Manipulator and Accuracy of the Tissue Forces Determined” Orthopaedic Research Society, 2015.
33. Barton, K.I., Heard, B.J., Chung, M., Achari, Y., Shrive, N.G., Frank, C.B., Hart, D.A. “Analysis of Articular cartilage after anterior cruciate ligament reconstructive surgery with dexamethazone treatment: a pilot study” AIHS Osteoarthritis team meeting, 2014.
34. Heard, B.J., Barton, K.I., Chung, M., Achari, Y., Shrive, N.G., Frank, C.B., Hart, D.A. “A single administration of dexamethasone may protect tibial plateau cartilage in a mechanically stable surgical model of post-traumatic Osteoarthritis” AIHS Osteoarthritis team meeting, 2014.
35. Barton, K.I., Heard, B.J., Chung, M., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A. “Gross Morphological and Histological Analysis of Articular Cartilage after Anterior Cruciate Ligament Reconstructive Surgery with Dexamethasone Treatment. Canadian Society for Clinic Investigation” Clinician Investigator Trainee Association of Canada Annual Meeting. Toronto, Canada, November 24-26, 2014.
36. Shekarforoush, S.M.M., Frank, C.B., Shrive, N.G., “Do changes in the relative velocity of the joint surfaces following ACL and ACL/MCL transection relate to changes in the cartilage?” 20th Canadian Connective Tissue Conference, London, Ontario, 2014.
37. Shekarforoush, S.M.M., Atarod, M., Frank, C.B., Shrive, N.G., “Investigating various statistical designs in studying Biomechanics of joints” 1st Annual McCaig Meeting on Osteoarthritis and Musculoskeletal Diseases, 2014.
38. Shekarforoush, S.M.M., Atarod, M., Frank, C.B., Hart, D.A., Shrive, N.G., “A research proposal about the association between the development of osteoarthritis and changes in the relative velocity of joint surfaces following Anterior Cruciate Ligament (ACL) and Medial Collateral Ligament (MCL) transection” Alberta Biomedical Engineering Conference, Banff, Canada, October, 2014.
39. Vakil, P., Atarod, M., Achari, Y., Dennison, C.R., Frank, C.B., Shrive, N.G., “Application of fiber-optic sensor technology to detect abnormal stress on the cartilage covering the knee joint” Alberta Biomedical Engineering Conference, Banff, Canada, October, 2014.
40. Andrews, S., Abusara, Z., Shrive, N.G., Rattner, J.B., Herzog, W., Adesida, A., “Age effects on meniscal allograft viability” Gordon Conference on Musculoskeletal Biology and Bioengineering, Bridging the disciplines, 2014.
41. Isfeld, A.C., Shrive, N.G., “Finite Element Model of Grout Injection in Stone Masonry Walls” Simulia Community Conference, Providence RI, May 2014.
42. Atarod, M., Frank C.B., Shrive, N.G., “Loads in the Soft Tissues of the Ovine Stifle Joint During Gait” Mechanobiology of Soft and Hard Tissues mini symposium, Engineering Mechanics Institute Conference, McMaster University 2014.
43. Atarod, M., Frank C.B., Shrive, N.G., “Changes in Synovial Fluid Composition and Function with Time after Joint Injury”, Mechanobiology of Soft and Hard Tissues mini symposium, Engineering Mechanics Institute Conference, McMaster University 2014.

44. Barton, K.I., Weibe, M., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A., "Patterns of meniscal pathology following concurrent transection of cruciate and collateral ligaments" European Society for Sport Traumatology, Knee Surgery and Arthroscopy, Amsterdam, 2014.
45. Heard B.J., Barton, K.I., Chung, M., Achari, Y., Shrive, N.G., Frank, C.B., Hart, D.A., "A Single Administration of Dexamethasone may Protect Tibial Plateau Cartilage in a Mechanically Stable Surgical Model of Post Traumatic Osteoarthritis" Osteoarthritis Research Society International, Paris, 2014.
46. Barton, K.I., Heard, B.J., Solbak, N.M., Chung, M., Achari, Y., Shrive, N.G., Hart, D.A., Frank, C.B., "Synovial Tissue exhibits molecular heterogeneity in response to intraarticular knee joint surgery" Osteoarthritis Research Society International, Paris, 2014.
47. Barton, K.I., Weibe, M., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A., "Comparative Evaluations of matrix alterations in the ovine menisci following joint injury or reconstructive surgery" Osteoarthritis Research Society International, Paris, 2014.
48. Beveridge, J.E., Anderson, B., Ronsky, J.L., Shrive, N.G., Frank, C.B., "Cartilage thickening occurs in both unloaded and new tibiofemoral contact regions in injured sheep" Osteoarthritis Research Society International, Paris, 2014.
49. Solbak, N.M., Achari, Y., Chung, M., Heard, B.J., Shrive, N.G., Frank, C.B., Hart, D.A., "Injury induced inflammation has distinct effects on adipokine expression levels in the infrapatellar fat pad after idealized anterior cruciate ligament reconstruction" Osteoarthritis Research Society International, Paris, 2014.
50. Barton, K.I., Heard, B., Solbak, N., Chung, M., Achari, Y., Frank, C.B., Shrive, N.G., Hart, D.A. Controlling Inflammation to Prevent the Development of Osteoarthritis Following Reconstruction Anterior Cruciate Ligament and Drill Hole Surgery. Bone and Joint Injury & Repair. London, Canada. January 16-17, 2014.
51. Solbak, N.M., Achari, Y., Frank, C.B. Shrive, N.G., Hart, D.A., "Stem cell proliferation and neurogenic responses further enhance the potential role of the infrapatellar fat pad in a model of post-traumatic osteoarthritis development" Canadian Connective Tissue Conference, 2014
52. Burrowes, L.M., Shrive, N.G., Tyberg, J.V., "Mechanisms of Ventricular Diastolic Suction" LIBIN Research Day, Calgary, 2014
53. Atarod M., Frank, C.B. Shrive, N.G. "Diminished Cartilage Lubrication Early After ACL Injury and Increased Meniscal Loads Later After an ACL Injury May Both Contribute To OA Development in an Ovine Model" Annual Meeting of the Orthopaedic Research Society, 2014
54. Beveridge, J.E., Atarod, M., Heard, B.J., Frank, C.B., Shrive, N.G., "Abnormal Tibiofemoral Surface Alignment is Associated with Increased Meniscal Loads in Vivo" Annual Meeting of the Orthopaedic Research Society, 2014
55. Atarod, M., Frank, C., Shrive, N., "In Vivo Knee Joint Biomechanics Following Anterior Cruciate Ligament Rupture" ASME conference, San Diego, 2013

56. Andrews, S.H.J., Rattner, J.B., Shrive, N.G., Adesida, A., "The Insertional Ligaments of the Menisci" 13th mtg of the International Society of Ligament and Tendon, Arezzo, Italy, 2013
57. Atarod, M., Frank, C., Shrive, N., "In Vivo Ligament and Meniscal Loads Following ACL Injury: A Longitudinal Study" 24th Congress of the International Society of Biomechanics, Brazil, 2013 (one of 5 finalists from more than 300 for the David Winter Young Investigator Award)
58. Barton, K., Frank, C., Shrive, N., Hart, D., "Idealized Reconstruction of the Anterior Cruciate Ligament and Dexamethazone treatment: a Proposal" International Workshop on the Biomedical Basis of Human Performance, 2013
59. Atarod, M., Frank, C.B., Shrive, N.G., "In Vivo Knee Joint Biomechanics Following Anterior Cruciate Ligament Rupture" ASME Summer Bioengineering Conference, 2013
60. Andrews, S.H.J., Shrive, N.G., Ronsky, J.L., "Swelling and the Effect on Material Properties in Meniscal Test Samples", ASME Summer Bioengineering Conference, 2013
61. Atarod, M., Frank, C., Shrive, N., "Mechanical Adaptations of Tissues in the Knee Joint Over Time Following ACL Injury" Canadian Conference on Tissue Engineering, 2013
62. Barton, K., Frank, C., Shrive, N., Hart, D., "Preventing the Development of Osteoarthritis Following Reconstruction of the Anterior Cruciate Ligament" Canadian Conference on Tissue Engineering, 2013
63. Atarod, M., Frank, C.B., Shrive, N.G., "Ligament and Meniscal Loads following ACL rupture in vivo: a longitudinal study in the ovine model" Bodies of Knowledge 2013 Graduate Student Conference, Toronto, 2013
64. Solbak, N.M., Karame, A., Frank, C.B., Shrive, N.G., "Normal synovium from both adolescent and adult sheep is homogeneous throughout the joint", Annual meeting of the Orthopaedic Research Society, 2013
65. Rosvold, J.M., Atarod, M., Frank, C.B., Shrive, N.G., "In vivo ligament and meniscus loading during normal gait: A huge inter-subject variability", Annual meeting of the Orthopaedic Research Society, 2013
66. Beveridge, J.E., Shrive, N.G., Frank, C.B., "A New Measure of Tibiofemoral Surface Interactions that Correlates with Early Cartilage Damage in Injured Sheep", Annual meeting of the Orthopaedic Research Society, 2013
67. Barton, K.I., Ludwig, T.E., Achari, Y., Shrive, N.G., Frank, C.B., Schmidt, T.A. Characterization of Lubricant Composition in a Post-Knee Injury Model. Poster Presentation. 13th Alberta Biomedical Engineering Conference, Banff, Alberta, Canada, October 21-23, 2012.
68. Gudena, R., Atarod Pilambaraei, M., Werle, J. Shrive, N., "The Effect of Tibial Component Overhang on Medial Collateral Ligament Loads: An In-vitro Robotic Study", EFORT-12 (European Federation of Associations of Orthopaedics and Traumatology) Conference 2012.
69. Gudena, R., Atarod Pilambaraei, M., Werle, J., Frank, C.B., Shrive, N.G., "The Effect of Tibial Component Overhang on Medial Collateral Ligament Loads: An In Vitro Robotic Study" Podium Acceptance at COA/CORS Annual Meeting 2012.

70. Frank, C.B. and Shrive N.G., "Biology of healing and biomechanics after ACL reconstruction" Keynote lecture at International Symposium on Ligament and Tendon. San Francisco, California. February 2012.
71. Barton, K, Ludwig, T., Achari, Y., Shrive, N.G., Frank, C.B., Schmidt, T., "Characterization of Lubricant Composition in a Post-Knee Injury Model" Orthopaedic Research Society Annual Meeting in San Francisco, California, February, 2012.
72. Atarod Pilambaraei, M., O'Brien, E. J. O., Shrive, N.G., Frank, C.B., "The anteromedial and posterolateral bundles of the ovine ACL demonstrate physical interaction and distinct patterns of load sharing under increasing anterior tibial loads" Orthopaedic Research Society Annual Meeting in San Francisco, California, February, 2012.
73. Atarod Pilambaraei, M., Gudena, R., Werle, J., Shrive, N.G., Frank, C.B., "Tibial component overhang greater than 2 mm should be avoided in unicompartmental knee replacements: An in vitro robotic study" Orthopaedic Research Society Annual Meeting in San Francisco, California, February, 2012.
74. O'Brien, E. J. O., Beveridge, J.E., Huebner, K.D., Heard, B.J., Tapper, J.E., Shrive, N.G., Frank, C.B., "ACL Reconstruction with Immediate Anatomic Re-attachment of the Native ACL in an Ovine Model Results in Minimal Kinematic Differences and Greater Evidence of Early OA Compared with Sham Controls" Orthopaedic Research Society Annual Meeting in San Francisco, California, February, 2012.
75. Buckley-Herd, G., Krawetz, R., Shrive, N., Hart, D., "Mechanical loading for the enhancement of synovial mesenchymal stem cell scaffold-free tissue-engineered constructs for cartilage repair" Canadian Arthritis Network Annual Scientific Conference, Quebec City, Canada, Nov 2011.
76. Solbak, N.M., Frank, C.B. and Shrive, N.G., "Quantification of biomarkers associated with early development of osteoarthritis in the normal ovine stifle joint" Canadian Arthritis Network Annual Scientific Conference, Quebec City, Canada Nov 2011.
77. Heard, BJ, Achari Y., Frank C.B., Shrive N.G., "Ovine Anterior Cruciate Ligament Reconstructive Surgery and Osteoarthritis" Canadian Arthritis Network Annual Scientific Conference, Quebec City, Nov 2011.
78. Buckley-Herd, G., Krawetz, R., Shrive, N., Hart, D., "Normal and osteoarthritic synovial stem cell-derived tissue-engineered constructs respond to mechanical stimulus following chondrogenic differentiation" OARSI World Congress on Osteoarthritis, San Diego, USA Sept 2011.
79. Buckley-Herd, G., Krawetz, R., Shrive, N., Hart, D., "Normal and osteoarthritic synovial stem cell-derived tissue-engineered constructs respond to mechanical stimulus following chondrogenic differentiation" 12th Annual Alberta Biomedical Engineering Conference, Banff, Canada, Oct 2011.
80. Fernando, M., Shrive, N.G., Frank, C.B., "Analyzing the Strain in the Ovine Anterior Cruciate Ligament During Normal Joint Flexion and Extension" 5th Annual Biomedical Engineering & NSERC CREATE Summer Research Symposium, University of Calgary, August 2011.

81. Tyberg, J.V., Shrive, N.G., Sridharan, S., Bouwmeester, J.C., Wang, J.J., “Is it time to question the validity of Impedance Analysis?”, Association for Research into Arterial Structure and Physiology”, Artery Research, 4, 144 – 145, 2010.
82. Huebner, K D; Shrive, N G; Frank, C B., “Intra-articular drilling may not be benign: Intra-articular bone damage leads to cartilage damage and synovial inflammation” University of Calgary Leaders in Medicine Research Symposium. Calgary, Alberta. November 2010.
83. Atarod Pilambaraei, M., Laverty, S.M., Shrive, N.G., Frank, C.B. “Evaluation of the Stiffness of Ovine Stifle Joint Using a Parallel Robot” Alberta BME Conference, 2010.
84. Huebner, K.D., Shrive, N.G., and Frank, C.B., “Characterization of a novel osteoarthritis animal model and early prevention of inflammation post-surgery” Osteoarthritis Research Society International Meeting, Brussels, Belgium, September 2010.
85. Huebner, K.D., Shrive, N.G., and Frank, C.B. “ Intra-articular bone damage leads to cartilage degradation” Canadian Society for Clinical Investigation/Clinician Investigator Trainee Association of Canada, Ottawa, Ontario, September 2010.
86. Rosvold, J.M., Frank, C.B., Shrive, N.G., “Forces in the Ovine ACL during Normal Gait” Proceedings of the 6th World Congress of Biomechanics, Singapore, p 116, Aug 2010
87. Chung, M., Heard, B.J., Achari, Y., Shrive, N.G., Frank, C.B., “Does a biomechanically ideal ovine anterior cruciate ligament autograft present early signs of degradation?” 10th Annual Meeting of the International Symposium on Ligaments and Tendons, Hong Kong, China February 5-6, 2010.
88. Heard, B.J., Achari, Y., Chung, M., Shrive, N.G., and Frank, C.B., “Multiple linear regression analysis of biomarkers in synovium predicts early cartilage degeneration” 56th Annual ORS Meeting, New Orleans, USA, March, 2010.
89. Huebner, K.D., Shrive, N.G., and Frank, C.B., “Novel model for studying early mechanisms involved in cartilage degeneration in the knee joint” 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, USA. March 5-9, 2010.
90. Beveridge, J E, Anderson, B L, Habib, A F, Ronsky, J L, Shrive, N G, Frank, C B., “A New 3-D Method for Mapping Joint Surface Split-line Orientation” 56th Annual Meeting of the Orthopaedic Research Society, New Orleans, LA, USA. March 5-9, 2010.
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180. Howard, R.A., Rosvold, J.M., Tapper, J.E., Marchuk, L.L., Ronsky, J.L., Frank, C.B., and Shrive, N.G.: Computations in the reproduction of in vivo motion using a parallel robot and calculation of resulting connective tissue loads. 6th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain, February 2004. (Finalist, Best Student Presentation)
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 297. Matyas, J.R., Anton, M.G., Epstein, M., Shrive, N., and Frank, C., Ligament insertion structure and function: A correlation between cell shape and ligament stress state as predicted by finite element analysis. Transactions of the Combined Meeting of the Orthopaedic Research Societies of U.S.A., Japan and Canada, Banff, Alberta, October 21-23, pp. 76, 1991.
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316. Lam, T., Frank, C. and Shrive, N.: Ligament viscoelastic behaviour changes with maturation. *Ortho. Trans.* 13 (2):307-308, 1989.
317. Chimich, D., Frank, C., Shrive, N., and Dougall, H., The early effects of torn end contact on medial collateral ligament healing. *Ortho. Trans.* 13 (2):347, 1989.
318. Chimich, D., Marchuk, L., Bray, R., Sterenberg, D., Frank, C., and Shrive, N., Water content influences ligament viscoelastic behavior. *Proceedings of the Canadian Orthopaedic Research Society* 23:34-35, 1989.
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VIII Editorial Committee/Conference Chairman

Organizer, 13th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Montreal	2015
Associate Editor, <i>Journal of Engineering in Medicine</i>	2013 - present
Member, Editorial Board, <i>Journal of Engineering in Medicine</i>	2008-2013
Conference Co-organizer, 8th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Porto, Portugal	2008
Member, Editorial Board (as past Co-Editor), <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , Taylor and Francis Publishers	2006-2019

Conference Co-organizer, 7th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Juan les Pins, France	2006
Tenth Canadian Masonry Symposium Conference Chair	2005
Conference Co-organizer, 6th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Madrid, Spain	2004
IV ACMBS, Chair Scientific and Programme Committees, Calgary, Canada	2004
ICPCM Conference Co-Chair, Cairo	2003
Conference Co-organizer, 5th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Rome, Italy	2001
Editorial Board, Construction & Building Materials	2001-present
Associate Editor (Structures), Canadian Journal of Civil Engineering	2001-2008
Alberta BME Symposia Conference, Co-Chair	2000-2012
Editorial Consultant, Journal of Biomechanics	2000-2009
Conference Co-Organizer, 4th International Conference on Computer Methods in Biomechanics and Biomedical Engineering, Lisbon, Portugal	1999
Member, Editorial Board, Masonry International	1999-2008
Founding Co-Editor (with one other), Computer Methods in Biomechanics and Biomedical Engineering, Taylor and Francis Publishers	1996-2006
10 th International Brick and Block Masonry Conference Chair	1994
Member, Editorial Board, The Masonry Society Journal	1985-present

IX Request To Review Papers For Journals/Grant Applications

Have reviewed papers for:

American Concrete Institute, Materials Journal
 American Concrete Institute, Structures Journal
 American Journal of Sports Medicine
 American Society for Testing and Materials,
 Annals of Biomedical Engineering
 Biorheology, International Society of Biorheology
 Canadian Journal of Civil Engineering
 Cement and Concrete Composites
 Clinical Orthopaedics and Related Research Journal
 Computers & Structures
 Construction and Building Materials
 Engineering Journal, University of Qatar
 Engineering Structures: an International Journal,
 International Journal of Solids and Structures
 International Journal of Sports Biomechanics
 Journals of the American Society Civil Engineering (Materials, Structures, and Composites in Construction)
 Journal of Biomaterials
 Journal of Biomechanics
 Journal of Biomechanical Engineering (ASME)
 Journal of Biorheology
 Journal of the Indian Concrete Institute
 Journal of Materials in Civil Engineering
 Journal of Orthopaedic Research
 Masonry International
 The Masonry Society Journal

Have reviewed grant applications for:

Australian Research Council
 Natural Sciences and Engineering Research Council (Canada)
 Medical Research Council (Canada)
 The Arthritis Society (Canada)
 Social Sciences and Humanities Research Council (Canada)
 Swiss National Science Foundation
 NATO
 The Arthritis Society (UK)
 The Whitaker Foundation (USA)
 Health and Fitness, Canada
 Nova Scotia Health
 South African Research Foundation
 Leverhulme Trust (UK)

X Research and Other Funds (N.G. Shrive either individual, main or co-applicant)

- (a) NSERC Individual Operating Grant: originally funds were for research on composite materials. The later applications (1982 onwards) were for masonry research only. Amounts shown are annual amounts
- | | |
|-----------|-----------|
| 2018-2023 | 43,000 pa |
| 2013-2018 | 35,000 pa |
| 2012-2013 | 28,000 |
| 2007-2012 | 35,000 pa |
| 2002-2007 | 30,000 pa |
| 1997-2001 | 23,000 pa |
| 1994-1997 | 20,700 pa |
| 1991-1994 | 30,700 pa |
| 1988-1991 | 27,000 pa |
| 1986-1988 | 24,000 pa |
| 1985-1986 | 25,000 |
| 1984-1985 | 17,000 |
| 1983-1984 | 16,000 |
| 1982-1983 | 15,000 |
| 1981-1982 | 12,000 |
| 1980-1981 | 11,000 |
| 1979-1980 | 10,000 |
| 1978-1979 | 5,000 |
| 1977-1978 | 5,000 |
- (b) Collaborative Research and Development Grant:
 Develop high strength ecofriendly concrete nlock and design therewith 2020-2025 \$1,000,000
 To develop new design of load bearing concrete block. 1985-1986 \$26,000
 Equipment Grants
- (i) J.E. Gillott (PI) for scanning (electronic microscope)
 other grants from University, total 180,000
 - (ii) N.G. Shrive (PI) For INSTRON testing machine total grants 43,000
 - (iii) W. Dilger (PI) equipment for structure labs 362,000
 - (iv) N.G. Shrive from AHFMR 50,000
- (c) Co-operative Grant
 J.B. Hyne (PI) 1982-1983 60,000

		1981-1982	55,000
		1980-1981	50,000
(d)	Negotiated Development Grant for Sulphur Research I was not an applicant for this grant but coordinated the Civil Engineering Group. Administered funds for Group which varied from \$50,000-70,000 per annum.1974-1981		varied 50,000
(e)	Network of Centres of Excellence (ISIS)	2006-2009	150,000
		2005-2006	95,000
		2002-2004	90,000
		2001	97,000
		2000	86,000
		1999	90,000
		1997-1998	50,000
		1996-1997	44,000
(f)	Alberta Government NCE Funds	1998	30,000
		1997-1998	5,000
		1996-1997	8,000
(g)	plus IRAP funding industry collaborative work	1997-1998	30,000
(h)	CH2M Stor & Gorrie Industry in-kind contribution	1997-1998	2,500
(i)	Network Centre of Excellence (GEOIDE)	2003-2004	27,500
(j)	Canadian Masonry Council Individual series of grants, total	1974-1994	29,000
(k)	Canadian Masonry Research Institute	2000	6,000
	Support from the Canadian Concrete Masonry Producers Association, 2012- 2018 and the Alberta Masonry Council, totaling		400,000
(l)	Lafarge Canada Inc.	2001-2003	30,000
(m)	Sulphur Development Institute of Canada	1979-1981	105,000
(n)	Biomedical Research Grants		
	Canada Foundation for Innovation (one of ten main applicants, SKBoyd lead, \$12.89 million, 2012)		
	Canada Foundation for Innovation (one of ten main applicants, DAHart lead, \$12.593 million – I administered and renewed this grant for five years, started in 2001)		
	NSERC CREATE (co-PI, Herzog lead)	2009-2014	300,000pa
	CIHR (with I.K.Y. Lo, Medicine)	2005-2007	117,522pa
	CIHR (with J. Tyberg, Medicine)	2007-2010	78,685pa
		2005-2007	82,861pa
		2002-2005	98,429pa
		2001-2004	106,660pa
	CIHR (with K. Hildebrand/D.A. Hart)	2003-2006	117,917pa
		2002-2005	73,821pa
		2001-2004	80,000pa
	CIHR (with D.A. Hart)	2003-2007	60,000pa
	Canadian Space Agency (with D.A. Hart)	2002-2006	60,000pa

(o)	Biomedical Research Grants with C.B. Frank (Surgery)		
	(i) CIHR (one grant)	2014-2018	133,000pa
	(two grants)	2012-2014	249,000pa
	(two grants)	2011-2012	235,751pa
	(two grants)	2008-2011	257,617pa
		2006-2008	232,506pa
		2003-2006	168,000pa
	(ii) MRC	1999-2003	146,464pa
		1997-1999	74,500pa
		1996-1999	120,000pa
		1994-1997	77,400pa
	(iii) Equipment grant (part of operating)		33,107
		1992-1995	130,000pa
		1991-1994	74,000pa
		1989-1992	135,000pa
		1987-1989	87,000pa
	(iv) Arthritis Society	2012-2015	120,000pa
		2003-2006	86,455pa
		2000-2003	85,400pa
	(2nd grant)	1997-2000	60,000pa
		1997-2000	60,000pa
		1994-1997	44,400pa
		1991-1994	58,500pa
		1989-1991	55,136pa
	(v) Canadian Arthritis Network	2002-2004	73,290pa
		2001-2002	59,328pa
		2001-2002	59,840pa
		2000-2001	50,000pa
		2000-2001	55,000pa
		1999-2000	46,000pa
		1999-2000	46,000pa
		1987-1988	47,500pa
	(vi) Alberta Innovates – Health Solutions (one of 8 co-PIs with Frank and Herzog as co-leads)	2008-2013	1,000,000pa
(p)	London Life (with CB Frank and DA Hart)	1997-2000	100,000pa
(q)	Alberta Children’s Hospital	1992-1994	47,000pa
		1987-1991	47,000pa
(r)	Medtronic of Canada Hospital	1987-1988	140,000pa
(s)	MRC (with J Matyas) Equipment Grant	1996-1999	59,000pa 25,000

(t)	Whitaker Foundation Co-applicant with R. Zernicke (UofC), P. Allen (UofA) Special Opportunity Award to develop Alberta Provincial Biomedical Engineering Programme	1997-2000	US\$ 333,000pa
(u)	AHFMR Phase II Commercial development grant	1993-1994	75,000
(v)	Newcastle Area Health Authority, UK R. Hornby, main applicant plus one other	1979	17,000
(w)	University Research Grants Committee	1976	4,000
(x)	Research Contracts, City of Calgary		
	(i) to determine the cause of failure LRT System and test new devices, with BR Gamble)	1983	80,000
	(ii) Rail Corrugation and Wheel Wear, with BR Gamble	1984-1985	100,000
	(iii) Properties of Mastic Materials: LRT	1988	29,000
		1987	45,000
		1987	26,000
	(iv) Stanchion for Memorial Drive Bridge	2001	5,000
	(v) Shawnessy LRT Station	2003	55,000
(y)	Skytrain, BC Transit	1989	25,000
(z)	Arctic Offshore Engineering (with two others)	1986	5,500
(aa)	I have also received funds Alberta STEP and Federal SEED programs for summer students, as well as NSERC, CIHR and AIHS summer studentships.		

INDUSTRIAL CONTACT

- (1) City of Calgary: Light Rail Transit
Reports co-authored with B.R. Gamble
- (a) Testing of Fixations for North East Leg of LRT: July 1983
- (b) Fatigue Failure of Landis/Pandrol Model 5301 Direct Fixation Rail
Fastener, Confidential preliminary report of a test program August 1983
- (c) Fatigue Failures of South Line Direct Fixation Rail Fasteners:
Conclusions from Field and Laboratory Test January 1984
- (d) Direct Fixation Rail Fastening Methods for use on the Calgary Light
Rail Transit System: Summary Report of Testing & Development, March 1984
Reports submitted by others under supervision of N.G. Shrive
- (e) Rail Wear and Corrugation on 7th Avenue South (B.R. Gamble)
P. Ameny, J. Stein, 141 pp. July 1985
- (f) State-of-the-Art Report on Corrugations and Recommendations
for 7th Avenue South, P. Ameny, J. Stein, 89 pp. September 1985
- (g) State-of-the-Art Report on Wheel Wear and Recommendations for
Calgary LRT, J.R. Stein, P. Ameny, 128 pp. February 1986
Reports co-authored with P. Ameny
- (h) Tests of Resilient Track Support Materials for City of

Calgary Light Rail Transit, 64 pp. August 1987
 (i) Static and Fatigue Tests of Lechler and other Direct Fixations for the
 City of Calgary Light Rail Transit, 84 pp. May 1988

(2) Companies Consulted

CCI Industries
 Sulphur Development Institute of Canada
 Revenue Canada
 Tetrattech Systems International
 Hanson Materials
 Fenco Ltd.
 Yellowline Industries
 Geotech Engineering
 Scitech
 Morrison Herschfield
 Sintra Engineering
 JSS Barristers
 Amec-Foster-Wheeler
 RJC Engineers

SERVICE

A. UNIVERSITY

(i) Committees (among many on which have served)
Department
 Materials Group
 Structures Group
 Mechanics Group
 Graduate Student Affairs
 Laboratory Committee
 Building Management Committee
 Decoration Committee
 Department rep to the Faculty Association
 Department Development Committee
 Curriculum Committee
 Merit Increment Committee
 Project Management Advisory Committee
 Irrigation Engineering Industrial Advisory Committee

Faculty

Ad hoc Committee on Curriculum Review
 Promotions and Awards
 Ad hoc Committee on Student Behaviour
 Common Curriculum
 Faculty Salaries
 Engineering Faculty Council
 IDC Solid Mechanics
 Committee to select Associate Dean Academic
 Academic Review Committee
 Dean's Advisory Council

Faculty Executive Committee (current, ex-officio)
 Task Force on Teaching Statistics
 Biomedical Engineering Research Group (current, chair)
 Environmental Engineering Group
 Public Relations
 Engineering Representative to Medical Faculty Council
 Faculty Promotions Committee
 Sabbatical Fellowship Committee

University

Research Ethics Appeals Board 2003-06
 Provincial Coordinated Graduate Programme, Calgary, Co-chair 1997-present
 Graduate Coordinator, Biomedical Engineering 1996-2006
 Joint Injury and Arthritis Research Group, Faculty of Medicine, Chair 2002-2005
 Research Development and Policy Committee, Chair 2002-04
 Research Development and Policy Committee, Member 2001-02
 University Consultation Committee on Intellectual Property 2001
 United Way Campaign, Co-chair 1997
 Conjoint Faculties Research Ethics Committee (member, 1992-96, 98-03)
 (Chair, 1996-98)
 General Faculty Council, Ethics of Human Studies (member, 1996-98)
 Faculty of Graduate Studies Council
 Faculty of Social Sciences Council
 Space Allocation Committee
 Parking and Traffic Control
 Instructional Methodology
 Space Review Committee
 Research Policy Committee
 Committee on Admissions and Transferability
 President's Task Force Subcommittee on Physical Facilities
 Chancellor's Committee on Convocation
 President's Search Committee for Associate V.P. (Planning)
 General Faculties Council

Head, Department of Civil Engineering: (1989-12/1998)
 Responsible for:

- academic programmes (graduate and accredited undergraduate)
- academic staffing
- support staff staffing
- all financial aspects of department
- academic curriculum development
- equipment and laboratory development
- graduate student admissions and performance assessment
- undergraduate student activity.

Associate Dean (Student Affairs) Faculty of Engineering: (1985-89)
 Responsible within the faculty for:

- admitting students to the faculty
- keeping student records
- reviewing student progress
- administering the faculty's regulations

- carrying out other tasks from time to time as delegated by the Dean

Assistant to the Vice-President (Services): (1977-80)
Responsible for Space Allocation and Planning for the University

Joint Injury and Arthritis Research Group
Member, Project Motion Building Committee 1990-91
Chair, Space Planning Committee 1990-91
Chair, Space Management Committee 1990-96
Chair, Equipment Committee 1991-02
Chair, JIARG Research Group 2002-2006

B. EXTERNAL ADMINISTRATION/MANAGEMENT

(a) Professional

- (i) Executive Secretary,
Canadian Masonry Research Council 1980-81, 1982-84
- (ii) Chairman, Joint Liaison Committee of the Association of Professional Engineers,
Geologists and Geophysicists of Alberta (APEGGA)
and the Engineering Student Society at the University 1980-81
Honorary President, Engineering Students Society, 1980-81
- (iii) Member, Calgary Members Liaison Committee of APEGGA 1982-87
- (iv) Member, APEGGA- Engineering Students Liaison Group 1986-88
- (v) Member, Alberta Panel,
The Institution of Mechanical Engineers 1982-88
- (vi) Member, Executive,
Canadian Prairies Group of Chartered Engineers 1989-2016
Chair 2000-01, 2008-2014
- (vii) Member, Informal Study Group—the Influence of creep in structural
behaviour—the Institution of Structural Engineers 1981–86
- (viii) Director, The Masonry Society 1986-92
1998-00
- (ix) Member, Canadian Standards Association Committee S304,
on Masonry Design 1985-present
- (x) Chairman, Canadian Standards Association Committee A179 on Masonry
Mortars 1989-present
- (xi) Member, Canadian Standards Association Committee A371 on Masonry
Construction 2002-present
- (xii) Member, Masonry Standards Steering Committee,
Canadian Standards Association 1989-present
- (xiii) Member, External Advisory Committee,
Calgary Sport Medicine Centre 1991-present
- (xiv) Member, Superintendent's Commission on Literacy,
Calgary Board of Education 1989-91
- (xv) Member, Canadian Engineering Accreditation Board Visitation Teams:
McMaster University 1991
University of Western Ontario 1994
Saskatchewan 1996
McGill 1998
Royal Military College 2000

	University of British Columbia	2005
	Dalhousie University	2013
(xvi)	Member - one year, Chair - three years, Biomedical Engineering Grant Selection Committee, Medical Research Council	1991-1995
(xvii)	Member, NSERC Selection Committee for University Faculty Awards	1998-2001
(xviii)	Member, Research Projects Panel, The Arthritis Society	1992-2004
(xix)	Member, Board of Examiners, APEGGA	1993-present
(xx)	Member, AHFMR Conference Grant Advisory Committee	2003-2006
(xxi)	Member, Committee 530, Masonry Standards Joint Committee (ACI, TMS and ASCE Struc. Engg Inst.)	2002-present
(xxii)	Member, NSERC Civil Engineering Grant Selection Committee	2003-2006
(xxiii)	Member, Canadian Arthritis Network	2002-present
(xxiv)	Member, Canadian Standards Association Committee S806 on FRPs	2008-present
(xxv)	Member, CIHR BME cttee	2010, 2014
(xxvi)	Member, NSERC Cttee to select Chairs for Women in Science and Engineering, Atlantic, Ontario and Prairies	2011
	Quebec	2012-13
(xxvii)	Member, NSERC Steacie award selection committee	2011, 2012
(xxviii)	Director, International Masonry Society	2013
(xxix)	Member NSERC Vanier Selection Cttee	2017-2019
(b)	Non-professional	
(i)	Treasurer, Local Advisory Committee, Colonel Sanders School	1982-83
(ii)	Member, Construction Committee, Calgary Zoological Society	1983-84
(iii)	Chairman, Local Advisory Committee, Colonel Sanders School	1984-85
(iv)	District Coordinator, Thorncliffe-Greenview Blockwatch	1984-85
(v)	Key Communicator, Colonel Sanders School	1985-86
(vi)	Director, W.G. (Bill) Howard Memorial Foundation	1985-88
(vii)	Treasurer, 72nd Group, Cubs and Scouts	1989-92
(viii)	Chairman, 72nd Group, Cubs and Scouts	1992-93
(ix)	Director, G.P. Vanier Junior High School Band	
	Parent's Association	1988-92
	Vice President	1991-92
(x)	Director and Secretary, Calgary North Stars	
	Community Show Band	1991-95
(xi)	Member, School Council, Manachaban School	1995-97
(xii)	Member, School Council, Cochrane High School	1998-2001
(xiii)	Chair, School Council, Cochrane High School	2000-2001