

Curriculum Vitae

DATE: February 2009

Surname: Bohun
Given Names: Christopher Sean
Department: Mathematics
Citizenship: Canadian

EDUCATIONAL INSTITUTIONS ATTENDED

University of Ontario Institute of Technology, Oshawa, ON., Canada	2006-present
York University, Toronto, ON., Canada (adjunct)	2006-present
Penn State – Mont Alto, Mont Alto, Pennsylvania	2001-2006
University of Victoria, Victoria, B.C., Canada	1986-2000

DEGREES AWARDED

PhD (Applied Mathematics) University of Victoria	1998
MSc (Theoretical Physics) University of Victoria	1992
BSc (Physics) University of Victoria	1989

TITLE OF THESIS OR DISSERTATION

PhD: Existence, Uniqueness & Asymptotic Behaviour of the Wigner–Poisson System with an External Coulomb Field
MSc: A Self-Consistent Dirac–Maxwell Field of Solitons

MAJOR FIELD(S) OF SCHOLARLY OR PROFESSIONAL INTEREST

Industrial mathematics, mathematical modelling, mathematical physics, Sobolev spaces, semigroup theory, neural networks, high speed digital communications

MEMBERSHIP AND OFFICES HELD IN LEARNED AND PROFESSIONAL SOCIETIES

Member of the American Mathematical Society	1991-1998, 2001-present
Member of the SIAM Mathematical Society	1992-1996, 2003-present
Member of the four-member stewardship of the IPSW	2004-2007
Member of MITACS	2002-2007
Member of the Mathematics Association of America	2001-2003
Member of the Canadian Mathematical Society	1992-2000
Member of the Canadian Association of Physicists	1986-1987

HONOURS AND AWARDS

Martha A. Fisher Award for Excellence in Teaching	2003
Graduate Teaching Fellowship	1990-1998
Graduate Research Grant	1991-1992

Graduate Teaching Award	1991
Job-Track Fund	1989-1990
President's Scholarship	1986
Government Scholarship	1986
Canadian Army Fund	1985
Canadian Legion Award	1984-1985
CIPA Sawmill Award	1984
President's Scholarship	1984
Government Scholarship	1984

GRANTS

a. Grants awarded

MITACS Workshop Grant for China/Canada Biomedical Problem Solving Workshop	2009
MITACS Workshop Grant for Maths in Medicine study group conference	2009
Fields Workshop Grant for Maths in Medicine study group conference	2009
Technology Transfer Grant	2008
NSERC Discovery Grant	2008
Fields-MITACS Problem Solving Workshop Grant	2007
Professional Development Fund	2005
Global Fund	2004
Professional Development Fund	2004
Professional Development Fund	2003
Research Development Grant	2003
Schreyer Institute for Teaching Excellence	2003
Research Development Grant	2002
Professional Development Fund	2002
Professional Development Fund	2001
Research Development Grant for New Faculty Members	2001

GRANTS

b. Pending

Industrial Research Assistance Program (NRC-IRAP) with Firebird Technologies Inc.- Participant	2008
NSERC Collaborative Research and Training Experience (CREATE) Program - Participant	2008
NSERC Collaborative Research and Development (CRD) Grant - Co-PI	2008

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

a. Articles Published in Refereed Journals

- Bohun, C.S. (2009). Mathematical models for an undisturbed soil-column. *Mathematics-in-Industry Case Studies*. (to appear)
- Bohun, C.S. & Breward, C. (2008). Yolk Dynamics in Amphibian Embryos. *Mathematics-in-Industry Case Studies*. (to appear)
- Wu, J., Bohun, C.S. & Huang, H. (2008). A Thermal Elastic Model for Directional Crystal Growth with Weak Anisotropy. *SIAM Journal on Applied Mathematics*, **69**(1), 283-304.

- Wu, J., Bohun, C.S. & Huang, H. (2008). Semi-analytic solutions for a thermoelastic problem with cubic anisotropy. *Journal of Crystal Growth*, **310**, 4373-4384.
- Bohun, C.S., Frigaard, I., Huang, H. & Liang, S. (2006). A Semi-Analytical Thermal Stress Model for the Cz Growth of Type III-V Compounds. *SIAM Journal on Applied Mathematics*, **66**(5), 1533-1562.
- Bohun, C.S., Carruthers, S.J., Edwards, R. & Illner, R. (2003). Generic Emergence of Cognitive Behaviour in Self-Generating Neural Networks. *Nonlinear Dynamics and Systems Theory*, **3**(1), 43-63.
- Bohun, C.S., McGee, B. & Ross, B. (2002). Electromagnetic Wellbore Heating. *Canadian Applied Mathematics Quarterly*, **10**(3), 353-374.
- Bohun, C.S. & Cooperstock, F. I. (1999). Dirac–Maxwell Solitons, *Physical Review A*, **60**(6), 4291-4300.
- Bohun, C.S., Illner, R., Lange, H. & Zweifel, P. F. (1996). Error estimates for Galerkin Approximations to the Periodic Schrödinger–Poisson System. *Zeitschrift für Angewandte Mathematik und Mechanik.*, **76**(1), 7-13.
- Perry, G.P. & Bohun C.S. (1992). The Newtonian limit of axially-symmetric spacetimes. *Physical Review D.*, **46**(4), 1866-1868.
- Bohun, C.S., Illner, R. & Zweifel, P.F. (1991). Some remarks on the Wigner transform and the Wigner–Poisson system. *Le Matematiche*, **XLVI**(1), 429-438. Presented at the VI International Conference on Waves and Stability in Continuous Media, Università di Catania.
- Thomson, D. & Bohun, C.S. (1988). A wide-angle initial field for parabolic equation models. In *The Journal of the Acoustical Society of America*, **83**, Supplement 1: *Proceedings of the 115th meeting of the Acoustical Society of America*, S118.

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

b. Books

- Illner, R., Bohun, C.S., McCollum, S.J. & van Roode, T. (2005). *Mathematical Modelling: A case studies approach*. AMS: Providence, RI.

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

c. Refereed Conference Proceedings

- Bohun, C.S. (2005). Mathematical Model of the Mechanics and Dynamics of the Tails in Dinosaurs. *Canadian Applied Mathematics Quarterly*, **13**(3), 219-233.
- Akers, B., Bohun, C.S., Gibson, P., Hofinger, A., Lamoureux, M., Lobb, J., Mawby, B. & Roberts, M. (2004). General Statistical Design of an Experimental Problem for Harmonics. *Canadian Applied Mathematics Quarterly*, **12**(4), 415-438.
- Aggarwala, R., Bohun, C.S., Kuske, R., LaBute, G., Lu, W. & Nigam, N. (2004). Product-Driven Data Mining. *Canadian Applied Mathematics Quarterly*, **12**(1), 1-24.
- Baamann, K., Bergeron, C., Bohun, C. S., Burden, T., Huang, H., Kadioglu, S., Lapin, S., McGee, B., Mubayi, A., Restrepo, J., Taylor, A. & Westbrook, R. (2004). In-Situ Thermal Remediation of Contaminated Soil. *Canadian Applied Mathematics Quarterly*, **12**(1), 25-36.
- Bohun, C.S., Dubois, O., Hongbin, G., Mendiratta, V.B., Nigam, N., Stepankevych, K. & Vassilev, T. (2004). Modelling Quality and Warranty Cost. *Canadian Applied Mathematics Quarterly*, **12**(1), 37-66.

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

d. Patents

Bohun, C.S., Huang, H., Nakagawa, J. & Yamamoto, M. (2008). Application on the use of thermal imaging to detect defects in rolled steel. (March-April, 2008)

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

e. Articles Submitted and in Preparation

Bohun, C.S. & Calin, C.D. (2007). Air/Water Two-Phase Bubbly Flow. *Canadian Applied Mathematics Quarterly* (submitted)

Bohun, C.S. & Nigam, N. (2007). Release of Encapsulated Breaker during a Laboratory Experiment. *Canadian Applied Mathematics Quarterly* (submitted)

Tudora, D. & Bohun, C.S. (2008). Modeling the Growth of Silicon Nanowires. *The Atlantic Electronic Journal of Mathematics*. (in preparation)

McGill, J. & Bohun, C.S. (2008). A Model for the Release of an Encapsulated Breaker. *The Atlantic Electronic Journal of Mathematics*. (in preparation)

Bohun, C.S. (2008). An optimal technique to reconstruct porosity distributions using NMR. (in preparation)

Bohun, C.S., Wu, J, Huang, H., & Micklethwaite, W.F. (2008). Facet formation and thermal stress: How to grow InSb crystals? (in preparation)

Bohun, C.S., Gravesen, J. & Laurie, H. Polar Plots of Diamond Surface Energy. (in preparation)

SCHOLARLY AND PROFESSIONAL ACHIEVEMENTS

f. Papers, Lectures and Addresses

Huang, H & Bohun C.S. (2008). *Defects Detection by Thermal Imaging: Part 2, Moving Sheet*. Technical Report to Nippon Steel, June 15, 2008.

Bohun, C.S. (2008). *Modelling the release of a chemical breaker*. Presented at the Fifth Annual Graduate Student Mathematical Modeling Camp, Rensselaer Polytechnic Institute, June 2008. (invited talk)

Bohun, C.S. (2008). *Modelling the Czochralski Growth of Type III-V Binary Semiconductors*. Workshop on Model Validation and Verification, Banff, April 2008. (invited talk)

Bohun, C.S. (2008) *Modelling the Czochralski Growth of Type III-V Binary Semiconductors*. McGill/CRM Applied Mathematics Seminar, March 4, 2008. (invited talk)

Huang, H & Bohun C.S. (2008). *Defects Detection by Thermal Imaging: Part I*. Technical Report to Nippon Steel, February 12, 2008.

Bohun, C.S. (2007). *Rapid Computation of Thermal Stress in Crystals with Facets and Allowing for Material Anisotropy*. Presentation Canada-China Workshop on Industrial Mathematics, Banff International Research Station, August 2007. (invited talk)

Bohun, C.S. (2007). *Air/Water Two-Phase Bubbly Flow*. Presented at the 11th PIMS Industrial Problem Solving Workshop, University of Alberta, June 2007.

- Bohun, C.S. (2006). *Mathematical Models for an Undisturbed Soil-Column*. In Reports of the Second Workshop on Industrial Applications, City University of Hong Kong, December 4-8, 2006.
- Dellar, P.J., Hjorth, P.G., Bohun, C.S., Ockendon, J.R. (2006). *Etch Rate Prediction for Ion Milling Machines*. In Reports of the Second Workshop on Industrial Applications, City University of Hong Kong, December 4-8, 2006.
- Bohun, C.S. & Breward, C. (2006). *Yolk Dynamics in Amphibian Eggs*. In Proceedings of the First Fields-MITACS Industrial Problems Workshop, The Fields Institute for Research in Mathematical Science, Toronto, Ontario, August 14-18, 2006.
- Bohun, C.S. & Breward, C. (2006). *Yolk Dynamics in Amphibian Eggs*. Presented at FMIPW (Fields/MITACS Industrial Problem-Solving Workshop), Fields Institute, Toronto, Canada, August 2006.
- Bohun, C.S. (2006). *Organising a successful Graduate Industrial Mathematical Modelling Camp*. Presented at MISGSA (Mathematics in Industry Study Group–South Africa), University of Witwatersrand, Johannesburg, South Africa, January 2006. (invited talk)
- Bohun, C.S., Gravesen, J. & Laurie, H. (2006). *Polar Plots of Diamond Surface Energy*. Presented at MISGSA (Mathematics in Industry Study Group–South Africa) 2006, University of Witwatersrand, Johannesburg, South Africa, January 2006.
- Bohun, C.S. (2005). *Modelling a Gas Burst Gene Gun*. Presented at Shepherd University, West Virginia, October 2005. (invited talk)
- Bohun, C.S., Jamali, P., et. al. (2005). *Modelling a Stirling Engine*. In *Proceedings of the eighth Graduate Mathematical Modelling Camp*. University of Lethbridge, Alberta. May 2005.
- Bohun, C.S. (2005). *Crystal Growth from 3D to 1D*. Presented at The Canada-China Workshop on Industrial Mathematics, Hong Kong Baptist University, Hong Kong, May 2005. (invited talk)
- Bohun, C.S., Javidnia, H. & Krakovska, O. (2004). *Optimal Design of a Gas Flow Gene Gun*. In *Proceedings of the seventh Graduate Mathematical Modelling Camp*. University of Victoria, British Columbia, May 2004.
- Bohun, C.S. (2004). *The Wigner–Poisson System with an External Coulomb Field: existence, uniqueness and asymptotic behaviour*. Presentation of paper at CAIMS/CMS meeting held in Halifax, Canada, June 2004. (invited talk)
- Bohun, C.S. (2004). *The Wigner–Poisson System*. Presented at York University, Canada, June 2004. (invited talk)
- McGee, B.C.W., Huang, H., et al. (2004). *The Thermodynamic Bubble Problem and Its Relevance for In-Situ Thermal Remediation*. Presented at Remediation of Chlorinated and Recalcitrant Compounds, in Monterey, California.
- Bohun, C.S. (2003). *Crystal Growth from 3D to 1D*. Presented at York University, Canada, June 2003. (invited talk)
- Bohun, C.S., Frigaard, I., Huang, H., & Liang, S. (2003). *A Perturbation Model for the Growth of ZnS Crystals*. Presented at *The International Conference on PDE and Applied Analysis*. Wuhan, China.
- Aggarwala, R., Bohun, C.S., et al. (2002). *Determining Geological Properties by a Hybrid Seismic-Magnetotelluric Approach*. In *Proceedings of the sixth PIMS Industrial Problem Solving Workshop*. University of British Columbia.

- Barannyk, L., Bohun, C.S., et al. (2002). Resistance Monitoring. In *Proceedings of the sixth PIMS Industrial Problem Solving Workshop*. University of British Columbia.
- Bohun, C.S. (2002). Mathematical Modelling of Crystal Growth. Presented at the MITACS Third Annual General Meeting, University of British Columbia.
- Bohun, C.S., Bouhennache, T., et al. (2001). Modelling InSb Czochralski Crystal Growth. In *Proceedings of the fifth PIMS Industrial Problem Solving Workshop*. University of Washington.
- Agyemang, I., Bolton, M., et al. (2000). Electromagnetic Wellbore Heating. In *Proceedings of the fourth PIMS Industrial Problem Solving Workshop*. University of Alberta.
- Biswanger, K., Bohun, C.S., et al. (2000). Optimal Design of a Micro-Electrical-Mechanical Systems Actuator. In *Proceedings of the third PIMS Graduate Industrial Math Modelling Camp*. Simon Fraser University.
- Batten, L., Bohun, C.S., et al. (1999). Classification of Chemical Compound Pharmacophore Structures. In *Proceedings of the third PIMS Industrial Problem Solving Workshop*. University of Victoria.
- Bohun, C.S. (1999). Existence, Uniqueness and Asymptotic Behaviour of the Wigner–Poisson System with an External Coulomb Field. *First PIMS Postdoctoral Fellows Conference*. University of British Columbia, Vancouver, Canada. (invited talk)
- Agapov, V. E., Ait-Haddou, R., et al. (1998). On Seismic Imaging: Geodesics, Isochrons, and Fermats Principle. In *Proceedings of the second PIMS Industrial Problem Solving Workshop*. University of Calgary.
- Akhtar, A., Aggarwala, B., et al. (1998). Torsion in Multistrand Cables. In *Proceedings of the second PIMS Industrial Problem Solving Workshop*. University of Calgary.
- Bohun, C.S., Bona, A., et al. (1998). Air Impact on Green Sand. In *Proceedings of the first PIMS Graduate Industrial Math Modelling Camp*. Simon Fraser University.
- Bohun, C.S. (1995). The Wigner–Poisson System in the presence of external Coulomb potentials. In *Workshop on Theory and Applications on the Wigner Representation in Quantum Kinetic Theory*. University of Victoria, Victoria, Canada. (invited talk)
- Bohun, C.S. & Welsh, M.S. (1993). Solutions to Systems of Differential Equations having Degenerate Eigenvalue Structure. *TRIUMF preprint TRI-PP-93-7*.
- Bohun, C.S. (1992). The Ginzburg–Landau Model of Superconductivity. University of Victoria, Victoria, Canada.
- Bohun, C.S. (1992). Some Attempts to Model Elementary Particles in Field Theory. University of Victoria, Victoria, Canada.
- Bohun, C.S. (1991). Necessary and Sufficient Conditions for a Phase Space Function to be a Wigner Distribution. University of Victoria, Victoria, Canada.
- Bohun, C.S. (1991). A Self-Consistent Dirac–Maxwell Field of Solitons. University of Victoria, Victoria, Canada.
- Bohun, C.S. (1991). Axially Symmetric Static Gravitational Fields. University of Victoria, Victoria, Canada.
- Bohun, C.S. (1988). The Ajax Paschydyne Crystal Puller. Crystar Research Inc., Victoria, Canada.
- Bohun, C.S. (1988). A Wide-Angle Initial Field for Parabolic Equation Models. Defense Research Estab-

lishment Pacific, Victoria, Canada.

Bohun, C.S. (1987). Measurement of the Current through Cordova Channel Using Spatial Aperture Filters. Institute of Ocean Sciences, Victoria, Canada.

CONFERENCES ATTENDED

- 2009 China/Canada Biomedical Problem Solving Workshop, Nankai University, China
- 2009 Fields/OCCAM/MITACS Math in Medicine study group conference, Toronto, Canada.
- 2008 Fields/MITACS Industrial Problem-Solving Workshop, Fields Institute, Toronto, Canada.
- 2008 Canadian Undergraduate Mathematics Conference, University of Toronto, Toronto, ON.
- 2008 The Twenty-fourth Annual Workshop on Mathematical Problems in Industry, Worcester Polytechnic Institute, Worcester, MA.
- 2008 The Fifth Annual Graduate Student Mathematical Modeling Camp, Rensselaer Polytechnic Institute, Troy, NY.
- 2008 MITACS Model Validation and Verification Workshop, Banff, Canada.
- 2008 The Fields Symposia on the Mathematics of Transportation. Fields Institute, Toronto, Canada.
- 2007 The 6th Study Group on Industry and Applied Mathematics, Nanjing, China.
- 2007 The Canada-China Workshop on Industrial Mathematics, Banff International Research Station, Banff, Canada.
- 2007 The Eleventh PIMS Industrial Problem Solving Workshop, University of Alberta, Edmonton.
- 2007 The 25th annual SONAD, University of Ontario Institute of Technology, Oshawa, Canada.
- 2006 The Second Workshop on Industrial Applications, City University of Hong Kong,
- 2006 The Tenth PIMS Industrial Problem Solving Workshop, Simon Fraser University, Vancouver, Canada.
- 2006 Fields/MITACS Industrial Problem-Solving Workshop, Fields Institute, Toronto, Canada.
- 2006 MISGSA (Mathematics in Industry Study Group–South Africa) 2006, University of Witwatersrand, Johannesburg, South Africa.
- 2005 China - Canada Industrial Mathematics Conference. Institute of Mathematics, Nankai University, Tianjin, China.
- 2005 The Canada-China Workshop on Industrial Mathematics, Hong Kong Baptist University, Hong Kong.
- 2005 The Eighth PIMS Graduate Industrial Math Modelling Camp, University of Lethbridge, Alberta, Canada.
- 2005 The Ninth PIMS Industrial Problem Solving Workshop, University of Calgary, Calgary, Canada.
- 2004 The Seventh PIMS Graduate Industrial Math Modelling Camp, University of Victoria, Victoria, Canada.
- 2004 The Eighth PIMS Industrial Problem Solving Workshop, University of British Columbia, Vancouver, Canada.
- 2004 Joint Meeting of CAIMS and CMS, Halifax, Canada.

- 2003 First Joint Meeting of CAIMS and SIAM, Montreal, Canada.
- 2003 The Seventh PIMS Industrial Problem Solving Workshop, University of Calgary, Calgary, Canada.
- 2002 The MITACS Third Annual General Meeting, University of British Columbia, Vancouver, Canada.
- 2002 Meeting of the MITACS project *Mathematical and Computational Modelling of Semi-Conductor Manufacturing Processes*, University of British Columbia, Vancouver, Canada.
- 2002 The Sixth PIMS Industrial Problem Solving Workshop, University of British Columbia, Vancouver, Canada.
- 2001 The Fifth PIMS Industrial Problem Solving Workshop, University of Washington, Seattle, WA.
- 2001 MAA Section Meeting, Penn State – Altoona, Altoona, PA.
- 2000 The Fourth PIMS Industrial Problem Solving Workshop, University of Alberta, Edmonton, Canada.
- 2000 The Third PIMS Graduate Industrial Math Modelling Camp, Simon Fraser University, Vancouver, Canada.
- 1999 The Third PIMS Industrial Problem Solving Workshop, University of Victoria, Victoria, Canada.
- 1998 The First PIMS Postdoctoral Fellows Conference, University of British Columbia, Vancouver, Canada.
- 1998 The Second PIMS Industrial Problem Solving Workshop, University of Calgary, Calgary, Canada.
- 1998 The First PIMS Graduate Industrial Math Modelling Camp, Simon Fraser University, Vancouver, Canada.
- 1997 Canadian Mathematical Society Winter 1997 Meeting, University of Victoria, Victoria, Canada.
- 1995 Workshop on Theory and Applications on Wigner Representation in Quantum Kinetic Theory, University of Victoria, Canada.
- 1994 TRIUMF Summer Institute (TSI), University of British Columbia, Vancouver, Canada.
- 1993 TRIUMF Summer Institute (TSI), University of British Columbia, Vancouver, Canada.
- 1993 Lake Louise Winter Institute (Collider Physics), Château Lake Louise, Lake Louise, Canada.
- 1992 Summer Nuclear Institute at TRIUMF (SNIT), University of British Columbia, Vancouver, Canada.
- 1992 Lake Louise Winter Institute (Symmetry and Spin in the Standard Model), Château Lake Louise, Lake Louise, Canada.
- 1991 Canadian Mathematical Society Winter 1991 Meeting, University of Victoria, Victoria, Canada.
- 1990 Gravitation: A Summer Institute, The Banff Centre for Conferences, Banff, Canada.

SERVICE AND PROFESSIONAL ACTIVITIES

a. Conference Organizational Committees

- 2008-2009 Organizing Committee for the China/Canada Biomedical Problem Solving Workshop, Nankai University, China
- 2008-2009 Organizing committee for the Fields Math in Medicine study group conference, Toronto, Canada.

- 2007-2008 Organizing committee for the 2008 Fields/MITACS Industrial Problem-Solving Workshop, Toronto, Canada.
- 2006 Planning committee for the 2006 Fields/MITACS Industrial Problem-Solving Workshop, Toronto, Canada.
- 2005 Planning committee for the 2006 GIMMC/IPSW.
- 2003 Co-organizer of a mini-symposium at the joint CAIMS/SIAM meeting in Montreal, *MS26:Mathematics and Computer Simulation in Kinetic Theory*.
- 2002 Planning committee for the Sixth PIMS Industrial Problem Solving Workshop.

SERVICE AND PROFESSIONAL ACTIVITIES

b. Editorship

- 2007-Present Editor for Mathematics in Industry Case Studies (online journal).
- 2005 Editor for the Ninth PIMS Industrial Problem Solving Workshop Proceedings.
- 2004 Editor for the Eighth PIMS Industrial Problem Solving Workshop Proceedings.
- 2003 Editor for the Seventh PIMS Industrial Problem Solving Workshop Proceedings.

SERVICE AND PROFESSIONAL ACTIVITIES

c. Cooperative Extension Service Bulletins and Circulars

- Bohun, C.S. (2005). Math Professor Publishes Book on Mathematical Modeling. *The Bridge*. **14**(14), p. 5.
- Bohun, C.S. (2005). News in Brief. *The Record Herald*. September 20.
- Bohun, C.S. (2005). Professor publishes his first book. *The Record Herald*. April 1.
- Bohun, C.S. (2004). Second PIMS Crystal Growth Workshop. *Pacific Institute for the Mathematical Sciences Magazine*. **8**(1), p. 11.
- Bohun, C.S. (2002). PIMS–MITACS Crystal Growth Workshop. *Pacific Institute for the Mathematical Sciences Magazine*. **6**(2), p. 22.

SERVICE AND PROFESSIONAL ACTIVITIES

d. Outreach

- 2008 Site visit to Firebird Technologies Inc., Trail British Columbia. (May 1-3, 2008).
- 2007 Site visit to Nippon Steel and the University of Tokyo. Tokyo Japan. (October 26-29, 2007).
- 2007 Faculty mentor for the Canadian Science Fair Team.
- 2007-2008 Ontario University Fair, Toronto Ontario.
- 2007-2009 Judge for the Durham Regional Science Fair, Oshawa Ontario.
- 2005 Class visit to Plainfield Elementary, Plainfield Pennsylvania.
- 2005 Hosted a mini-workshop on Industrial Mathematics at Shepherd University, West Virginia.
- 2001-2006 Judge for the Franklin Science and Technology Fair.

HQP TRAINING

2008-2009 Mathematical Contest in Modelling Competition. Participants Hennessy, Kloosterman, Moyles

2008-2009 Undergraduate thesis: Modelling and Optimization of Cz Crystal Growth. Armstrong

2008-2009 Undergraduate thesis: Predicting the Nucleation and Growth of Single Walled Carbon Nanotubes. Moyles

2008 Summer research student: Optimization of the Czochralski method for InSb crystal growth. Armstrong

2008 Summer research student: Optimal Design of a Biolistic Gene-Particle Delivery System. Hanz (Winner of the poster session for Science at the 2008 UOIT Research Fair)

2007-2008 Undergraduate thesis: A Model for the Release of an Encapsulated Breaker. McGill

2007-2008 Undergraduate thesis: Modeling the Growth of Silicon Nanowires. Tudora

EMPLOYMENT HISTORY

a. Teaching Duties at UOIT

<i>Year</i>	<i>Course</i>	<i>Term</i>	<i>Duties</i>
2010	MATH 4030U - Applied Functional Analysis	Fall	Instructor
2010	MATH 3050U - Mathematical Modelling	Fall	Co-Instructor
2009	MATH 6010U - Mathematical Modelling	Fall	Co-Instructor
2009	MATH 3040U - Optimization	Fall	Instructor
2009	MATH 4060U - Industrial Mathematics	Fall	Instructor
2009	MATH 3050U - Mathematical Modelling	Spring	Instructor
2008	MATH 1010U - Calculus I	Fall	Instructor/Coordinator
2008	MATH 3040U - Optimization	Fall	Instructor
2008	MATH 4060U - Industrial Mathematics	Fall	Instructor
2008	MATH 6010U - Mathematical Modelling	Fall	Co-Instructor
2008	MATH 3050U - Mathematical Modelling	Spring	Instructor
2007	MATH 3040U - Optimization	Fall	Instructor
2007	MATH 4060U - Industrial Mathematics	Fall	Instructor
2007	MATH 6010U - Mathematical Modelling	Fall	Co-Instructor
2007	MATH 1020U - Calculus II	Spring	Instructor
2007	MATH 2810U - Advanced Engineering Mathematics	Spring	Instructor
2006	MATH 3040U - Optimization	Fall	Instructor

b. Teaching Duties at Penn State – Mont Alto

<i>Year</i>	<i>Course</i>	<i>Term</i>	<i>Duties</i>
2006	M250 - Ordinary Differential Equations	Spring	Instructor
2006	M251 - Ordinary & Partial Differential Equations	Spring	Instructor
2006	M277 - Mathematical Modelling	Spring	Instructor
2005	M141 - Calculus II	Fall	Instructor
2005	M231 - Calculus of Several Variables	Fall	Instructor
2005	M232 - Integral Vector Calculus	Fall	Instructor
2005	M141 - Calculus II	Spring	Instructor

2005	M277 - Mathematical Modelling	Spring	Instructor
2004	M141 - Calculus II	Fall	Instructor
2004	M220 - Linear Algebra	Fall	Instructor
2004	M231 - Calculus of Several Variables	Fall	Instructor
2004	M232 - Integral Vector Calculus	Fall	Instructor
2004	M141 - Calculus II	Spring	Instructor
2004	M250 - Ordinary Differential Equations	Spring	Instructor
2004	M251 - Ordinary & Partial Differential Equations	Spring	Instructor
2004	M297A - Mathematical Modelling	Spring	Instructor
2003	M140 - Calculus I	Fall	Instructor
2003	M231 - Calculus of Several Variables	Fall	Instructor
2003	M232 - Integral Vector Calculus	Fall	Instructor
2003	M232 - Integral Vector Calculus	Spring	Instructor
2003	M297A - Mathematical Modelling	Spring	Instructor
2002	M140 - Calculus I	Fall	Instructor
2002	M141 - Calculus II	Fall	Instructor
2002	M220 - Linear Algebra	Fall	Instructor
2002	M141 - Calculus II	Spring	Instructor
2002	M250 - Ordinary Differential Equations	Spring	Instructor
2002	M251 - Ordinary & Partial Differential Equations	Spring	Instructor
2001	M110 - Techniques of Calculus I	Fall	Instructor
2001	M140 - Calculus I	Fall	Instructor
2001	M231 - Calculus of Several Variables	Fall	Instructor
2001	M140 - Calculus I	Spring	Instructor
2001	M141 - Calculus II	Spring	Instructor
2001	M232 - Integral Vector Calculus	Spring	Instructor

c. Teaching Duties at the University of Victoria

<i>Year</i>	<i>Course</i>	<i>Term</i>	<i>Duties</i>
2000	M102 - Calculus	Fall	Substitute Instructor
2000	M200 - Calculus	Fall	Tutorial
2000	Math Assistance Centre	Fall	
2000	M256 - Statistics	Summer	Sessional Instructor
2000	M101 - Calculus	Spring	Sessional Instructor
2000	M201 - Ordinary differential equations	Fall	Tutorial
1999	M255 - Statistics	Summer	Sessional Instructor
1999	M261 - Statistics	Spring	Substitute Instructor
1999	Math Assistance Centre	Spring	
1998	Math Assistance Centre	Fall	
1998	M151 - Finite Mathematics	Fall	Sessional Instructor
1998	M256 - Statistics	Summer	Sessional Instructor
1998	M101 - Calculus	Summer	Sessional Instructor
1998	M325 - Ordinary differential equations	Spring	Marker
1997	M323 - Applied differential equations	Fall	Marker
1997	M200 - Calculus	Fall	Sessional Instructor
1997	M224 - Discrete and combinatorial mathematics	Summer	Marker

1996	M101 - Calculus	Spring	Sessional Instructor
1996	M101 - Calculus	Spring	Sessional Instructor
1995	M201 - Ordinary differential equations	Summer	Tutorial
1995	M201 - Ordinary differential equations	Summer	Sessional Instructor
1995	M326 - Partial differential equations	Spring	Marker
1994	M325 - Ordinary differential equations	Fall	Marker
1994	M323 - Applied differential equations	Fall	Marker
1994	M201 - Ordinary differential equations	Summer	Sessional Instructor
1994	M101 - Calculus	Spring	Sessional Instructor
1993	M201 - Ordinary differential equations	Fall	Tutorial
1993	M200 - Calculus	Fall	Tutorial
1993	M100 - Calculus	Fall	Sessional Instructor
1993	M102 - Calculus	Summer	Sessional Instructor
1993	M200 - Calculus	Spring	Tutorial
1993	P125 - Fundamentals of Physics	Spring	Marking
1992	M102 - Calculus	Fall	Sessional Instructor
1992	EE216 - Electricity and Magnetism	Fall	Teaching Assistant
1992	P588 - General Relativity	Summer	Research Assistant
1992	P125 - Fundamentals of Physics	Spring	Marking
1992	M200 - Calculus	Spring	Tutorial
1992	Math Assistance Center	Spring	
1991	Math Assistance Center	Fall	
1991	EE216 - Electricity and Magnetism	Fall	Teaching Assistant
1991	M200 - Calculus	Fall	Tutorial
1991	Astr120 - Astronomy	Spring	Marking
1990	Astr120 - Astronomy	Fall	Marking
1990	P120 - Mechanics	Spring	Marking
1989	P110 - Introductory Physics	Fall	Lab instructor
1988	M330B - Complex Variable	Spring	Marking

EMPLOYMENT HISTORY

d. Other Academic Experience

<i>Period</i>	<i>Employer</i>	<i>Duties</i>
October 2005 - December 2005	Canadian Department of Fisheries and Oceans	Consultant
October 2005	Shepherd University, Department of Engineering	Consultant
September 2005	H & K Tool Co.	Consultant
January 2005 - March 2005	Interpretive Designs	Consultant
July 2000 - December 2000	University of Victoria, Department of Mathematics and Statistics	Research Assistant
January 2000	Columbia Power Corporation	Consultant
May 1988 - September 1988	Crystar Research	Research Assistant
September 1987 - January 1988	Defence Research Establishment Pacific	Research Assistant
January 1987 - April 1987	Arctic Science	Research Assistant
May 1986 - September 1986	University of Manitoba, Cyclotron Laboratory	Research Assistant