

GRADUATE STUDENT SUPERVISION:

a) Completed:

Ph.D.

- D. The Invariant gauge fields over non-reductive spaces and contact geometry of hyperbolic equations of generic type, Ph.D. thesis, McGill University, 2008.
Dr. The has been awarded an NSERC Post-doctoral Fellowship. He is spending the academic year 2008-2009 at Texas A&M University.
- M. Fortin-Boisvert Turbiner's conjecture and quasi-exact solvability in three dimensions, Ph.D. thesis, McGill University, 2008.
Dr. Fortin-Boisvert has been awarded an NSERC Post-doctoral Fellowship. She is currently on maternity leave.
- E. Reyes On the integrability of scalar partial differential equations in two independent variables; some geometric aspects, Ph.D. thesis, McGill University, 1998.
Dr. Reyes has been awarded an NSERC Post-doctoral Fellowship. He spent the academic year 1998-99 at Utah State University and the academic years 1999-2000 and 2000-2001 at the University of Minnesota and Yale University. He is currently a tenured Associate Professor at the University of Santiago, Chile.
- R. Milson Geometry of Lie-algebraic operators, Ph.D. thesis, McGill University, 1996.
Dr. Milson has been awarded an NSERC Post-doctoral Fellowship and the D.W. Ambridge Prize for the best Ph.D. thesis of the year in the physical sciences and engineering at McGill University. Dr. Milson spent the academic year 1996-97 as a Post-doctoral Fellow at the University of Minnesota and the academic year 1997-98 as a member of the Institute for Advanced Study in Princeton. He is now an tenured Associate Professor of Mathematics at Dalhousie University.
- M. Fels Some applications of Cartan's method of equivalence to the geometric study of ordinary and partial differential equations, Ph. D. thesis, McGill University, 1993.
Dr. Fels has been awarded an NSERC Post-doctoral Fellowship. He spent the academic year 1993-94 as a Post-doctoral Fellow at Utah State University and the academic years 1994-95 and 1995-96 at the University of Minnesota. He is now a tenured Associate Professor of Mathematics at Utah State University.

M. Sc.

- S. Rayan Charged particle dynamics in Kerr-Newman-de Sitter geometries, M. Sc. thesis, McGill University, 2007
- J. Malkoun Value distribution theory for holomorphic maps into complex Grassmannians, M. Sc. thesis, McGill University, 2006.
- M.R. Hosseini A convex Darboux theorem of Ekeland and Nirenberg, M.Sc. thesis, McGill University, 2005.
- A. Zahedi Equivalence problems for first order Lagrangians on the line, M.Sc. thesis, McGill University, 2004.
- A.R. Mansouri The variational bi-complex for hyperbolic equations in the plane, M.Sc. thesis, McGill University, 2002.
- A. Roche On a natural variational principle for symmetric connections, M. Sc. thesis, McGill University, 2001.
- J. Morton Existence and non-existence theorems for solutions to the Einstein-Dirac-Maxwell equations, M. Sc. thesis, McGill University, 2001.
- G. Dumais Killing Spinors and Spectral Properties of the Dirac Operator on Compact Manifolds, M. Sc. thesis, McGill University, 1994.
- R. Milson A distinguished, non-trivial class, in the Chevalley cohomology associated with the Lie algebra of infinitesimal automorphisms of contact structures, M. Sc. thesis, McGill University, 1992.
- M. Fels Higher-order symmetries and separation of variables for systems of partial differential equations, M. Math. thesis, University of Waterloo, 1989.
- S. Gibbs An application of Elie Cartan's method of equivalence to the theory of ordinary differential equations, M. Math. thesis, University of Waterloo, 1988.

b) In progress:

Ph.D.

- S. Froehlich A generalized Cartan-Kähler theorem, Ph.D. thesis, McGill University, 2011 (expected).

M. Sc.

- P. Rempel Automorphisms groups in projective differential geometry, M. Sc. thesis, McGill University, 2010 (expected).
- O. Makhmali Green's functions for Hodge Laplacians, M. Sc. thesis McGill University, 2010 (expected)

c) Publications resulting from my students' Ph.D. theses:

1. M. Fortin-Boisvert, 2008, Turbiner's conjecture in three dimensions, *J. Geom. Phys.*, 58, no. 2, pp. 218-237
2. M. Fortin-Boisvert, 2007, Quasi-Exactly Solvable Schrödinger Operators in Three Dimensions, *SIGMA* 3, 109, pp. 1-24.
3. D. The, 2008, Invariant Yang-Mills connections over non-reductive pseudo-riemannian homogeneous spaces, *Transactions of the American Mathematical Society*, accepted for publication on March 6, 2008.
4. D. The, 2008, Contact Geometry of Hyperbolic Equations of Generic Type, *SIGMA* 4, 058, pp. 1-52.
5. E. Reyes, 1998, Pseudo-spherical surfaces and integrability of evolution equations, *J. Differential Equations*, 147, no. 1, pp. 195-230
6. R. Milson, 1998, Imprimitively generated Lie-algebraic Hamiltonians and separation of variables, *Canad. J. Math.*, 50, no. 6, pp. 1298-1322.
7. R. Milson, 1995, Representations of finite-dimensional Lie algebras by first-order differential operators, *J. London Math. Soc.*, 52, pp. 285-302.
8. R. Milson, 1995, On the construction of quasi-exactly solvable Schrödinger operators on homogeneous spaces, *J. Math. Phys.*, 36, pp. 6004-6027.
9. M. Fels, 1995, The equivalence problem for systems of second-order ordinary differential equations, *Proc. London Math. Soc.*, 71, pp. 221-240.

SUPERVISION OF POST-DOCTORAL FELLOWS:

a) Completed:

- D. Gómez-Ullate Ph.D., Universidad Complutense, Madrid, 2002. Dr. Gomez-Ullate spent the academic years 2002-2003 and 2003-2004 at McGill University. He is currently a Ramon y Cajal Fellow at the Universidad Complutense in Madrid, Spain.
- S.H. Wang Ph.D., Duke University, 2001. Dr. Wang spent the academic year 2001-2002 at McGill University. He is currently a post-doctoral Fellow at the Max Planck Institute for Mathematics in Bonn.
- D. Richter Ph.D., University of Minnesota, 1998. Dr. Richter spent the academic years 1998-1999 and 1999-2000 at McGill University. He is now a tenure-track Assistant Professor of Mathematics at Southeastern Missouri State University
- P. Bracken Ph.D., University of Waterloo, 1997. Dr. Bracken spent the Academic years 1997-1998 and 1998-1999 at McGill University and at

the centre de recherches mathématiques. He is now an Assistant Professor of Mathematics at Concordia University.

T. Robart Graduate of l' Ecole Normale Supérieure, Paris, Ph.D., Université d' Aix-Marseille, Faculté des Sciences de Luminy, 1994.
Dr. Robart spent the academic years 1995-96 and 96-97 as an NSERC Post-doctoral Fellow at McGill. He is now an tenured Associate Professor of Mathematics at Howard University.

P. Doyle Ph.D., University of Minnesota, 1992.

Dr. Doyle spent the academic year 1992-93 as a post-doctoral fellow at McGill University. He is now a tenure-track Assistant Professor of Mathematics at the University of Hawaii.

A. González-López Ph.D., Universidad Complutense, Madrid, 1984. Dr. González-López spent the academic year 1988-89 as a post-doctoral fellow at the University of Waterloo. He is now a tenured Full Professor of Theoretical Physics at the Universidad Complutense in Madrid.

b) In progress:

Francis Valiquette Ph.D., University of Minnesota, 2009. Dr. Valiquette will spend the academic years 2009-2010 and 2010-2011 as an NSERC post-doctoral Fellow at McGill University.

Abraham Smith Ph.D, Duke University, 2009. Dr. Smith will spend the academic years 2009-2010 and 2010-2011 as an NSF-MSRI post-doctoral Fellow at McGill University.

T. Daudé Ph.D. Université de Bordeaux, 2004. Dr. Daudé will spend the academic years 2007-2008 and 2008-2009 and the Fall term of 2009 as a post-doctoral Fellow at McGill University.