

# Curriculum vitae

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Born March 30 1954 in Versailles, France  
Married to Serge Robert (one child).

## Studies and Career

- Ph.D. Université de Montréal, 1977.
- Postdoc from CRSNG, Mc Gill University, 1977-79.
- Interim Professor at Université de Montréal, 1979-82.
- NSERC Research Fellow at Université de Montréal, 1982-87.
- Associate Professor at Université de Montréal, 1987- (Full Professor since 1991).
- Department Chair, 1993-97.
- Invited professor at Université de Bourgogne (one month in 1999-2000).
- Interim Director of CRM, September 2008-May 2009.

## Refereed Publications

- 76. Analytic normal forms and inverse problems for unfoldings of 2-dimensional saddle-nodes with analytic center manifold, avec Loïc Teyssier, to appear in Annales de l'École Normal Supérieure.
- 75. The bifurcation diagram of cubic polynomial vector fields on  $CP^1$ , Canad. Math. Bull., 60 (2017), 381-401.
- 74. Intrinsic character of Stokes matrices, with Jean-François Gagnon, Journal of Differential Equations, 262 (2017), no. 3, 2607-2617.
- 73. Moduli space for generic unfolded differential linear systems, with Jacques Hurtubise, Advances in Mathematics 307 (2017), 1268-1323.
- 72. Divergent series: past, present, future..., C. R. Math. Rep. Acad. Sci. Canada Vol. 38 (3) 2016, pp. 85-98.
- 71. Finite cyclicity of some center graphics through a nilpotent point inside quadratic systems, avec Robert Roussarie, Trans. Moscow Math. Soc. 2015, 181-218.

- 70. Finite cyclicity of some graphics through a nilpotent point of saddle type inside quadratic systems, avec Chunhua Shan et Huaiping Zhu, *Qualitative Theory of Dynamical Systems*, 15 (2016), no. 1, 237-256.
- 69. Complete system of analytic invariants for unfolded differential linear systems with an irregular singularity of Poincaré rank  $k$ , with Jacques Hurtubise and Caroline Lambert, *Moscow Mathematical Journal*, 14 (2014), 309-338.
- 68. How Inge Lehmann discovered the inner core of the Earth, *College Mathematics Journal*, 44 (2013), no. 5, 399-408.
- 67. Moduli space of unfolded differential linear systems with an irregular singularity of Poincaré rank 1, with Caroline Lambert, *Moscow Mathematical Journal*, 13 (2013), no. 3, 529-550, 553-554.
- 66. Analytic moduli for unfoldings of germs of generic analytic diffeomorphisms with a codimension  $k$  parabolic point, *Ergodic Theory and Dynamical Systems*, 35 (2015), 274-292.
- 65. The moduli space of germs of generic families of analytic diffeomorphisms unfolding a parabolic fixed point, with Colin Christopher, *International Mathematical Research Notes* 2014 (2014), 2494-2558.
- 64. The modulus of unfolding of cusps in conformal geometry, *J. Differential Equations*, 252 (2012), 1562-1588.
- 63. Complete system of analytic invariants for unfolded differential linear systems with an irregular singularity of Poincaré rank 1, with Caroline Lambert, *Moscow Mathematical Journal*, 12 (2012), 77-138.
- 62. The modulus of analytic classification for the unfolding of the codimension-one flip and Hopf bifurcations, with Waldo Arriagada-Silva, *Annales de la Faculté des Sciences de Toulouse, Série 6, Volume XX* (2011), 541-580.
- 61. Organizing Center for the Bifurcation Analysis of a Generalized Gause Model with Prey Harvesting and Holling Response Function of Type III, with Sophie Laurin, *J. Differential Equations*, 251 (2011), 2980-2986.
- 60. Bifurcation Analysis of a Generalized Gause Model with Prey Harvesting and a Generalized Holling Response Function of Type III, with Remy Magloire Etoua, to appear in *J. Differential Equations*.
- 59. The moduli space of germs of generic families of analytic diffeomorphisms unfolding of a codimension one resonant diffeomorphism or resonant saddle, *J. Differential Equations*, 248 (2010), 1794-1825.
- 58. Study of the cyclicity of some degenerate graphics inside quadratic systems, with Freddy Dumortier, *Communications in Pure and Applied Analysis*, 8, (2009), 1133-1157.
- 57. Bifurcation analysis of a predator-prey system with generalised Holling type III functional response, with Y. Lamontagne and C. Coutu, *Journal of Dynamics and Differential Equations*, 20, (2008), 535-571.
- 56. The Stokes phenomenon in the confluence of the hypergeometric equation using Riccati equation, with Caroline Lambert, *Journal of Journal of Differential Equations*, 244, (2008), 2641-2664.
- 55. Finite cyclicity of nilpotent graphics of pp-type surrounding a center, with Robert Roussarie, *Bulletin of the Belgian Mathematical Society - Simon Stevin*, 5, (2008), 889-920.

- 54. Analytical moduli for unfoldings of saddle-node vector-fields, with Loïc Teysier, *Moscow Mathematical Journal*, 8, (2008), 547-614.
- 53. The moduli space of germs of generic families of analytic diffeomorphisms unfolding a parabolic fixed point, with C. Christopher, *C. R. Acad. Sci. Paris, Ser. I* 345 (2007) 695-698.
- 52. Modulus of analytic classification for the generic unfolding of a codimension one resonant diffeomorphism or resonant saddle, with C. Christopher, *Annales de l'Institut Fourier*, 57, (2007), 301-360.
- 51. The root extraction problem, *Journal of Differential Equations*, 234, (2007), 110-141.
- 50. Modulus of orbital analytic classification for a family unfolding a saddle-node. Article on invitation for Ilyashenko's 60th birthday, *Moscow Mathematical Journal*, 5, (2005), 245-268.
- 49. Normalizable, integrable and linearizable saddle points in the Lotka-Volterra system, with C. Christopher, *Qualitative Theory of Differential Equations*, 5, (2004), 11-61.
- 48. Addendum to the paper "Modulus of analytic classification for unfoldings of generic parabolic diffeomorphisms", *Moscow Mathematical Journal*, 4, (2004), 499-502.
- 47. Modulus of analytic classification for unfoldings of generic parabolic diffeomorphisms. With P. Mardesic and R. Roussarie, *Moscow Mathematical Journal*, 4, (2004), 455-498.
- 46. Normalizability, synchronicity and relative exactness for vector fields in  $C^2$ . With C. Christopher and P. Mardesic, *Journal of Dynamical and Control Systems*, 10, (2004), 501-525.
- 45. PP-graphics with a nilpotent elliptic singularity in quadratic systems and Hilbert's 16<sup>th</sup> problem. With H. Zhu, *J. Differential Equations*, 196, (2004), 169-208.
- 44. Normalizable, integrable and linearizable saddle points in complex quadratic systems in  $C^2$ , with C. Christopher and P. Mardesic, *Journal of Dynamical and Control Systems*, 9, (2003), 311-363.
- 43. Finite cyclicity of elementary graphics surrounding a focus or center in quadratic systems, with F. Dumortier and A. Guzmán, *Qualitative theory of dynamical systems*, 3, (2002), 123-154.
- 42. Normal forms near a saddle-node and applications to finite cyclicity of graphics, with F. Dumortier and Y. Ilyashenko, *Ergodic theory and dynamical systems*, 22, (2002), 783-818.
- 41. Finite cyclicity of graphics with a nilpotent singularity of saddle or elliptic type, with H. Zhu, *J. Differential Equations*, 178, (2002), 325-436.
- 40. Finite cyclicity of finite codimension nondegenerate homoclinic loops with real eigenvalues in  $R^3$ , with L.-S. Guimond, *Qualitative theory of dynamical systems*, 2, (2001), 151-204.
- 39. Non degenerate linearisable centres of complex planar quadratic and symmetric cubic systems in  $C^2$ , with C. Christopher, *Publicacions Matemàtiques*, 45, (2001), 95-123.
- 38. Genericity conditions for finite cyclicity of elementary graphics, with A. Guzman, *J. Differential Equations*, 155, (1999), 44-72.
- 37. Global study of a family of cubic Liénard equations, with A. Khibnik and B. Krauskopf *Nonlinearity*, 11, (1998), 1505-1519.
- 36. Cyclicity of graphics with semi-hyperbolic points inside quadratic systems, with G. Swirszcz and H. Zoladek, *Journal of Dynamical Systems and Control*, 4, (1998), 149-189.
- 35. Codimension-three unfoldings of reflectionally symmetric vector fields, with B. Krauskopf, *Nonlinearity*, 10, (1997), 1115-1150.

- 34. Local bifurcations of critical periods in the reduced Kukles system, with B. Toni, *Jour. Canadien Math.*, 49, (1997), 338-358.
- 33. Darboux linearization and isochronous centers with a rational first integral, with P. Mardesic and L. Moser-Jauslin, *J. Differential Equations*, 134, (1997), 216-268.
- 32. A stratum of cubic vector fields with two symmetry axes passing through an integrable saddle, with L.-S. Guimond, *Nonlinearity*, 9, (1996), 761-785.
- 31. Hilbert's 16th problem for quadratic systems and cyclicity of elementary graphics, with F. Dumortier and M. El Morsalani, *Nonlinearity*, 9, (1996), 1209-1261.
- 30. Almost planar homoclinic loops in  $\mathbb{R}^3$ , with R. Roussarie, *J. Differential Equations*, 126, (1996), 1-47.
- 29. The centers in the reduced Kukles system, with D. Schlomiuk and P. Thibaudeau, *Nonlinearity*, 8, (1995), 541-569.
- 28. Cubic vector fields symmetric with respect to a center, with D. Schlomiuk, *J. Differential Equations*, 123 (1995), 388-436.
- 27. Linearization of isochronous systems, with P. Mardesic and B. Toni, *J. Differential Equations*, 121, (1995), 67-108.
- 26. Elementary graphics of cyclicity 1 and 2, with F. Dumortier and R. Roussarie, *Nonlinearity*, 7, (1994), 1001-1043.
- 25. Hilbert's 16th problem for quadratic vector fields, with F. Dumortier and R. Roussarie, *J. Differential Equations*, 110, (1994), 86-133.
- 24. Local bifurcation of critical periods in vector fields with homogeneous nonlinearities of the third degree, with B. Toni, *Bull. Can. de Mathématiques*, 34, (1993), 473-484.
- 23. Bifurcations at infinity in polynomial vector fields, with T. Blows, *J. Differential Equations*, 104, (1993), 215-242.
- 22. Zeroes for complete elliptic integrals for 1:2 resonance, with H. Zoladek, *J. Differential Equations*, 94, (1991), 41-54.
- 21. Cubic Liénard equations with linear damping, with F. Dumortier, *Nonlinearity*, 3, (1990), 1015-1039.
- 20. A simple proof for the unicity of the limit cycle in the Bogdanov-Takens theorem, with C. Li and X. Wang, *Bull. Can. de Math*, 33, (1990), 84-92.
- 19. Codimension 2 symmetric homoclinic bifurcation and application, with Li Chengzhi, *J. Can. de Math*, 42, (1990), 191-212.
- 18. Codimension 1 and 2 bifurcations of fixed points of diffeomorphisms and of periodic solutions of vector fields, *Ann. Math. du Québec*, 13, (1989), 55-91.
- 17. Saddle quantities and applications, with P. Joyal, *J. Differential Equations*, 78, (1989), 374-399.
- 16. A system with three limit cycles appearing in a Hopf bifurcation and dying in a homoclinic bifurcation. The cusp of order 4, with Li Chengzhi, *J. Differential Equations*, 79, (1989), 132-167.
- 15. Elementary characterization of orbits and strata in the classical Lie and Jordan algebras. *Bull. Math. de la Soc. Math. de Roumanie*, 32, (1988), 75-88.
- 14. Generalized Hopf bifurcations and applications to planar quadratic systems. with D. Schlomiuk. *Ann. Pol. Math.*, 49, (1988), 1-16.
- 13. Clebsh-Gordan coefficients for  $SU(5)$  unification models. With M.A. del Olmo, J. Patera, M.A. Rodriguez. *J. Math. Phys.*, 20, (1987), 258-271.

- 12. Example of a quadratic differential system with 2 cycles appearing in a homoclinic loop bifurcation, *J. Differential Equations*, 66, (1987), 140-150.
- 11. Bifurcations methods in quadratic systems, *Canadian Mathematical Society Conference Proceedings*, vol. 8, (1987), 637-653.
- 10. Spectral decomposition theorem for symmetric matrices in topoi and applications. *J. Pure and Appl. Algebra*, 38, (1985), 91-102.
- 9. Clebsh-Gordan coefficients for E6 and SO(10) unification models,. with I.G. Koh and J. Patera. *J. Math. Phys.*, 25, (1984), 2863-2872.
- 8. Clebsh-Gordan coefficients for SU(5) 2 SU(3) x SU(2) x U(1) theories, with I.G. Koh and J. Patera. *J. Math. Phys.*, 24, (1983), 1955-1967.
- 7. Versal deformations of elements of classical Jordan algebras, with J. Patera, *J. Math. Phys.*, 24, (1983), 1375-1380.
- 6. Complex orthogonal and symplectic matrices depending on parameters, with J. Patera, *J. Math. Phys.*, 23, (1982), 705-714.
- 5. Dimensions of orbits and strata in complex classical Lie algebras, with J. Patera and D. Schlomiuk, *J. Math. Phys.*, 23, (1982), 490-494.
- 4. Versal deformations of elements of real classical Lie algebras, with J. Patera and D. Schlomiuk, *J. Phys. A*, 15, (1982), 1063-1086.
- 3. Formes normales des matrices rectangulaires dans un topos and applications, *Ann. Math. du Québec*, 5, (1981), 81-85.
- 2. Nombres réels et complexes dans les topos spatiaux, *Ann. Math. du Québec*, 3, (1979), 143-159.
- 1. Topos theory and complex analysis, *J. Pure and Appl. Algebra*, 10, (1977), 299-313.

### Refereed papers in Proceedings

- 10. Mathematics is everywhere, avec Eduardo Colli, Fidel Nemenzo et Konrad Polthier, *Proceedings of a panel "Mathematics is everywhere" at ICM 2014*.
- 9. Mathematics of Planet Earth, Livre "Mathematical models and methods for Planet Earth", Springer INdAM Series, Vol. 6, 2014.
- 8. A course "Mathematics and Technology", to appear in *Proceedings of ICME11*.
- 7. The role of mathematicians in popularization of mathematics, *Proceedings of the Panel "Communicating Mathematics to society at large" at ICM 2010*.
- 6. Communicating Mathematics to society at large, with M. Freiburger, I. Peterson, R. Ramachandran, G. Ziegler, *Proceedings of a panel "Communicating Mathematics to society at large" at ICM2010*.
- 5. Normal forms for germs of analytic families of vector fields unfolding a generic saddle-node or resonant saddle, *Nonlinear dynamics and evolution equations*, 227--245, *Fields Inst. Commun.*, 48, Amer. Math. Soc., Providence, RI, 2006.
- 4. Hilbert's 16-th problem for quadratic vector fields and cyclicity of graphics, *Proceedings of the Second World Congress of Nonlinear Analysts*, (Athens, 1996), *Nonlinear Analysis, Theory, Methods and Applications*, 30 (1), (1997), 437-445.
- 3. Universal unfolding of a singularity of a symmetric vector field with 7-jet  $C^\infty$ -equivalent to  $y \frac{\partial}{\partial x} + (\pm x^3 \pm x^6 y) \frac{\partial}{\partial y}$ , *Proceedings of the Luminy Workshop "Bifurcations and periodic orbits of vector fields"*, *Springer Lecture Notes in Math.*, 1455, (1992), 334-355.

- 2. Topos theory and complex analysis, Proc. on the Durham Symp. on Applications of sheaves 1977, Springer Lecture Notes in Math., 753, (1979), 623-659.
- 1. Complex structures on topoi, Proc. of Aarhus Meeting 1978, Aarhus Publ. Ser., 30, (1979), 196-210.

### Chapters of monographies

- Bifurcation methods in polynomial systems, Proceedings of the Nato Advanced Study Institute (Séminaire de Mathématiques Supérieures), “Bifurcations and periodic orbits of vector fields”, 1992, 50 pages, Kluwer editor, 1993.
- Normal forms, bifurcations and finiteness properties of vector fields, dans “Normal forms, bifurcations and finiteness properties of vector fields”, NATO Science Series II : Mathematics, Physics and Chemistry, 137. Kluwer Academic Publishers, Dordrecht, 2004, 431-470.
- *Mathematics of Plane Earth*, dans « Mathematical Models and methods for Planet Earth », Springer INdAM Series, Vol. 6, 2014, 1-10.
- *El posicionamiento sobre la tierra*, dans « Unidad Didáctica : Matemáticas del planeta tierra » (en espagnol), Fundación española para la ciencia y la tecnología, 2014,15-27.

### Editor of a book

- Editor with Y. Ilyashenko and G. Sabidussi de “Normal forms, bifurcations and finiteness problems in differential equations”, Proceedings of the Séminaire de mathématiques supérieures, NATO Science Series II: Mathematics, Physics and Chemistry, 137. Kluwer Academic Publishers, Dordrecht, 2004.
- Editor with H. Kaper of “Mathematics of Planet Earth”, SIAM 2015.

### Books

- Mathématiques et technologie, with Yvan Saint-Aubin, Springer Undergraduate Texts in Mathematics and Technology, Springer, New York, 2008, 594p.
- Mathematics and technology, with Yvan Saint-Aubin, Springer Undergraduate Texts in Mathematics and Technology, Springer, New York, 2008, 580p.
- Mathematik und technologie, with Yvan Saint-Aubin, Springer Spektrum, Berlin Heidelberg, 2012, 609p.
- Matemática e atualidade, avec Yvan Saint-Aubin, volumes 1 et 2, Sociedade Brasileira de Matemática, 2015.

### Prizes and distinctions

- Prix Abel-Gauthier 1999 from AMQ (association mathématique du Québec), for the personality of year 1999.
- Teaching prize from Université de Montréal for the best academic book, with Yvan Saint-Aubin, 2009.
- Adrien-Pouliot prize from AMQ (association mathématique du Québec), for the book “Mathématiques et technologie”, with Yvan Saint-Aubin, 2009.
- Graham-Wright Distinguished Service Award of the Canadian Mathematical Society, 2009.
- Fellow of the American Mathematical Society, 2013.
- Prix Abel-Gauthier 2013 from AMQ (association mathématique du Québec), for the personality of year 2013.

- Fellow of the American Mathematical Society.
- George Polya Award 2014 from Mathematical Association of America.
- Inaugural Bertrand-Russell Prize 2018 of the American Mathematical Society.

### **Named lectures**

- Regular Lecture at ICME-11 (11th International Conference on Mathematics Education), Monterrey, Mexico, 2008.
- Panelist in a panel "Communicating Mathematics to Society at large" at ICM 2010.
- Pekeris Lecture at Weizmann Institute, 2012.
- Chair of the panel "Mathematics if everywhere" at ICM 2014.
- MAA Invited Address at Joint Mathematics Meeting, January 2015.

### **Public lectures**

- Mathematics of Planet Earth, Kyoto University-Inamori Foundation Joint Kyoto Prize Symposium (KUIP), 2016.
- Des mathématiques pour comprendre et gérer la planète, Québec, Canada, 2013.
- Des mathématiques pour comprendre et gérer la planète, Rennes, France, 2013.
- Mathematics of Planet Earth, Asian Mathematical Congress 2013, Korea, 2013.
- Mathematics of Planet Earth, INdAM, Roma, 2013.
- Mathematics of Planet Earth, BCAM, Bilbao, Spain, 2013.
- Décrire la nature par les géométries», les Belles Soirées de l'Université de Montréal, 2012.
- Décrire la nature par les géométries, Madrid, 2012.
- Des géométries pour décrire la nature, University Laval, Quebec, 2011.

### **Learned Societies**

- Member of Canadian Mathematical Society.
- Member of Canadian Applied and Industrial Mathematical Society.
- Member of American Mathematical Society.
- Member of Association Mathématique du Québec.
- Member of Mathematical Association of America.
- Member of SIAM.

### **Administrative positions in learned societies**

- Vice-president of Canadian Mathematical Society, 1995-97.
- President elect of Canadian Mathematical Society, 2001-2002, President, 2002-2004, Past-President, 2004-2005.
- Member of the Canadian Delegation to the General Assembly of the IMU, Shanghai, August 2002, Santiago de Compostelle, August 2006, Bangalore, 2010.
- Member of CRM Board: 1997-2008.
- Chair of the CNC-IMU Committee, Canada, 2006-2008.
- Vice-president of International Mathematical Union (IMU), 2011-2014.
- Member of the Klein project, a joint initiative of IMU and ICMI, 2009-.
- Delegate of the International Mathematical Union (IMU) at the General Assembly of the International Council of Science (ICSU), Roma, 2011.

- President of the ICM Emmy Noether Lecture Committee for ICM2014.
- Member of the Executive Committee of IMU, 2015-2018.
- Member of the Scientific Committee of the International Basic Science Program at UNESCO, 2015-2017.

### **Books**

- Mathématiques et technologie, with Yvan Saint-Aubin, Springer Undergraduate Texts in Mathematics and Technology, Springer, New York, 2008, 594p.
- Mathematics and Technology, with Yvan Saint-Aubin, Springer Undergraduate Texts in Mathematics and Technology, Springer, New York, 2008, 580p.
- Mathematik und Technologie, with Yvan Saint-Aubin, Springer-Verlag Berlin, Heidelberg, 2012, 609p.
- Matemática e atualidade, avec Yvan Saint-Aubin, volumes 1 and 2, Sociedade Brasileira de Matemática, 2015, 326p. and 374p.

### **Organization of an international year “Mathematics of Planet Earth 2013” (MPE2013), under the patronage of UNESCO**

- Co-organization of a joint IMU-IUGG-IUTAM workshop “Climate change, related hazards and risks” at CIMAT, Mexico, 2013.
- Co-organization of the International MPE competition and MPE Exhibition.
- Co-organization of the CRM activities related to MPE2013, including a pan-Canadian program in epidemiology, ecology and public health.
- Member of the Scientific Committee of the SIAM Annual Meeting, 2013.
- Co-organization of a workshop “Planetary motions, satellite dynamics and spaceship orbits” at CRM, July 2013.
- Co-organization of a Mathematics of Planet Earth Day” at UNESCO on March 5 2013.
- Coordination and distribution of a special issue of Accromath distributed in 14 African francophone countries.
- Member of the organizing Committee of the CMS winter meeting, 2012 and the simultaneous international launch of MPE2013.
- Co-organization of a workshop “Mathematics of Planet Earth 2013” at American Institute of Mathematics, 2011.

### **Organization of conferences and special sessions**

- Member of the organizing committee of Mathematical Congress of the Americas 2017 (MCA2017), Montreal 2017.
- Co-organization of the summer school “School of contemporary dynamical systems” (inside Séminaire de mathématiques supérieures) and one minicourse, Montreal, July 2017.
- Co-organization of a joint IMU-IUBS-IUMS-IUIS-ICIAM-UNESCO workshop “Global change impact on diseases and alien species expansion” at AIMS, Cape Town, May 2016
- Co-organization of an Invited Paper Session of the MAA at the Joint Mathematics Meeting, San Antonio, 2015.
- Member of the Scientific Committee of the International Congress of Women Mathematicians 2014 (ICWM2014), Seoul, Korea.
- Co-organization of a Klein workshop at American Institute of Mathematics, 2011.



- Co-organization of a workshop “Decision analysis and sustainable development” at CRM, september 2010.
- Member of the Steering Committee of ICIAM 2011
- Organization of a workshop in Luminy, May 2009 “Singularities of planar vector fields, bifurcations and applications” (with Pavao Mardesic).
- Organization of the Canadian bid for ICM 2014 in Montreal.
- Organization of the thematic semester “Dynamical systems and evolution equations” winter 2008 at CRM (with Walter Craig).
- Organization of a workshop “Mathematical developments around Hilbert’s 16th problem”, BIRS, March 2007.
- Organization of the Canadian bid for ICM 2010 in Montreal.
- Organization of a session “Dynamical systems” in the first France-Canada meeting, Toulouse, 2004, with Robert Roussarie.
- Organization workshop in Luminy, for R. Roussarie 60-tj birthday, with P. Mardesic, June 2004.
- Organization of a Canada School Mathematics Forum for the Canadian Mathematical Society, Scientific co-President, Montreal, 2003.
- Organization of the Nato Advanced Study Institute (Séminaire de mathématiques supérieures) with Y. Ilyashenko, “Normal forms, bifurcations and finiteness problems in differential equations”, July 2002 (and 4 lectures).
- Organization of a colloquium “Nonlinear dynamics and mathematical biology”, Entretiens Jacques-Cartier 2000, Montréal.
- Organization of the first Job Fair at the Canadian Mathematical Society Meeting, Montreal, December 1999.
- Organization of a special session “Dynamical systems” at the Canadian Mathematical Society Meeting, Montreal, December 1999.
- Organization of a workshop “Algebraic and geometric methods in planar vector fields”, CRM, January 1999, with Dana Schlomiuk .
- Organization of the thematic semester winter 2004 at CRM “Bifurcations and periodic orbits of vector fields”.
- Organization of a workshop “Qualitative theory of vector fields” at CRM, June 1989, with Pierre Joyal.
- Organization of a workshop “Generic families of vector fields” at CRM, June 1987, with J. Bélair.

### **Graduate students**

- Martin Klimes, Ph.D 2014.
- Sophie Laurin, master 2011.
- Waldo Arriagada-Silva, Ph.D 2010.
- Caroline Lambert, Ph.D., 2010.
- Remy Etoua, Ph.D. 2008.
- Yann Lamontagne, master, 2006.
- Caroline Lambert, master 2004.
- Caroline Coutu, master, 2003.
- Jean-Philippe Lessard, master, 2002.

- Huaiping Zhu, Ph.D., 1999.
- Louis-Sébastien Guimond, Ph.D. 1999. Co-supervision with Robert Roussarie.
- Bourama Toni, Ph.D., 1994.
- Luciano Buono, master, 1994.
- Louis-Sébastien Guimond, master, 1994
- Pierre Joyal, Ph.D., 1987

### **Editorial boards**

- Annales des sciences mathématiques du Québec, 2000-2008.
- Accromath, 2007-

### **Lectures in colleges**

- Two or three lectures in cegeps or colleges per year
- Presentation at the annual congress of the AMQ (Association mathématique du Québec) almost every year since 1996.
- Co-organizer of a science day for cegep professors in June 1998.
- Co-organizer of a MPE day for cegep professors in December 2012.

### **Popularization activities**

- Organization with Yvan Saint-Aubin of the Grandes Conférences Publiques of CRM (public lectures at CRM) since 2006.
- Participation at a panel and a working group at the second Canada School Mathematics Forum, Toronto, May 2005.
- Plenary lecture at CMESG (Canadian mathematical education study group) « Mathematics and technology », Edmonton, May 2001.
- Scientific President and judge for the super Expo-Sciences Bell 2001, Montréal, April, 2001.
- Co-organizer of a Forum at the congress of ACFAS « La formation des professeurs de sciences au secondaire », May 2001.
- Participation at a round table at the radio program « Les années lumière » at Radio-Canada on the training of future high-school teachers, 2001.
- Conference at the scientific café of UQAM « Les mathématiques, la plus universelle des langues », , May 2000.
- Panelist at the 2000 SWAAC (senior women academic administrators of Canada), Montreal, April 2000 .
- Participation to the TV series « C'est mathématique » at canal Z March 2000.
- Operation Métro-2000: organizer of the poster campaign in the Montreal subway in January 2000 for WMY 2000.
- Collaboration in the preparation of a mathematical exhibition « 1, 2, 3, math... », with the Musée du séminaire de Sherbrooke and AMQ, 1999.

### **Organization or animation of mathematical camps**

- Organization of the mathematical camp of AMQ (Association mathématique du Québec) 2015, 2016.
- Organization of the mathematical camp of AMQ (Association mathématique du Québec) with A. Giroux, University of Montreal, 1994-97.

- Animation for one day at the mathematical camp of AMQ in 1989, 1994, 1996, 1997, 2000-2004.