Curriculum Vitae: Luc Rey-Bellet

Personal History:

Office Address: Department of Mathematics and Statistics
University of Massachusetts
Lederle Graduate Research Tower
Amherst, MA 01003
(413) 545-6020
luc@math.umass.edu

Home Address: 33 Ridgewood Terrace
Northampton, MA 01060
(413) 588-1918

Citizenship: Switzerland, U.S. permanent resident

Languages: French (native), English (fluent), German (proficient)

Educational History:

Ph.D. in Mathematics 1998, Department of Mathematics, University of Geneva, Geneva, Switzerland

Dissertation: *Markov Process and Non-equilibrium Statistical Mechanics*
Adviser: Prof. Jean-Pierre Eckmann

Dipl. Phys. ETHZ 1994, Department of Physics, Swiss Federal Institute of Technology (ETHZ), Zürich, Switzerland

Dissertation: *Low Temperature Expansion for a Variant of the $t - J$ Model*
Adviser: Prof. Jürg Fröhlich

Professional appointments:

Research Fellow: Rutgers University 1998-1999

Whyburn Instructor: University of Virginia 1999-2002

Assistant Professor: University of Massachusetts 2002-2008

Associate Professor: University of Massachusetts 2008-2013

Visiting Professor: University of Crete 2011 (Spring semester)

Professor: University of Massachusetts since 2013

Grants:

- SNF Young Researcher Grant (award CHF 45'000) (1998-1999)
- NSF-Grant DMS-0306540 (P.I., award $101'000): Mathematical Problems in Nonequilibrium Statistical Mechanics (2003-2006)

- NSF-Grant DMS-0605058,(P.I., award $102'000): Mathematical and Computational Problems in Nonequilibrium Statistical Mechanics (2006-2010)
- NSF-Grant DMS-1109316 (P.I., award $95'000): Game Theory and Statistical Mechanics (2011-2015)
- DOE-Grant (Co-P.I., total award $2.25 millions): Mathematical Foundations for Uncertainty Quantification in Materials Design. (2013–2017)
- NSF-Grant DMS-1515712 (P.I., award $280'000): Mathematical and Computational Methods for Non-Equilibrium Systems (2015-2019)
- AFOSR-Grant FA-9550-18-1-0214 (Co-PI, total award $900,00): Information Methods for Uncertainty Quantification and Performance Guarantees in Predictive Modeling (2018-2020)

Editorial Board:

- Journal of Statistical Physics 2013–2018

Graduate students and postdoctoral advising:

- Dimitrios Tsagkarogiannis (Graduation 2006, University of Sussex)
- Michael Diehl (Graduation 2008, Endicott College)
- Sasanka Are (Graduation 2009, Cerner Corporation)
- Sung-Ha Hwang (Graduation 2011, KAIST, Korea)
- Sasanka Are (Graduation 2009, Cerner Corporation)
- Yannis Pantazis (Postdoctoral fellow, 2012-2013, and 2014-2015, Forth Crete)
- Kostis Gourgoulias (Graduation 2017, Babylon Health)
- Georgios Arampatzis (Postdoctoral fellow, 2014-2015, ETH Zürich)
- Jinchao Feng (Graduation 2019, John Hopkins University)
- Jie Wang (graduation 2019, Discover)
- Jeremiah Birrell (Postdoctoral fellow, 2017-)

Teaching Experience:

University of Massachusetts Amherst since 2002

Fall 2002: Math 131 Calculus I
Spring 2003: Math 132 Calculus II
Spring 2003: Math 421 Complex variables

Fall 2003: Math 597/697 Introduction to stochastic processes
Spring 2004: Math 131 Calculus I
Fall 2004: Math 645 Differential equations and dynamical systems
Spring 2005: Math 646 Ergodic theory
Spring 2005: Math 131 Calculus I
Fall 2005: Math 645 Differential equations and dynamical systems
Fall 2005: Stat 515 Introduction to Statistics I
Spring 2006: Math597/697 Introduction to stochastic processes
Fall 2006: Math 623 Real analysis I
Fall 2006: Math 131H Honor calculus I
Spring 2007: Math 624 Real analysis II
Fall 2007: Math 697U Introduction to stochastic processes
Fall 2007: Math 331 Differential equations
Spring 2008: Math 331 Differential equations
Fall 2008: Math 331 Differential equations
Fall 2008: Math 645 Differential equations and dynamical systems
Fall 2009: Math 697EG Evolutionary game theory
Spring 2010: Math 697U Introduction to stochastic processes
Spring 2010: Math 331 Differential equations
Fall 2010: Math 623 Real analysis I
Fall 2010: Math 131H Honor calculus I
Fall 2011: Math 623 Real analysis I
Spring 2012: Math 624 Real analysis II
Spring 2012: Math 456 Mathematical Modeling
Spring 2013: Math 456 Mathematical Modeling
Spring 2013: Math797fn Functional Analysis
Fall 2013: Math 623 Real Analysis I
Spring 2014: Math 624 Real Analysis II
Spring 2014: Math 331 Differential equations
Fall 2014: Math697U Introduction to stochastic processes
Spring 2015: Math 456 Mathematical Modeling
Spring 2015: Math 797MR Information Theory
Fall 2015: Math 797AB Agent-based modeling
Spring 2016: Math 456 Mathematical Modeling
Spring 2016: Math 523H Real analysis
Fall 2016: Math 797SM Statistical mechanics
Spring 2017: Math 331 Differential equations
Spring 2017: Math 523H Real analysis
Fall 2017: Stat 605 Probability Theory
Fall 2017: Math 331 Differential equations
Spring 2018: Math697U Stochastic Processes
Spring 2019: Math 456 Mathematical Modeling

University of Virginia 1999-2002

Fall 1999: APMA 310 Probability
Spring 2000: APMA 206, Differential equations (2 sections)

Fall 2000: APMA 310 Probability
Fall 2000: Math 531 Introduction to real analysis I
Spring 2001: Math 532 Introduction to real analysis II
Fall 2001: Math 131 Calculus I (2 sections)
Spring 2002: Math 845 Ergodic Theory

University of Geneva, 1994-1998 (Teaching assistant)

1994-1995: Mathematics II for computer scientists
1994-1995: Function of several complex variables
1995-1996: Analysis I
1995-1996: Dynamical systems and ergodic theory
1996-1997: Mathematics for engineers
1996-1997: Numerical methods for PDE
1997-1998: Analysis II

Research Interests: My research interests are in statistical mechanics, in particular in the foundations of non-equilibrium statistical mechanics, as well as in the applications of statistical mechanics tools ideas to computational methods, game theory, dynamical systems, and uncertainty quantification.

Publications:

1. Datta N., Fernandez R., Fröhlich J., and Rey-Bellet L.: Low-temperature phase diagrams of quantum lattice systems. II. Convergent perturbation expansions and stability in systems with infinite degeneracy. Helv. Phys. Acta. **69**, 752–820 (1996) http://doi.org/10.5169/seals-116979 and Reprint

2. Fröhlich J. and Rey-Bellet L.: Low-temperature phase diagrams of quantum lattice systems. III. Examples. Helv. Phys. Acta. **69**, 821–849 (1996) http://doi.org/10.5169/seals-116980 and Reprint

3. Eckmann J.-P., Pillet C.-A., and Rey-Bellet L.: Non-equilibrium statistical mechanics of anharmonic chains coupled to two heat baths at different temperatures. Commun. Math. Phys. **201**, 657–697 (1999) https://doi.org/10.1007/s002200050572 and Reprint

4. Eckmann J.-P., Pillet C.-A., and Rey-Bellet L.: Entropy production in non-linear, thermally driven Hamiltonian systems. J. Stat. Phys. **95**, 305–331 (1999) https://doi.org/10.1023/A:1004537730090 and Reprint

5. Rey-Bellet L. and Thomas L.E.: Asymptotic behavior of thermal non-equilibrium steady states for a driven chain of anharmonic oscillators. Commun. Math. Phys. **215**, 1–24 (2000) https://doi.org/10.1007/s002200000285 and Reprint

6. Bonetto F., Lebowitz J.L. and Rey-Bellet L.: Fourier law. A challenge to theorists. In: *Mathematical Physics 2000*, A. Fokas, A. Grigoryan, T. Kibble and B. Zegarlinski (Eds.), Imp. Coll. Press, London 2000, pp. 128–150 https://doi.org/10.1142/9781848160224_0008 and Reprint

7. Fröhlich J., Rey-Bellet L., and Ueltschi D.: Quantum lattice models at intermediate temperatures. Commun. Math. Phys. **224**, 33–63 (2001)
https://doi.org/10.1007/s002200100530 and Reprint

8. Rey-Bellet L. and Thomas L.E.: Exponential convergence to non-equilibrium stationary states in classical statistical mechanics. Commun. Math. Phys. **225**, 305–329 (2002) https://doi.org/10.1007/s002200100583 and Reprint

9. Rey-Bellet L. and Thomas L.E.: Fluctuations of the entropy production in anharmonic chains. Ann. Henri Poincaré. **3**, 483–503 (2002)
https://doi.org/10.1007/s00023-002-8625-6 and Reprint

10. Rey-Bellet L.: Statistical mechanics of anharmonic lattices. In *Advances in differential equations and mathematical physics*, Y. Karpeshina, G. Stolz, R. Weikard, and Y. Zeng (Eds.), Contemporary Mathematics Series, Providence, AMS (2003) pp. 283–298 Reprint

11. Rey-Bellet L. and Thomas L.E.: Low regularity solutions to a gently stochastic nonlinear wave equation in nonequilibrium statistical mechanics. Stochastic Process. Appl. **115**, 1041–1059 (2005) https://doi.org/10.1016/j.spa.2005.02.003 and Reprint

12. Lenci M. and Rey-Bellet L.: Large deviations in quantum lattice systems: One phase region. J. Stat. Phys. **119**, 715–746 (2005)
https://doi.org/10.1007/s10955-005-3015-3 and Reprint

13. Rey-Bellet L.: Nonequilibrium statistical mechanics of open classical Systems. In *XIVth International Conference on Mathematical Physics*, J.-C. Zambrini (Ed.), Hackensack, NJ, World Scientific pp. 447–454
https://doi.org/10.1142/9789812704016_0043 and Reprint

14. Rey-Bellet L. : Ergodic properties of Markov processes. In *Open Quantum systems II. The Markovian approach*, S. Attal, A Joye, C.-A. Pillet (Eds), Lecture notes in Mathematics **1881**. Berlin, Springer 2006 pp. 1–39
https://doi.org/10.1007/3-540-33966-3_1 and Reprint

15. Rey-Bellet L. : Classical open systems. In *Open Quantum systems II. The Markovian approach*, S. Attal, A Joye, C.-A. Pillet (Eds), Lecture notes in Mathematics **1881**. Berlin, Springer 2006 pp. 40–78
https://doi.org/10.1007/3-540-33966-3_2 and Reprint

16. Bonetto F. and Rey-Bellet L.: Fourier law. In *Encyclopedia of Mathematical Physics*, J.-P. Francoise, G.L. Naber, T. S. Tsun (Eds) Academic Press 2006, pp. 374–379 Reprint

17. Katsoulakis M., Plecháč P., Rey-Bellet L. and Tsagkarogiannis D.: Coarse-graining schemes and a posteriori error estimates for stochastic lattice systems. ESAIM: Mathematical Modeling and Numerical Analysis **41**, 627–660 (2007)
https://doi.org/10.1051/m2an:2007032 and Reprint

18. Katsoulakis M., Plecháč P., Rey-Bellet L. and Tsagkarogiannis D.: Mathematical strategies in the coarse-graining of extensive systems: error quantification and adaptivity. J. Non Newtonian Fluid Mech. **152**, 101–112 (2008) https://doi.org/10.1016/j.jnnfm.2007.05.005 and Reprint

19. Rey-Bellet L. and Young L.S.: Large deviations in nonuniformly hyperbolic dynamical systems. Ergodic Theory and Dynam. Systems **28**, 587-612 (2008) https://doi.org/10.1017/S0143385707000478 and Reprint

20. Katsoulakis M., Plecháč P., and Rey-Bellet L.: Numerical and Statistical Methods for the Coarse-Graining of Many-Particle Stochastic Systems. J. Sci. Comp. **37**, 43–71 (2008) https://doi.org/10.1007/s10915-008-9216-6 and Reprint

21. Are S., Katsoulakis M., Plecháč P., and Rey-Bellet L.: Multi-body interactions in coarse-graining schemes of extended systems. SIAM J. Sci. Comput. **31**, 987-1015 (2008) https://doi.org/10.1137/080713276 and Reprint

22. De Roeck W., Maes C., Netočkny, and Rey-Bellet L.: A note on the non-commutative Laplace-Varadhan integral lemma. Rev. Math. Phys. **22**, 939–958 (2010) https://doi.org/10.1142/S0129055X10004089 and Reprint

23. Pillet C.-A., Jaksić V., and Rey-Bellet L.: Entropic fluctuations in statistical mechanics I. Classical dynamical systems. Nonlinearity 24 , 699-763 (2011) https://doi.org/10.1088/0951-7715/24/3/003 and Reprint

24. Ogata Y. and Rey-Bellet L.: Ruelle-Lanford functions and large deviations for asymptotically decoupled quantum spin systems. Rev. Math. Phys. **23**, 211–232 (2011) https://doi.org/10.1142/S0129055X11004291 and Reprint

25. Nahmod, A., Rey-Bellet L., Sheffield, S., and Staffilani G.: Absolute continuity of Brownian bridges under certain gauge transformations. Math. Res. Lett. **18**, 875–887 (2011). http://dx.doi.org/10.4310/MRL.2011.v18.n5.a6 and Preprint

26. Hwang S.-H. and Rey-Bellet L.: Decompositions of two player games: potential, zero-sum, and stable games. Unpublished. arXiv:1106.3552

27. Nahmod, A., Oh H., Rey-Bellet L, and Staffilani G.: Invariant weighted Wiener measures and almost sure global well-posedness for the periodic derivative NLS. J. Eur. Math. Soc. **14**, 1275–1330 (2012) https://doi.org/10.4171/JEMS/333 and Reprint

28. Hwang, S.-H., Katsoulakis M., and Rey-Bellet L.: Deterministic equations for stochastic spatial evolutionary games. Theor. Econ. **8**, 829–874 (2013) https://doi.org/10.3982/TE829 and Reprint

29. Katsoulakis M., Plecháč P., Rey-Bellet L. and Tsagkarogiannis D.: Coarse-graining schemes for systems with short-range and long-range interactions. Math. Comp. 83, 288, 1757-1793 (2014) https://doi.org/10.1090/S0025-5718-2014-02806-8 and Reprint

30. Katsoulakis M., Pantazis, Y. and Rey-Bellet L.: Measuring the irreversibility of numerical schemes for reversible stochastic differential equations. ESAIM: Mathematical Modelling and Numerical Analysis 48 , 1351–1379 (2014) https://doi.org/10.1051/m2an/2013142 and Reprint

31. Rey-Bellet L. and Spiliopoulos K.: Irreversible Langevin samplers and variance reduction: a large deviation approach. Nonlinearity 28, 2081-2103, (2015) https://doi.org/10.1088/0951-7715/28/7/2081 and Reprint

32. Rey-Bellet L. and Spiliopoulos K.: Variance reduction for irreversible Langevin samplers and diffusion on graphs. Elec. Commun. Prob. 20, Article 15, 1–16 (2015) https://doi.org/10.1214/ECP.v20-3855 and Reprint

33. Hwang S.-H. and Rey-Bellet L.: Strategic decompositions of normal form games: potential games and zero-sum games. Submitted. arXiv:1602.06648

34. Hwang S.-H. and Rey-Bellet L.: Simple characterizations of potential games and zero-sum games. Submitted. arXiv:1602.04410

35. Gourgoulias, K., Katsoulakis, M. and Rey-Bellet L.: Information metrics for long-time errors in splitting schemes for stochastic dynamics and parallel kinetic Monte Carlo. SIAM J. Sci. Comp. 38, No. 6, A3808-A3832 (2016) https://doi.org/10.1137/15M1047271 and Reprint

36. Arampatzis, G., Katsoulakis, M. and Rey-Bellet L.: Efficient estimators for likelihood ratio sensitivity indices of complex stochastic dynamics. J. Chem. Phys. 144, 104107 (2016) http://dx.doi.org/10.1063/1.4943388 and Reprint

37. Rey-Bellet L. and Spiliopoulos K.: Improving the convergence of reversible samplers. J. Stat. Phys. 164, 472-494 (2016) https://doi.org/10.1007/s10955-016-1565-1 and Reprint

38. Hall E., Katsoulakis, M. and Rey-Bellet L.: Uncertainty quantification for generalized Langevin dynamics. J. Chem. Phys. 145, 224108 (2016) http://dx.doi.org/10.1063/1.4971433 and Reprint

39. Gourgoulias K., Katsoulakis M. and Rey-Bellet L.: Information criteria for quantifying loss of reversibility in parallelized KMC, J. Comp. Phys. 328, 1,438-454 (2017) https://doi.org/10.1016/j.jcp.2016.10.031 and Reprint

40. Katsoulakis M., Rey-Bellet L. and Wang. J.: Scalable Information Inequalities for Uncertainty Quantification. J. Comp. Phys. 336, 1, 513-545 (2017) https://doi.org/10.1016/j.jcp.2017.02.020 and Reprint

41. Hwang S.-H. and Rey-Bellet L.: Positive feedback in coordination games: stochastic evolutionary dynamics and the logit choice rule. Submitted. arXiv:1701.04870

42. Gourgoulias K., Katsoulakis M., Rey-Bellet L. and Wang J.: How biased is your model? Concentration inequalities, information and model bias. To be published in IEEE Trans. Inf. Theory. arXiv:1706.10260

43. Demers, M., Rey-Bellet L., and Zhang, H.: Fluctuation of the entropy production for the Lorentz gas under small external forces. Commun. Math. Phys. 363: 699–740 (2018) https://doi.org/10.1007/s00220-018-3228-3 and Reprint

44. Cuneo, N., Eckmann, J.-P., Hairer, M., and Rey-Bellet L.: Non-Equilibrium Steady States for Networks of Oscillators. Electron. J. Probab., 23 , paper no. 55, 28 pp. (2018) https://doi.org/10.1214/18-EJP177 and Reprint

45. Dupuis, P., Katsoulakis M, Pantazis Y., and Luc Rey-Bellet: Sensitivity analysis for rare events based on Rényi divergence. To be published in Ann. Appl. Prob. arXiv:1805.06917

46. Birrel J. and Rey-Bellet L.: Uncertainty quantification for Markov processes via variational principles and functional inequalities. Submitted. arXiv:1812.05174

47. Birrel J., Katsoulakis M. and Rey-Bellet L.: Robustness of dynamical quantities of interest via goal-oriented information theory. Submitted. arXiv:1906.09282

48. Birrel J. and Rey-Bellet L.: Concentration inequalities and performance guarantees for hypocoercive MCMC samplers. Submitted. arXiv:1907.11973

Scientific Visits:

- Institut des Hautes Etudes Scientifiques (IHES), May-June 2000 (Prof. Ruelle)
- University of Geneva, July-August 2000 (Prof. Eckmann)
- Swiss Federal Institute of Technology (ETHZ), June 2001 (Prof. Fröhlich)
- University of Geneva, July-August 2001 (Prof. Eckmann)
- Mc Gill University, July 2002 (Prof. Jaksic)
- University of Geneva, June 2003 (Prof. Eckmann)
- Institut Fourier, University of Grenoble, June-July 2003 (Prof. Joye and Attal)
- McGill University, August 2004 (Prof Jaksic)
- IHES, January 2005 (Prof. Ruelle and Lebowitz)
- Schrödinger Institute, Vienna, June 2008 (Special program on hyperbolic dynamics)
- University du Sud Toulon (Invited Professor, 1 month 2009-2010, Prof. Pillet)
- University of Tokyo, January 2010, (Prof. Ogata)
- University of Crete, Archimedes Center for Modeling, Analysis & Computation, January-April 2011 (Invited professor 3 months, Prof. Katsoulakis)

Conferences: Invited talks

1. Journées semi-classiques 1998, Grenoble, February 1998
2. Statphys 20, Paris, July 1998
3. 80^{th} Statistical mechanics conference, Rutgers University, December 1998
4. Non equilibrium statistical mechanics, Schrödinger Institute, February 1999
5. AMS sectional meeting, Birmingham, Novembe 2000
6. The 2002 UAB International conference on differential equations and mathematical physics, March 2002
7. Workshop on Fokker-Planck equations, Rennes, France, February 2003
8. ODYN-II, Probability and statistical mechanics, CIRM, Marseilles, March 2003
9. 89^{th} Statistical mechanics conference, Rutgers university, May 2003
10. Summer school on open quantum systems, Grenoble, July 2003 T
11. International congress of mathematical physics, ICMP 2003, Lisbon, August 2003
12. Young researcher symposium, Lisbon, July 2003
13. Workshop on dynamics and statistical mechanics, CRM, Montreal, August 2004
14. SIAM conference on applications of dynamical systems, Snowbird, May 2005
15. International congress on the applications of mathematics, Santiago de Chile, March 2006
16. AMS sectional meeting, Miami, April 2006
17. Workshop on statistical mechanics, CPT-CNRS, Marseilles, July 2006
18. 96^{th} Statistical mechanics Conference, Rutgers University, December 2006
19. Workshop on nonequilibrium statistical mechanics, Schrödinger Institute, Vienna, June 2008
20. Workshop on stochastic dynamical systems, Bielefeld, November 2008
21. Arizona school of analysis with applications I, University of Arizona, March 2009
22. NORDITA Stockholm, Multiscale modeling and simulation in science workshop, November 2009
23. SAMSI, Theory and qualitative behavior of stochastic dynamics workshop, February 2010
24. Arizona school of analysis with applications II, University of Arizona, March 2010
25. Indam meeting, Corinaldo, Hyperbolic dynamical systems in the sciences, June 2010

26. SIAM conference on nonlinear waves and coherent stuctures, August 2010

27. Oberwolfach seminar on ergodic theory of Markov processes, October 2010

28. 105^{th} Statistical mechanics Conference, Rutgers University, May 2011

29. FRG workshop on quantum spin systems, Harvard University, May 2011

30. Workshop on Coarse-graining of many-body systems: analysis, computations and applications, Archimedes Center for Modeling, Analysis & Computation, University of Crete, June 2011

31. Summer school non-equilibrium statistical mechanics, Montreal, July 2011

32. ENUMATH conference: minisymposium on Numerical Methods for Molecular Dynamics. September 2011

33. Workshop on Metastability and stochastic processes, (3 hours mini-course on Non-equilibrium statistical mechanics) Ecole des Ponts ParisTech, September 2011

34. Worksop on Stochastic Dynamics in Mathematics, Physics and Engineering, Bielefeld, November 2011 (cancelled)

35. Banff Workshop on Nonequilibrium Statistical Mechanics, November 2012 (cancelled)

36. SIAM conference on Mathematical aspects of material sciences, Philadelphia, June 2013

37. SPA conference (Stochastic processes and applications), Boulder, August 2013

38. AMS sectional meeting, Session on ergodic properties of dynamical systems. Saint Louis, October 2013

39. Randomness and Long-Time Dynamics in Nonlinear Evolution Differential Equations, Radcliffe Institute, Cambridge MA, November 2014

40. CIRM Workshop on Averaging and Homogenization in Deterministic and Stochastic Systems, Marseille, May 2015

41. CRiSM Workshop on Non-Reversible Markov Chains for Monte-Carlo Sampling, Warwick, September 2015

42. Meeting of the Canadian Mathematical Society, Montreal, December 2015

43. 114th Statistical Mechanics Conference, Rutgers, December 2015

44. Computational Statistics and Molecular Simulation (COSMOS), Paris, 2-5 February 2016

45. Numerical Aspects of Nonequilibrium Dynamics, Institut Henri Poincaré, Paris, 25-27 April 2017

46. Numerical Aspects of Nonequilibrium Dynamics, Institut Henri Poincaré, Paris, 25-27 April 2017

47. BIRS-CMO Workshop: Computational Statistics and Molecular Simulation: A Practical Cross-Fertilization, Oaxaca, November 11-November 16 2018

48. Worskshop on Entropic Fluctuation Relations in Mathematics and Physics, CRM, Montreal, October 29–November 2 2018

49. Ki-Net: Dimension reduction in physical and data sciences. Duke University, 1-3 April 2019

50. Bernoulli Center: Computational mathematics for model reduction and predictive modelling in molecular and complex systems, EPFL 21 - 29 May 2019

Seminars:

1. Mathematical physics seminar, ETH, Zürich January 1998
2. Mathematical physics seminar, CPT-CNRS, Marseille, January 1998
3. Mathematical physics seminar, Institut Fourier Grenoble, February 1998
4. Mathematical physics seminar, University Paris-XI Orsay, April 1998
5. Mathematical physics seminar, University of Virginia, November 1998
6. Colloquium, University of Ottawa, January 1999
7. Statistical mechanics seminar, Princeton University, February 1999
8. Mathematical physics seminar, University of Geneva, July 1999
9. Dynamical systems seminar, SUNY at Stony Brook, November 1999
10. Mathematical physics seminar, University of Geneva, July 2000
11. Mathematical physics seminar, ETH, Zürich, August 2000
12. Colloquium, University of Arizona, October 2000
13. Statistical mechanics seminar, Princeton University, February 2001
14. Applied mathematics seminar, University of Toronto, March 2001
15. Theoretical physics seminar, University of Geneva, May 2001
16. Mathematical physics seminar, ETH Zürich, June 2001
17. Analysis seminar, University of Helsinki, August 2001
18. Mathematical physics seminar, University of Texas at Austin, January 2002

19. Colloquium, University of Massachusetts, Amherst, January 2002
20. Colloquium, University of Maryland, College Park, January 2002
21. Colloquium, University of Rochester, February 2002
22. Colloquium, University of Notre Dame, February 2002
23. Statistical mechanics seminar, Institute of Advanced Study, February 2002
24. Nonlinear analysis seminar, Stevens Institute of Technology, May 2002
25. Mathematical physics seminar, Rutgers University, October 2002
26. Stochastic processes seminar, Brown University, November 2002
27. Mathematical physics seminar, University of Virginia, January 2003
28. Condensed matter seminar, University of Massachusetts, April 2003
29. Probability seminar, EPFL, Lausanne, June 2003
30. Mathematical physics seminar, University of Geneva, June 2003
31. Applied mathematics seminar, Duke University, March 2004
32. Mathematical physics seminar, University of Geneva, January 2005
33. Analysis and mumerics seminar, Münich University, January 2005
34. Mathematical physics seminar, Münich University, January 2005
35. Dynamical systems seminar, Boston University, April 2005
36. Nonlinear systems seminar, Stevens Institute of Technology, April 2005
37. Mathematical physics seminar, Rutgers University, September 2005
38. Mathematical physics seminar, University of Virginia, November 2006
39. Mathematical physics seminar, Rutgers University, November 2006
40. Applied mathematics seminar, Dartmouth College, April 2007
41. Mathematical physics seminar, University of Arizona, October 2007
42. Analysis seminar, University of Toronto, October 2007
43. Applied mathematics seminar, Brown University, November 2007
44. Colloquium, University of Connecticut, February 2009
45. Probability seminar, University of Wisconsin, March 2009
46. Theoretical physics Seminar, University of Geneva, April 2009

47. Mathematical physics Seminar, University of Rome, April 2009
48. Mathematical physics Seminar, University of Bologna, April 2009
49. Mathematical physics Seminar, University of Grenoble, May 2009
50. Applied mathematics Seminar, University of Crete, May 2009
51. Mathematical physics seminar, Rutgers University, November 2009
52. Operator algebra, University of Tokyo, January 2010
53. Joint PDE seminar Boston University – Brown University, November 2010
54. Applied Mathematics Seminar, University of Crete, March 2011
55. Probability Seminar, Warwick University, March 2011
56. Probability Seminar, Boston University, September 2012
57. Probability Seminar, University of Delaware, October 2013
58. Probability Seminar, Concordia University, May 2015
59. Probability Seminar, Brown University, November 2016
60. Mathematical physics seminar, Rutgers University, December 2017
61. Dynamical systems seminar, Courant Institute, NYU January 2018